

Lost in Transitions

Analyzing Sectoral Transitions in Postcolonial Developing
Island States, Investigating Theoretical and Practical Gaps in
Sustainability Transitions Theory

DPA Analysis Component of 60,000 words.

- and -

You Say You Want an Evolution?

The Gradual Nature of Policy Change: Developing a System of
National Wellbeing Indicators in Times of Civic Unrest

DPA Policy Portfolio of 40,000 words.

—

UCL Faculty of Engineering Sciences

Doctorate of Public Administration (DPA), Science, Technology, Engineering
and Public Policy (STeAPP)

Cover letter on the nature of the DPA program, the two components of the DPA thesis, and assessment guidelines

This is a thesis for the Doctor of Public Administration (DPA) degree, which is a research degree. The thesis is divided into two components addressing two different aspects of the candidate's professional and analytical development aims: to become a more reflective, critical and knowledgeable public policy expert in the fields of sustainability and sustainability transitions, and in the effective delivery of sustainable wellbeing and development policies.

Each component of the DPA thesis answers to different guidelines, speaks to discrete assessment criteria, and is authored in a distinct style: the first academic, the second autobiographical with annotated references to public policy literature.

Both components attempt to contribute to literature as well as to policy making.

The policy placement of the candidate

UCL's Department of Science, Technology, Engineering and Public Policy (STEEaPP) consists of two doctoral training programs: PhD and DPA. According to STEEaPP guidelines, DPA fulltime degree candidates complete their research doctorate during their placement in policy-oriented organizations.

Two components of the DPA thesis

According to UCL Academic Manual, Doctor of Public Administration Regulations, Section 3 Assessment, Article 3.2.4, the main part of the DPA thesis is expected to constitute about 60% of the thesis and is entitled "analysis component". The policy portfolio – referred to as "a portfolio of policy problem(s) tackled in the policy setting of the DPA candidate" – should constitute the remaining 40% of the DPA thesis.

The analysis component of the thesis

The analysis component (*Lost in Transitions: Analyzing Sectoral Transitions in Postcolonial Developing Island States, Investigating Theoretical and Practical Gaps in Sustainability Transitions Theory*) is expected to have "a much more academic flavor to it than the policy portfolio". To this end, it ought to focus on a specific body of academic literature which situates the analysis the candidate is carrying out as part of the DPA research.

As such, the analysis component will have a significant literature review section, a detailed methods section, data analysis and a discussion relevant to theory.

Earlier versions of these sections of the analysis component were assessed in UCL STEaPP in the course of the research; both as part of the Progression Viva and in four rounds of revisions, considering commentaries suggested by an inter-departmental supervisory team.

The policy portfolio component of the thesis

By UCL STEaPP guidelines, the policy portfolio is intended as a practical showcase of the actual policy work the DPA candidate has been involved in during (and, where relevant, before) the DPA program. The policy portfolio must demonstrate two things: (a) that the candidate has been undertaking actual, good quality policy activity in the institutional setting of the candidate's choice and (b) that the candidate developed a level of intellectual rigor and reflective critical analysis distinctive of a successful UCL STEaPP DPA candidate.

The policy portfolio consists of four documents, two of which are presented in the final DPA thesis: an "analytical report" and an "annex of policy documents". The "analytical report" – also referred to in STEaPP as a "critical analysis" and as a "narrative report" – should have a number of sections addressing particular aspects of the policy area the candidate investigated.

These sections comprise: (a) what the policy is about, and where it came from (i.e. background of policy history and trajectory), (b) an institutional mapping, (c) what the candidate's role was with respect to the policy and where the candidate fits in to any institutional mapping set out in the above section, (d) a critical review of the progress of the policy elements relative to the candidate's work: what the goal was, what activities were advanced towards that goal and what helped or hindered progress.

An earlier version of the policy portfolio's "analytical report" submitted here (*The Gradual Nature of Policy Change: Developing a System of National Wellbeing Indicators in Times of Civic Unrest*) has been assessed in STEaPP internally, as part of the core modules.

Introducing this DPA thesis and policy portfolio

The analysis component and policy portfolio included in the DPA thesis are connected in terms of the research aims of this DPA (see above), which relate to the effective delivery of development policy, or public administration of development processes.

Three commonalities run as unifying threads through the two components – which otherwise differ, as abovementioned, in structure, style, literary fields, target audiences and examination criteria.

First, both the policy portfolio and the analysis component engage with ideas and notions of social-wide and political changes.

The policy portfolio attempts to contribute to public policy literature and practice by proposing a hypothesis of the general nature of policy change, and then, by providing it with empiric evidences (in the form of observations).

The second component of the DPA thesis, the analysis component, explores the theory of Sustainability Transitions – a concept that has a significant relevance for both policy and academic thinking and attempts to explain fundamental structural changes in economic sectors and in societies at large.

By employing ideas (of policy change) and conceptual models (of transitions) in case studies (Israel – in the policy portfolio; Sri Lanka, Jamaica and Nauru – in the analysis component) – both components of the DPA thesis highlight necessary modifications to theories and concepts.

A second common thread, both the policy portfolio and the analysis component address issues and discussion of development and development policy. The former, examines the nature of policy change as it unfolds in one specific, particular, policy process – that is the development of a "system of national wellbeing indicators" in Israel between 2012 and 2016. Wellbeing as a policy priority represents one of two aspects of development – that of progress outcomes at any given moment.

The latter (analysis component), explores development outcomes, or progress outcomes, over time. In other words, sustainable development policy processes, through the lens of sustainability transitions.

A third commonality, in methods of inquiry, both components of the DPA thesis draw heavily on evidences and case study analyses (small-N sample).

To appreciate the applicability of sustainability transition approaches in the context of developing states – the analysis component of the DPA thesis conducted an empirical survey of 180 individuals, participant observations, archival research, a review of 536 books and articles, in 9 fieldwork missions and some 50 research sites. This was administered to provide a canvas broad enough to test Sustainability Transitions epistemology and hypotheses with local communities of knowledge: its theoretical scope – levels and units of analysis, its transition causation mechanisms, its validity outside its origin-context in developed countries, and, by extension, to establish whether or not its universal assumptions are justified.

The policy portfolio attempted to contribute to public policy literature and practice by proposing a hypothesis of the general nature of policy change, and then, by providing it with empirical observations. To conduct its examination, the policy portfolio hinged on public policy literature and on the personal accounts of a civil servant, the author, in a selected, evolving case study. This investigation, into a selected case study, is extensive, and rests on six years of data gathered in various public policy theaters and across many endeavors.

Weighed separately, the policy portfolio addresses the practical question of developing wellbeing measures and delivering development outcomes in public administration (for a complete context see Preface to DPA policy portfolio analytical report, page 292, and Introduction to the analytical report, pages 293-294).

The analysis component takes a much wider view. It is looking at the drivers and dynamics of socio-technical changes, employing the idea of sustainability transitions, over a period of 40 years in selected countries (for a complete context see Preface to DPA analysis component, pages 14-17).

Drawing on a multi-sectoral study, the analysis component illustrates that when employed in postcolonial developing island states, the multi-level perspective is

deficient. While the analytical framework is useful to some extent, it fails to provide a comprehensive explanation of what drives sectoral changes in developing island states and its epistemology is not fully-representative of sectoral and societal transitions in unindustrialized societies. The analytical tool does not adequately consider agency; it neglects to explain the concept of sustainability in applicable, operational terms; it overstates the role of niches in sectoral change processes while understating the rigidity of dominant socio-technical regimes; it offers neither a normative model nor a valid descriptive model of sectoral transformations, and therefore, subscribes no instrument for policy analysis and policy design. For these reasons, the analysis component suggests future empirical research and conceptual refinements to the theory before it could support policy processes.

With these analyses – in both DPA thesis components – this DPA seeks to contribute to transitions theory and management, to advance evidence-based sustainable development policies for developing states, to provide some insight on the nature of policy design and implementation, and to develop our understandings and conceptualizations of the nature and dynamics of policy processes for the sustainability of our wellbeing.

In these regards, the thesis was an instrument, and an analytical exercise of the greatest significance to achieve the DPA candidate's overarching research and professional development aims, portrayed hereabove.

Lost in Transitions

Analyzing Sectoral Transitions in Postcolonial Developing Island States, Investigating Theoretical and Practical Gaps in Sustainability Transitions Theory

DPA analysis component; first component of the DPA thesis

Abstract

The theory of Sustainability Transitions, a current concept that has a relevance for both policy and academic thinking, attempts to explain fundamental structural changes in individual economic sectors and in societies at large. Yet, its application outside developed industrialized societies, where the theory originated, has been limited. More research is required on the applicability of transition approaches in developing states. This study attends to this constraint by examining the explanatory power of the main theoretical tenets of sustainability transitions in the contexts of the agricultural and extractive sectors of the postcolonial developing island states of Nauru, Jamaica and Sri Lanka, which extends the geographical and historical terrain of the theory. An empirical survey of 180 individuals, participant observations, archival research, a review of 536 books and articles, in 9 fieldwork missions and some 50 research sites, provides a canvas broad enough to test Sustainability Transitions epistemology and hypotheses with local communities of knowledge: its theoretical scope – levels and units of analysis, its transition causation mechanisms, its validity outside its origin-context in developed countries, and, by extension, to establish whether or not its universal assumptions are justified. Drawing on a comprehensive multi-sectoral analysis, this study illustrates that when deployed in the context of developing countries, specifically in postcolonial island states, the multi-level perspective is deficient. While the analytical framework is useful to some extent, it falls short to provide an inclusive explanation of what drives sectoral changes in developing island states and its epistemology is not fully-representative of sectoral and societal transitions in unindustrialized island societies. The theory does not adequately consider the role of government, or agency; it fails to define the notion of sustainability in applicable, operational terms; it overemphasizes the role of niches and radical innovation networks in sectoral change processes while underemphasizing the rigidity of dominant socio-technical regimes; it offers neither a normative model nor a valid descriptive model of sectoral transformations, and therefore, subscribes no instrument for policy analysis and policy design. Further research is essential to examine whether or not these theoretical limitations are observable in other developing states, and in such event, further refinements of sustainability transitions analytical tools should be warranted.

Impact statement

States at different stages of development strive to cope with socioeconomic, technological and environmental concerns. Many struggle to transition their societies and economy onto a sustainable development path of more inclusive growth, decoupled from ecological degradation. But while some states are performing well on this agenda, others have failed: this can be ascribed partly to lack of holistic theoretical perspectives on how complex socio-technical systems work, such as economic sectors, as well as to a lack of evidence-based policy guidance .

Against this backdrop, theories of societal and human development have evolved in the past century to support better policy interventions in economic sectors and social affairs. One such theory, the theory of Sustainability Transitions, has cropped up in the past two decades to propose a catalogue of concepts and analytical frameworks of increasing sophistication to examine, evaluate and guide long-term sectoral and societal transformation processes .

In recent years, the theory of Sustainability Transitions has gained a foothold in various policy analysis theatres, though the theory itself evolved in a specific European context and hinged on certain modes of interaction between institutions in different sectors typical of the West. In other words, Sustainability Transitions has an origin-context, and this analysis component of the DPA thesis takes the theory out of that origin-context and applies it to three postcolonial developing island states, to see whether it offers a workable explanation in this context too.

By employing Sustainability Transitions, and its principal analytical framework – the multi-level perspective – in these settings, the analysis component of the DPA thesis can test the applicability of the conventional wisdoms that have built up in the literature on the causes and reasons of transition dynamics, on the units and levels of analysis, and on the conceptualization of sustainability, or lack thereof.

Drawing on empirical findings gathered through consultations, focus groups, semi-structured interviews and participant observations, this study finds critical deficiencies in Sustainability Transitions theory. In particular, the multi-level perspective is insufficient to provide a comprehensive explanation of what drives sustainability in developing countries, and for this reason, it is insufficient to help institutions in developing island states to deliver sustainable development transitions.

In other words, the multi-level perspective cannot be transformed into a process-guiding instrument or a policy analysis tool.

These findings bring into question the generalizability and applicability of the theory. By replicating the research in additional cases, future research could examine the agreement between the findings presented here and further measurements gathered in other developing countries. If similar empiric observations should surface, then further adjustments of sustainability transitions analytical tools should be explored and suggested.

In the meantime, for the local contexts of Nauru, Jamaica and Sri Lanka, the multi-level perspective does not offer an instrument to improve state-led design for prevailing regimes and sectors. It is incapable to lend advice on good governance of dominant, state-led socio-technical regimes.

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Acronyms

BATCo – Bauxite and Alumina Trading Company (Jamaica)

BPC – British Phosphate Corporation (Nauru)

CA – Capabilities Approach

CDF – Capital Development Fund (Jamaica)

ELI – Export Led Industrialization

EOI – Export Oriented Industrialization

EU – European Union

IMF – International Monetary Fund

ISI – Import Substitution Industrialization

JCS – Jamaica Country Strategy

JLP – Jamaica Labor Party

LTTE – Liberation Tigers of Tamil Eelam (Sri Lanka)

MLP – Multi-level Perspective

NPC – Nauru Phosphate Corporation (Nauru)

NPRT – Nauru Phosphate Royalties Trust (Nauru)

NSDS – National Sustainable Development Strategy (Nauru)

OECD – Organization for Economic Co-operation and Development

PNP – People's National Party (Jamaica)

RONPHOS - Republic of Nauru Phosphate (Nauru)

SAP – Structural Adjustments Policies

SDA - Sugar Dependent Areas (Jamaica)

SIDS - Small Island Developing States

SNM – Strategic Niche Management

UNP – United National Party (Sri Lanka)

Preface to the DPA analysis component

Can the theory of Sustainability Transitions, its central tenets and leading approach, explain large-scale, multi-decadal processes of substantial societal changes and re-configuration of sectoral activities in developing island states? Can transition approaches be applied, in their current form, to improve policy design in postcolonial developing island countries and guide interventions for sustainable development in the agricultural and extractive sectors?

This study, the analysis component of the DPA thesis, sets out to answer these questions, and in so doing, contribute to transition thinking and transition management, emerging fields of growing influence on policy analysis and policy design.

Sustainability transitions are defined as comprehensive social and technological development processes initiated in response to economic and environmental challenges. As a specialized anthology of studies, it is inspired by neo-institutional theory, science and technology studies, innovation economics, evolutionary economics, socio-technical systems research and structuration theory.

Despite an explicit universal explanatory ambition of transition approaches, transition scholarship has thus far centered on economic sectors in industrialized developed states. In addition, it has primarily analyzed bottom-up transitions, led by niche-innovations, stressing the importance of strategic niche management on the part of the state, and the need to nurture radical innovation systems.

Socio-technical niches, the locus of innovation in society, according to the theory, strive to contest and ultimately replace an incumbent dominant socio-technical regime. The socio-technical regime, a given economic sector or industry, reflects the way in which certain properties are produced, traded and consumed, and services are provided to meet certain social needs.

The role of the state in sustainability transitions dynamics, particularly in developing economies, has remained relatively underexplored. Indeed, the need to pay more attention to government institutions, to top-down transitions (instead of bottom-up niche driven transitions), and to unindustrialized, developing states, was recognized in several works.

A recent survey of transition approaches registered that transition theory is largely restricted to its "birthplace" in developed societies, and therefore, ought to be deployed and tested in other contexts, and be modified accordingly. Furthermore, in the volume of work dedicated to transitions, the notions of "sustainability" and "sustainable development" remained open for interpretation.

These are all critical lacunae which also pose barriers for a practical use of transitions theory in policy making: a fact well recorded in the field. This study attempts to analyze and attend to these limitations. It expands the transitions theory to the extent that it could offer appropriate policy options for developing island states.

Grounded in empirical work¹ to study sustainable and unsustainable transitions of the agricultural and extractive sectors in three postcolonial developing island states, Nauru, Jamaica and Sri Lanka, drawn on primary data obtained between 2016 and 2018 by surveying 180 individuals in one of three methods – participant observation, semi-structured interviews and focus group discussions – in over 50 research sites, and on archival research and literature reviews of 536 items, this study offers two contributions to transitions thinking and management.

First, it finds that conventional transition approaches fail to fully capture societal and sectoral change drivers and dynamics in the case studies. In their current form, transitions knowledge, narratives and frameworks are less suitable to describe sectoral transitions in the context of developing island states and small developing island states.

Specifically, as some transition approaches, namely the multi-level perspective, can describe sustainable and unsustainable sectoral transitions in Nauru, Jamaica and Sri Lanka to some degree – the landscape and the socio-technical regime are valuable levels and objects of analysis, the multi-level perspective and other approaches lay excessive emphasis on the role of niches and radical innovation systems, and on bottom-up dynamics, while under-emphasizing the role of government institutions and top-down policies in transitions. Some units of analysis are irreconcilable with the development context entirely. In these contexts, transition approaches need to be overhauled.

¹ The study was approved by UCL Research Ethics Committee (Project ID): Z6364106/2017/07/86, under the title "Managing Sustainability Transitions". The research which underpins the analysis component is based on a revised PID approved by STEaPP.

Second, predicated on evidence, this study calls for future research to replicate the design presented here, and attempt to reproduce the findings in other developing states, island or non-island. In the event that comparable observations arise, then modifications to sustainability transitions and the multi-level perspective are necessary, perhaps by integrating it with complementary theories of development and governance, and a precise operational conceptualization of sustainable development.

While the audience of this study is the sustainability transitions crowd, it is trying to come up with findings that speak to the broader sustainable development and governance community, as well as to policy makers in the developing world.

Part I Introduction and scope

1. *Sustainability transitions theory and other development approaches*

The origins of sustainability transitions theory date to the 1990s, when the notion of "transitions" was first employed for research purposes in the socio-technical systems field. Socio-technical systems are large constellations of individual and institutional actors, social and technological practices, standards and regulations, accumulated knowledge, and material artifacts and machinery (Geels, 2004; Markard, 2011; Weber, 2003).² The interplay of these components yields specific services for society. Markard et al. (2012) mentioned energy and water supply, and transportation services. Other socio-technical configurations for the service of society can be suggested, such as food provision, mineral extraction, garment manufacturing and financial services. These distinct sectors are conceptualized as socio-technical systems (Hughes, 1987; Joerges, 1998; Markard et al., 2012). Each particular system of institutions, practices, regulations, knowledge, artifacts and equipment put together to benefit society is characterized by interrelated dependencies between its components and its unique dynamics (Finger et al., 2005; Hughes, 1987; Markard, 2011).³

In this research domain, transitions used to broadly describe long-term comprehensive transformations within society, or re-configuration of large socio-technical systems (Rotmans et al., 2001), or the processes that result in a fundamental shift in socio-technical systems (Geels and Schot, 2010; Kemp, 1994). According to Markard et al. (2012:956), "in the course of such a transition, new products, services, business models, and organizations emerge, partly complementing and partly substituting for existing ones". In some transitions, "technological and institutional structures (will) change, as well as the perceptions of consumers regarding what constitutes a particular service (or technology)".⁴

² See also: Brian Arthur (2011) for a broad understanding of technology which suits the definition of socio-technical systems.

³ Geels (2005a:446) defined socio-technical systems as "a cluster of elements, including technology, regulation, user practices and markets, cultural meaning, infrastructure, maintenance networks and supply networks".

⁴ As a research field, sustainability transitions was either informed by or treated various theories including evolutionary economics (see Nelson and Winter, 1982; van den Bergh and Gowdy, 2000), actor network theory (see Law and Hassard, 1999), social construction of technology theory (see Bijker et al., 1987), long waves theory (see Freeman and Louca, 2001), and technology future studies (see Truffer et al., 2008).

When in 1987 the Brundtland Commission⁵ published *Our Common Future*, presenting the term "sustainable development" and placing it as a "global normative goal" (Lachman, 2013:270), the transitions cabal could set their research on a progressive and purposive path; to claim an "applied-research agenda" and to pursue it with zest and determination, increasing their output and policy reach. Transition studies would evolve from grasping changes to influencing them (van den Bosch, 2010). This will take a while, though.

In the early 2000s, transitions were still defined as sweeping transformations of socio-technical systems, during which "the structure of the societal system fundamentally changes" (Rotmans et al., 2001 in Lachman, 2013:270). In the midst of that decade, Geels expanded transitions theory with new analyses of natural experiments, or historical socio-technical transformations. He examined changes of water supply systems (2005a), the fundamental transportation shift from carriages to automobiles (2005b), and the move from cesspools to urban sewer systems (2006). In these studies, he emphasized the interaction, and co-evolution, of institutional structures, social practices and technological apparatuses in order to set socio-technical transitions apart from technological transitions.

Reflecting on Geels's studies, Markard et al. (2012:956) noted that "socio-technical transitions do not just change the very structures of existing systems... they affect related societal domains, such as living, housing and working, production and trade, and planning and policymaking". These spill-overs would be acknowledged later in the literature as a transition's social-wide knock-on effects.

Several years later, Loorbach and Rotmans (2010) gave greater accuracy to the transition definition. In the early 2010s, they described transitions as changes affecting the essential nature of a system's structure (institutions, organization of activities), a system's culture (values, behaviors, standards, rules) and a system's practices (habits, skills, procedures). Kemp and Loorbach (2003) and Alkemade et al. (2011) mentioned that transitions occur over a course of one or two generation, a period of 25 or 50 years. Markard et al. (2012) and Lachman (2013) concurred that roughly two decades is the time that is needed for a fundamental change in the way

⁵ Formally known as the World Commission of Environment and Development, an organization established at the request of the Secretary-General of the United Nations, but independent of the UN.

that a social need is satisfied – like agriculture, energy or transportation – to unfold. The principal phenomenon in the theory was given a time dimension.

When the concept of sustainable development, commonly interpreted as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987), finally colored transitions scholarship in 2011, the definition of transitions was particularized further. Now, it was understood as a fundamental objective-oriented change of socio-technical systems towards environmental and social sustainable alternatives (Geels, 2011; Kemp and van Lente, 2011).

Markard et al. (2012:956), in yet another conceptual contribution refined the notion of sustainability transitions, defining it in a more nuanced way as "long-term, multi-dimensional and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes of production and consumption". Sustainability transitions was better demarcated.

The majority of sustainability transitions studies that followed were devoted to analyse processes of sectoral re-design and re-arrangement in response to "sustainability challenges" (Markard et al., 2012), or in response to persistent environmental and social challenges (Grin et al., 2010; Avelino et al., 2016). Persistency, according to Avelino et al. (2016:557) is attributed to the "path dependency of dominant practices and structures, whose resolution requires structural and long-term change". The new scientific field reached an output of up to 100 academic papers per year (Markard et al., 2012:955), while gaining attention at policy circles (OECD, 2011; UNEP, 2011; EU, 2016). In its theoretical heyday, sustainability transitions scholarship bloomed to dispense new frameworks of growing sophistication, such as transition management (Kern and Smith, 2008; Loorbach, 2010; Rotmans et al., 2001), strategic niche management (Kemp et al., 1998; Raven and Geels, 2010; Smith, 2007), the multi-level perspective on socio-technical transitions (Berkhout et al., 2004; Geels, 2002; Geels, 2011; Geels, 2012; Geels and Schot, 2007; Smith et al., 2010), and technological innovation systems (Bergek et al., 2008; Jacobsson and Johnson, 2000; Hekkert et al., 2007).

Meadowcroft (2011) indicated that sustainability transitions theory bids original ways to analyse social transformation processes, their drivers, dynamics and mechanisms. In addition, the theory aims to identify good practices for the promotion of sustainable development of states, societies and sectors.

As sustainability challenges grew more persistent, immediate and grave, the theory gained further momentum. In 2012, Jørgensen defined socio-technical transitions as "a way to describe and eventually also intervene and create change" in "human organization of socio-material systems" to mitigate the "challenges to society from climate change and resource depletion". "Sustainability challenges from modern industry and consumption", he added, "as well as from population increase... the use of fossil fuels and land for the production of energy, food and other products so intimately linked to the formation of contemporary modern life... has created a need for rethinking and restructuring production and consumption within almost all sectors of society" (2012:996). With an aspiration to describe, interfere and produce change in any sector, anywhere, the sustainability transitions project deemed universally relevant.

It is necessary to note that there is a massive amount of literature, and an equally wide range of theories, general and regionally contextual theories, ideas, concepts and frameworks, on the nature, the motifs, the motivations and the mechanisms of sustainable development, economic growth and social and technological progress, some precede transitions theory by a century.

If transitions scholarship was ever to ascribe itself as a development theory (indeed, this research frames it as such)⁶, it will find a saturated ocean of explanations, and no less saturated area of contest and criticism. The circumstantial meanings of the notion of development (Adams, 2001; Booth, 1994; Nathan and Bawa, 2014), its degree of social relevance (Copestake, 2015; Edwards, 1993; Mohan and Wilson, 2005), its policy pertinence and legitimacy (Arsel and Dasgupta, 2015; Slater, 1993), and how development should be observed, categorized, analyzed and quantified (Currie-Adler, 2016; Hall, 2003; Rudolph, 2005; Shuurman, 2009) have been questioned, and scholars suggested that, in fact (and similarly to transitions theory), critical contribution to the body of literature have been made across various disciplines "through analyzing the complex relations between social, political and economic institutions, within and between societies" (Adrian, 2005:573). Several

⁶ Development studies is about "the development of national economies and societies" (Schuurman, 1993:52), about the transformation of modes of production (ibid:35-38), about "illuminating policy alternatives through systemic work on the diversity of national experiences" (ibid:53). Sustainability transitions theory is about "understanding societal change processes... understanding the stabilization and overthrow of dominant socio-technical practices and... the systems transformations required to promote development", (Meadowcroft, 2011:70).

ideas within the development studies corpus garnered more attention than others, and this study visits those concepts.

Modernization theory, a traditional and controversial development paradigm, severely criticized by dint of its colonial and Eurocentric flavors (Chew and Lauderdale, 2010), views development as a rationalization and democratization project⁷, a westernization undertaking (Ekbladh, 2010; Skocpol, 1977), embracing individualism (Tipps, 1973), bolstering technological transformation of the local modes of production, pursuing economic liberalization of the markets⁸, industrialization and geographic urbanization.

This type of development thinking attempted to follow the success of the Marshall Plan by putting the same approach into operation in the non-industrialized world (Adams, 2001; Goulet, 1992). Proponents of the paradigm suggested, among other assumptions, that economic growth is more significant for development than social progress, thereby rendering local economic traditions and activities ineffective, and obstructive (Apter, 1965; Lerner, 1958; Rostow, 1960⁹).

The 1944 influential treatise *The Theory of Economic Progress* is an early emblem of-, and blueprint for- the Modernization paradigm, and worth noticing. "The technological revolution is itself irresistible, the arbitrary authority and irrational values of pre-scientific, pre-industrial cultures are doomed. Three alternatives confront the partisans of tribal values and beliefs. Resistance, if sufficiently effective, though it cannot save the tribal values, can bring on total revolution. Or ineffective resistance may lead to sequestration like that of the American Indians. The only remaining alternative is that of intelligent, voluntary acceptance of the industrial way of life and the values that go with it" (Ayers, 1944:xxiv). For the economist, as Sylvester later noticed, "decolonization was an unproblematic economic matter of

⁷ In modernization literature, economic growth and development is both a cause and an effect of the institution of democracy (see Martin-Lipset, 1963; Przeworski and Limongi, 1997).

⁸ It was a forerunner of neoclassical theory (see Todaro and Smith, 2006).

⁹ Rostow's five stages of economic growth model (1960) argued that all developed countries transit through similar stages of economic development: from a (a) traditional indigenous society relying on subsistence farming with low labor productivity, limited capital stocks and insignificant surplus output, through (b) pre-conditions for take-off, when agriculture becomes mechanised and surplus is traded, some savings and remittance incomes improve local living standards, (c) a take-off phase where manufacturing industry gains greater grounds in the economy although the majority of the workforce is employed in farming, a (d) drive to maturity period during which economic diversification increases, technological innovations are introduced in the market and the economy depends more on organic innovation and less on factor inputs and primary commodities, to (e) the age of mass consumption, increasing consumer expenditures and an expansion of the middle class.

taking up industrial development; classical Marxists and liberal economists alike shared this premise" (1999:705).

If Modernization suffers from a capitalist predisposition, registering a set of market-liberalizing structural adjustments policies (SAPs), a competing paradigm came to the fore to encounter it: the theory of Dependency.

Dependency theory, inspired by Marxist thought and an anti-imperialism sentiment (Amin, 1977; Brewer, 1990; O'Conner, 1970), holds that the system of multilateral multinational trade of manufactured goods and unprocessed materials (i.e. raw materials, or primary commodities) is organized in such a way as to profit a group of developed industrialized states at the expense of developing state (Evans, 1979; Frank, 1969). These exploitation dynamics were originally articulated in the Prebisch–Singer hypothesis in 1949 (Bagchi, 1982). The Prebisch–Singer hypothesis, which placed the theoretical underpinnings for what would later become Dependency theory, noted that the "terms of trade" for developing states relative to those of developed states deteriorates over time. In other words, for every unit of exported goods, usually unprocessed materials, the exporter developing state could purchase a diminishing amount of manufactured goods from advanced economies (Prebisch, 1962).¹⁰ Prebisch labeled this antagonistic rapport as the center-periphery paradigm (Bracarense, 2016).

Expanding on the "terms of trade" distortion and the center-periphery model, Baran threw further light on the unfavorable development dynamics (unfavorable for the underdeveloped). He contended that the surplus accumulated by developing states is spent on manufactured good which he considered luxury consumption, or "non-essential consumption" (1957:23) instead of being invested in building capital; purchasing machinery and investing in technology to yield progress. He went further to separate between two types of spendthrift economic schemes. The first epitomizes plantation economies, or monocultures, where cash-crops revenues flow to landowners who employ them to lead self-indulgent lifestyle. The second is prevalent in liberalized industrial sectors in underdeveloped countries, where foreign investors and firm owners accumulate the surplus of production in the form of profits.

¹⁰ For a longer discussion see Obstfeld and Rogoff, 1996; Reinsdorf, 2009.

Together, Prebisch and Baran helped to inspire World-Systems Theory which explains economic disparities between three categories of states: core, semi-periphery and periphery.¹¹ Whereas core countries regulate and enjoy the fruits of the system of international trade, semi-periphery and periphery countries depend on the extractive sector and exportation of unprocessed commodities, and on low-skilled labor-intensive industrial production. In this binding coercive system, trade institutions, mechanisms and agreements, which reallocates surplus value from the periphery and semi-periphery to the core, also underpin and reinforce the dominance of core countries over the rest. A repercussion of these circumstances is that technological innovation remains a property of core countries' economies and periphery states merely import knowledge, expertise and apparatuses for specific requirements (Smith, 1993; Wallerstein, 1979; 1984; 1991; 1995).

Reflecting on dependency theory, Cardoso and Faletto (1979) contended that unbalanced economic structures result in limitations on self-sustained growth in peripheral countries, which commanded an interventionist role for the government (see also: Cardoso, 1979).

Theoretical discrepancies notwithstanding, for the underdeveloped, the Prebisch–Singer proposition, Baran's surplus analysis and Wallerstein's world-systems theory (and the unraveling of the asymmetric trade related power structure) warranted an economic strategy of protectionism in order to make them more self-sufficient and self-reliant, or in-dependent, hence: dependency theory (as opposed to practicing the principle of comparative advantage¹²) (Cypher and Cypher, 2008; Prebisch, 1962).

An often-advocated way to draw down dependency in the importation of manufactured goods (and prevent natural resources plunder), is to enact import substitution industrialization (ISI) policies, rather than export-oriented industrialization (EOI).¹³ A more elaborated and holistic manifestation of the protectionism principle

¹¹ Although world-systems theory is at odds with Prebisch's premises. It is a wrongful conclusion to assume that dependency theory is a unified thesis.

¹² Prebisch, of the Prebisch–Singer hypothesis, distinguished between theoretical economics and the practical economic behavior of trade, arguing that trade agreements are really mechanisms of mistreatment and abuse.

¹³ Export-oriented industrialization (EOI) is also known as export led industrialization (ELI), export-led growth (ELG), and export substitution industrialization (ESI). The principle suggests that an underdeveloped country should trade the goods and resources for which it has a comparative advantage. According to the premise, countries should refrain from imposing trade tariffs in pursuance of access to other markets, and eventually becoming net exporters. An outward-looking strategy is conducive for economic growth, so the argument

and the self-sufficiency doctrine, ISI policies aim to reduce foreign dependencies by local industrial development. Practicing it, state institutions will increase taxation to subsidize critical industries, such as agriculture, water and energy. Nationalization of certain sectors will not be categorically banned. Taxation of imports will be encouraged to shield local and infant industries (Street and Dilmus, 1982).¹⁴ This was the most notable strategy that dependency theorists prescribed in the 1960s and 1970s.

During the late 1960s and early 1970s, dependency theory held the initiative and "eventually even the international 'development community' felt obliged to accommodate some of its perspectives: for instance, the International Labor Office's 1972 call for 'redistribution with growth'" (Leys, 1996).

Yet, both development paradigms have been deemed value-laden (Adams, 2001; Booth, 1994; Crush 1995), the first (Modernization) driven by free-market proponents, the second (Dependency) by Marxists.¹⁵ Furthermore, Modernization theory was castigated for its Eurocentric interpretation of modernity, for lack of scientific rigor and for its imprecise definitions (Chew and Lauderdale, 2010; Tipps, 1973). The paradigm has been criticized for empirical deficiencies as well (Banuri, 1990; Remmer, 1997). Dependency theory was equally chastised for ambiguity in logic and definitions (Cueva et al., 1976; Friedmann and Wayne, 1977). Likewise, world-system approaches are considered as internally inconsistent (Schuurman, 1993). Sylvester (1999:706) maintained that dependency theory drove intellectual development practice and the theoretical debate "into an impasse", it was pessimistic and grim and offered either a revolution or a strategy "to carve a niche through international trade" (ibid). Dependency theory and world systems both have been proven theoretically unsophisticated and empirically deficient (Booth, 1994). Modernization thinking was considered disappointing while dependency thinking was regarded radical. In a similar vein, Arnfred (1985:1) found development studies as a

goes. A series of comparative studies sought to establish that EOI is overwhelmingly preferable over ISI (for example see Little, Scitovsky, and Scott 1970; Balassa 1971; Bhagwati 1978; Krueger 1978, 1983; Krueger, Lary, and Akrasanee 1981). Countries should also invest in developing export opportunities for niche markets (see Goldstein and Pevehouse, 2008). It should be mentioned that, logically, it is implausible for all countries to become net exporters.

¹⁴ In 1972, Baer argued that every industrialized state enacted ISI policies to abate foreign dependence (see Baer, 1972). However, succumbing to pressures of the IMF and the World Bank to embrace structural adjustment policies and liberalize the markets, developing states casted aside the ISI doctrine in the 1970s and 1980s (Konadu-Agyemang, 2000).

¹⁵ Goulet (1971) insisted that defining development is a semantic, political and moral minefield. Hoyt and Howard (1978:18) described development as a "slippery value word".

whole absent of "a greater epistemological reflection and awareness of history and relations of power".

One more critical observation on development studies – pertinent to the total panoply of development theories – has been put forward by Sylvester in 1999. To the degree that the development field sought to describe socioeconomic dynamics and to contribute to social progress in the "third world", or the "developing world", it has utterly and illegitimately ignored postcolonialism theory (Sylvester, 1999). She added, "development studies and postcolonial studies, two bodies of literature on the Third World that ignore each other's missions and writings... development studies, as a professional field, was born in the 1950s around three themes of late modernity: decolonization, rationality and development; postcolonial studies, again as a field, came later in reaction to the agenda-setting power of Western Enlightenment traditions and the capacity to make abject – i.e. to cast away, place outside – the histories and priorities of those on the receiving end of decolonization, rationality and development" (1999:703-704).

Whatever their bent, and their theoretical nuances notwithstanding, conventional development paradigms have failed to deviate from their fundamental premise that for the underdeveloped, western rationality must follow colonialism. Everything that is native, traditional, indigenous, is inexorably pre-modern (Appiah, 1991). In other words, development studies, so the criticism goes, have been confined to their geographies of conception in the west. In a like manner, Appiah (1991:343) stated that the project of modernity is of "the rationalization of the world", and petitioned scholars to re-conceptualize the notions of modernity, Enlightenment and development. He added that "modernism saw the economization of the world as the triumph of reason; postmodernism rejects that claim" (1991:346).

Sylvester has taken up this issue. She argued (1999) that these theoretical faults order a move to post-development thinking, and inevitably to recognize, consider and assume postcolonialism principles into a revived development scholarship. Development aficionados, she wrote, "can fall into the trap of not questioning an ultimate goal of modernization informing their human development approaches, which undercuts the claim to be offering a new paradigm" (1999:709).

The question that arises then, is what insights can postcolonial theory lend to development studies, so that the latter could cultivate theoretical acumen and better discernment?

An immediate contribution lies in the treatment of the problem of representation. It is a foundational mission, and an ethical determination, of postcolonialism theory, and of any alternative development project, to engage the colonized; the dominated, the oppressed, the discriminated-against minority, the subaltern – the communities of different knowledge and practice (Spivak, 1988; Spivak and Harasym, 2014), and in so doing, to respond, to confront, to contest colonial power structures, colonial social hierarchies, colonial discourse (Gilbert and Tompkins, 1996), and to no lesser extent, to question, to oppose, any form, cultural and economic, of neocolonial dominion of de-colonized states and societies (Chakrabarty, 2000; Sharp, 2008). The social sciences (development studies included) are informed by distinctively European concepts, such as sovereignty or secularization or enlightenment and rationality, and when these concepts are framed as "universal" the underdeveloped are viewed as retarded (Chakrabarty, 2000).¹⁶

Dealing with the psycho-pathologies of colonization and the associated social consequences of de-colonization, Fanon too (1965) disputed the universalism of Western philosophy and European ideas of progress and development to demonstrate how, through language and culture, universalism aided to structure a predatory hierarchical relationship between colonizer and colonized; post-colonizer and so-called liberated (the construction of development-knowledge as a mechanism of subjugation) (Gordon, 2015).¹⁷

Escobar maintained that post-development, or alternative development theories, requires "moving away from conventional Western modes of knowing in general in order to make room for other types of knowledge and experience" (Escobar, 1995:216). In this respect, post-development is intended to bridge a gap between perspectives on the colonized, or former colonized, and their needs, as expressed by traditional development paradigms, and the contemporary self-conceptions of the colonized (Sylvester, 1999). This will bring about a progressive and alternative discourse (Pieterse, 1998).

In this new discourse, "Western rationality as the *modus operandi* of all contemporary life" must be rebuffed, together with "the related reluctance to accept

¹⁶ In *Postcolonial Theory and the Specter of Capital*, Chibber rejects this observation, he claimed that several universal categories, mainly capital and classes, are instrumental in articulating and representing the motivations and constraints of institutions and political actors in developing states, see Chibber, 2013.

¹⁷ See also Memmi, 1965.

any grand narratives of history as truth... post-development (re-conceptualization effort) is placed in liaising with and learning from grassroots social movements... (from) local communities... (it) is the effort to form mutual knowledge and practice that operate around and in spite of development practices established by a Western industry" (Sylvester, 1999:710).

Proper representation in the construction of development knowledge, narratives and practices notwithstanding, a second critical insight that development studies might well consider to borrow from postcolonial theory is the need to reconsider and revise development goals. In the words of Pieterse (1998:343), "alternative development (is) concerned with alternative practices of development – participatory and people-centered – and with redefining the goals of development".

Sen's seminal works *Commodities and Capabilities* (1985) and *Development as Freedom* (1999), which introduced the Capabilities Approach to Development, best chart this re-orientation of development efforts and targets (see Sen 1980; 1983; 1984; 1987; 1992; Nussbaum and Sen, 1993). The Capabilities Approach to Development concerns itself with the general notion of well-being and perceives the possession of commodities and earning of income as secondary development goals. This is not to say that economic growth and the provision of goods are unnecessary for human development (on the contrary; Sen stresses their importance, see Sen, 1983), yet he maintained that "wealth is evidently not the good we are seeking; for it is merely useful and for the sake of something else" (Sen, 1990:44).

The Capabilities Approach to Development concentrates on human achievement. If different societies and individuals differ in "their capacity to convert income and commodities into valuable achievements" and wellbeing (Clark, 2005:3), then Sen argues that we are advised to consider how people "function with the goods and services at their disposal" (ibid).

Sen also took issue with the notion of utility as desire fulfillment, arguing that it is merely "one aspect of human existence" (Sen, 1984:512). The standard economic approach neglects critical issues which contribute to wellbeing. Sen contended that "neither opulence; income, commodity command, nor utility; happiness, desire, fulfilment, constitute or adequately represent human well-being and deprivation. Instead what is required is a more direct approach that focuses on human function(ing)s and the capability to achieve valuable function(ing)s" (Clark, 2005:4).

Sen's capabilities framework is postcolonial in the sense that it is flexible and can, provided the methodological approach, facilitate a participatory assessment of capabilities. According to Alkire (2002), the theory allows scholars to apply it to a variant of circumstance. In like manner, Clark (2005:5) mentioned that "the selection and weighting of capabilities depend on personal value judgements". Sen is not inclined to subscribe an objectively correct and universal index of capabilities (Sen, 1984). Importantly, Sen did not register a comprehensive theory of development (Sen, 1983; 1988), rather he reevaluates the goals of development. In his works, individuals cease to be looked upon as instruments of economic growth, instead, their wellbeing – objective and subjective – is the sought-after eventuality of development.

The capabilities framework has attracted most criticism regarding its operationalization limitations (Sugden, 1993). Alkire (2002) held that the statistical requirements of the capabilities framework are exceptionally high. Clark (2005:6) elaborated that "evaluating social states typically depends on acquiring data on multiple functionings. In some cases, however, the relevant social indicators simply aren't available".

While the precise categorization of capabilities remains contested, with different scholars taking distinct approaches to apply the general framework (Alkire and Black, 1997; Alkire 2002; Clark, 2002; 2003; Desai, 1995; Nussbaum, 1995; 2000; 2003; Robeyns, 2003), the capabilities approach achieves a better definition of the goal of development: social progress and human wellbeing. "Capabilities approach suggests that the overriding objective of development is the expansion of human capabilities rather than economic growth" (Clark, 2005:10).¹⁸ This was also indicated by the UN in 1996: "human development is the end – economic growth is a mean" (UNDP, 1996:1).

¹⁸ One significant line of criticism is concerned with omitting what can be referred to as 'the factors of production of wellbeing', or the means and methods of bringing about and sustaining wellbeing, economic facilities, social opportunities and freedom (Qizilbash, 1996). Specifically, researchers have mentioned that further consideration is required to explore the relations between human capital and human capabilities and development (Bebbington, 1999; Streeten, 1994; 2000). One idea, which according to Clark (2005) has not been fully elaborated, concerns the development of a matrix of development means and development ends (i.e. wellbeing, etc.) which will provide a way of thinking through the mutual associations and interdependences between capabilities, their mechanisms and the related policy implications (see May, 2000).

By reevaluating and then rectifying "development ends", the capabilities approach informed and reoriented development studies. Put differently, Sen called into question the traditional conservative purpose of development, that is economic growth, found it to be grossly inadequate, and proffered an alternative intention for "development ends": enduring human and social wellbeing.

The mechanisms to secure this aim (i.e. the "development means"), however, remained debated. Modernization theory and dependency theory both proposed opposite interventions, contradictory efforts and conflicting policy programs (e.g. ISI versus EOI). Irrespective of ideological, theoretical and empiric properties, according to postcolonial and post-development thinking, both paradigms are considered Eurocentric; based on Western epistemology, and for this reason – fraught with biases and misconceptions.

These caveats provide initial justification to consider Sustainability Transitions, to name one option, as a development concept, a development policy device, and as the main approach of this work.¹⁹

Several other things make sustainability transitions theory particularly appealing. The theory breaks from conventional ideas of modernization and dependency to stand out in a couple of main categories, which provided the necessary impetus for this research to attend to this particular, nuanced, literature.

First, sustainability as a normative goal yield more reason, and ethical sensibility, than industrialization for imports substitution or for exportation purposes to guarantee economic growth. Second, sustainability transitions theory includes manifold

¹⁹ As aforementioned, sustainability transitions theory is perceived in this study as essentially a development theory: both share similar curiosities, similar sources of inspiration, similar study-objects, similar missions. In some instances, both can share similar terminologies and levels of analysis: macro, meso and micro developments in Schuurman, 1993:52-55 and in Geels, 2011; research into technological resources and the scope of indigenous alternatives to state-sponsored development in Chambers, 1983 and in Scott, 1985, and radical regime-challenging technological niches in transitions theory. More importantly, a few of Geels's works can be viewed as development studies. His analysis of historical changes in the modes of transportation in the 1880s as they corresponded to migration, urbanization and industrialization; investigating the landscape dynamics between middle-class American families and their immigrant peers living in "crowded and filthy slums" (2005b:456); illustrating how social transformations shaped housing and transportation preferences; the rise of "suburbia"; the treatment of surplus and classes, the attention to health and hygiene, and the formation of social movements – these topics can be observed today in the "global south". Geels attended to 19th century states and cities which today we would frame as developing. 1880s American cities like 1980s Indian ones. He discussed circumstances and challenges which today we would perceive as properties of the "third world". Some transitions studies are development studies.

solutions to problems of unsustainable socioeconomic, environmental and technological system behaviors, rather than "so-called 'silver bullets' as was the case in historical (developments)" (Lachman, 2013:270), and as suggested by some traditional development paradigms.

Similarly, inspired by economics but also science and technology studies and institutional theory, transitions theory recognizes the embedded complexities and interdependencies of socio-technical systems. Therefore, the theory better reflects real development circumstances and dismisses simplified notions and concepts.

In addition, prominent sustainability transitions approaches, namely the multi-level perspective with which this analysis component of the DPA thesis is involved, are constructed as middle range approaches. Merton (1968:39), who defined and advanced the concept of middle range theory, and middle range constructs, maintained that the theory "lie between the minor but necessary working hypotheses that evolve in abundance during day-to-day research and the all-inclusive systematic efforts to develop a unified theory that will explain all the observed uniformities of social behavior, social organization and social change".

In like manner, Geels (2007) reiterated that middle range theory, and middle range approaches take stock of concrete phenomena and not abstract entities; that middle range approaches underline interactions between theory and empirical study, which makes them more operational. By linking specific concepts with empirical research, middle range approaches can suggest some "generalizable lessons" (Geels, 2011:26).

Thus, middle range theory, and the multi-level perspective specifically, open a space in which the non-linear dynamics and multi-stakeholder relations driving change can be rigorously evaluated. Socio-cultural regimes, policy regimes, scientific regimes, technological regimes, emerging networks of actors, landscape developments, ideologies, values, macro-economic patterns, are all represented, all interrelated, co-evolving, affecting each-other's momentum. Simple development causalities are rejected in transitions theory and the multi-level perspective. Instead of single unilateral drivers, "there are processes in multiple dimensions and at different levels which link up with, and reinforce, each other" (Geels, 2011:29).

As a development theory, sustainability transition approaches can advantageously mitigate some of the tensions and criticisms previously voiced in development

studies, e.g. that dependency theory's core-periphery concept puts too much emphasis on the global economy and economic affairs, discounting cultural determinants, or that its conceptual boundaries are blurred, or that it lacks empirical evidence to support its suppositions (see Robinson, 2011; Wallerstein, 2004). Dependency theory is by no means an exception and other development approaches were forced into grand simplifications as well, "pitched at a level of generality that made them irrelevant to the most important practical issues facing developing countries" (see Schuurman, 1993:50-51).²⁰

With regard to theoretical applicability, Meadowcroft (2011) expected one more significant contribution to arise from transition thinking: a convenient and focused policy framework, suitable to analyze social change processes based on an "impressive set of historical studies of system transitions" (2001:71); a framework that takes preliminary steps toward accomplishment of sustainability.

This is not at all to argue that development studies cannot offer advice to sustainability transitions. As transitions theorists aspire to march their perspectives and models into the developing arena – which is the main exercise in this analysis component, and as they recognize that "context-specificity can have a tremendous influence on transition efforts" (Lachman, 2013:274), post-development thinking can inform sustainability transitions theory in one critical way: representation.²¹

While this study mobilizes the sustainability transitions theory to new frontiers, to extend the geographical and historical terrain of the theory; to explore and ultimately advise on long-term sectoral transitions in postcolonial developing island states, a degree of contextual sensitivity (historical, cultural) is mandatory. Here, postcolonial theory and post-development thinking are particularly useful.

In other words, the "explaining framework" of sectoral and societal transitions is as relevant as "that which needs to be explained" (Schuurman, 1993:29). Transition

²⁰ Transitions theory maintains a self-proclaimed degree of "openness and dynamism" and an interest and motivation to "venture to uncharted territory by applying transition thinking in different disciplines and using ideas and concepts from these disciplines to advance transition thinking" (Lachman, 2013:275).

²¹ Lachman noted that "effort has been made in the last couple of years to increase the amount of research on transitions in developing countries. Though still in its infancy, this is a testimony of the understanding that results from transition research cannot be simply transplanted in other societies, due to their different characteristics" (2013:274).

approaches, which have been concocted in developed societies, need to engage communities of markedly different knowledge and practice.

Accordingly, this study evaluates the merits, generalizability and transferability of transitions knowledge (concepts, frameworks, models) *with* local societies. In the words of Spivak, it lets the indigenous "to speak for themselves" (Spivak, 1988).²² In this respect, the study can be acknowledged as a postcolonial project, which should contribute to transitions theory.

There is one more potential weakness in sustainability transitions which development studies picked on in the 1990s. Six years in the wake of the Brundtland Commission and the introduction of the notion of sustainable development, Schuurman, uneasy, deliberated on the term and its meanings for development theory and practice, as the latter arrived at a deadlock. "The definition itself and the way it is used in practice offer a rather heterogenous picture", he noted (1993:22).

All-inclusive and rather nebulous, "the term sustainable development encompasses development strategies which range from light-green to dark-green... from romantic and nostalgic conservatism to utopian socialism, from absolute-zero growth in the economy to maintaining the present world economic growth rate. As a result, the 'green' notion of sustainable development could be incorporated without effort into both the 'blue' development model (neoliberal) and the red development model (socialist, and these days social democratic). In a number of cases one can therefore hardly speak of an alternative development model" (ibid).

A crucial impediment, Adams (1993) maintained that the concept of sustainable development does not enjoy an excepted theoretical foundation. Certainly, sustainable development became a prominent phrase in development discourse (Adams, 2008). In his influential review, Lélé (1991:607) claimed that sustainable development has become "the watchword for international aid agencies, the jargon of development planners, the theme of conferences and learned papers, and the slogan of developmental and environmental activists. It appears to have gained the broad-based support that earlier development concepts lacked, and is poised to become the development paradigm of the 1990s".

²² See methods section.

And yet, "murmurs of disenchantment" (ibid) lingered. In 1984, before the Brundtland Commission interpreted the concept, Tolba argued that sustainable development had become "an article of faith, a shibboleth; often used, but little explained". Lélé (1991:607-608) reiterated that "the absence of a clear theoretical and analytical framework... makes it difficult to determine whether new (development) policies will indeed foster an environmentally sound and socially meaningful form of development... the absence of semantic and conceptual clarity is hampering a fruitful debate over what this form should actually be".

Despite a potential, or perhaps because of the potential, of sustainable development to "break down barriers between academic knowledge and action", the idea has invited a "theoretical maze of remarkable complexity" (Adams, 2001:4).

It has set a normative orientation but not definitive, and it remains open for interpretation still.²³ Table 1 below includes some common definitions of sustainable development and sustainability. It is adapted from Gladwin et al. (1995:876-877) with additional and recent definitions (United Nations, European Commission, International Monetary Fund, Organization for Economic Co-operation and Development, World Bank, 1997; 2005; 2011; WCED, 1987).²⁴

²³ It had its benefits. "Development bureaucrats and politicians", Adams noted (2001:5) "have undoubtedly welcome the opportunity to fasten on to a phrase that suggests radical reform without actually either specifying what needs to change or requiring specific action". He continues, cynically, "Brundtland's sustainable development was apparently acceptable to the British government precisely because it did not demand radical change of policy direction, just some linking up of the existing policies and procedures".

²⁴ For a longer recent discussion see Enders and Remig, 2014.

Table 1. Definitions of sustainable development.

<p>Sustainable development refers to development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987).</p>
<p>To maximize simultaneously the biological system goals (genetic diversity, resilience, biological productivity), economic system goals (satisfaction of basic needs, enhancement of equity, increasing useful goods and services), and social system goals (cultural diversity, institutional sustainability, social justice, participation) (Barbier, 1987:103).</p>
<p>Improving the quality of human life while living within the carrying capacity of supporting ecosystems (The World Conservation Union, United Nations Environment Programme & Worldwide Fund for Nature, 1991:10).</p>
<p>Sustainability is a relationship between dynamic human economic systems and larger dynamic, but normally slower-changing ecological systems, in which (a) human life can continue indefinitely, (b) human individuals can flourish, and (c) human cultures can develop; but in which effects of human activities remain within bounds, so as not to destroy the diversity, complexity, and function of the ecological life support system (Costanza, Daly, and Bartholomew, 1991:8).</p>
<p>A sustainable society is one that can persist over generations, one that is far-seeing enough, flexible enough, and wise enough not to undermine either its physical or its social systems of support (Meadows, Meadows, and Randers, 1992:209).</p>
<p>Sustainability is an economic state where the demands placed upon the environment by people and commerce can be met without reducing the capacity of the environment to provide for future generations. It can also be expressed as... leave the world better than you found it, take no more than you need, try not to harm life or the environment, and make amends if you do (Hawken, 1993:139).</p>
<p>Our vision is of a life-sustaining earth. We are committed to the achievement of a dignified, peaceful, and equitable existence. We believe a sustainable United States will have an economy that equitably provides opportunities for satisfying livelihoods and a safe, healthy, high quality of life for current and future generations. Our nation will protect its environment, its natural resource base, and the functions and viability of natural systems on which all life depends (U.S. President's Council on Sustainable Development, 1994:1).</p>

Sustainability is a participatory process that creates and pursues a vision of community that respects and makes prudent use of all its resources-natural, human, human-created, social and scientific. Sustainability seeks to ensure that present generations attain a high degree of economic security and can realize democracy and popular participation in control of their communities, while maintaining the integrity of the ecological systems upon which all life and all production depends (Viederman, 1994:5).

Sustainability refers to: (a) use of the biosphere by present generations while maintaining its potential yield (benefit) for future generations; and/or (b) non—declining trends of economic growth and development that might be impaired by natural resource depletion and environmental degradation (United Nations, 1997).

Sustainable development is development that ensures non-declining per capita national wealth by replacing or conserving the sources of that wealth; that is, stocks of produced, human, social and natural capital (United Nations, European Commission, International Monetary Fund, Organization for Economic Co-operation and Development, World Bank, 2005).

While precise definitions may vary, development is, at heart, a process of building wealth, the produced, natural, human, and institutional capital which is the source of income and wellbeing (Burke, 2011).

Adams (2001) contended, bluntly, that the most popular definition of sustainable development is better as a slogan than as a basis for theory. "It has no coherent theoretical core" (2001:5).

These criticisms have anything but subsided. In 2008, United Nations Economic Commission for Europe restated Pearce and Warford's (1993) asserting that sustainability in itself has no intrinsic value. In 2014, Jahn (2014:33) contended that sustainable development is "not a substantive concept" (2014:33).²⁵

This weakness has not gone unnoticed in sustainability transitions literature. Quoting Lafferty from 1996, Meadowcroft (2011) recognized that "sustainable development is

²⁵ The UNECE contends that "sustainable development can mean all things to all people... (it has) a cloud of ambiguity hanging over (it)" (UNECE, 2015). It is important to note that "sustainable" is an adjective: a part of speech used to describe other words, for instance "transition", "regime", "technology", or indeed – "development". This is a crucial point. As noted by UNECE, the OECD and Eurostat (2008:18), "sustainability in itself has no intrinsic value... the challenge of the concept is not so much in the word 'sustainable' but in 'development'".

a normative project" and that changes in particular societal sub-systems (transport, construction, energy, and so on) relate to the larger goal of providing long term human well-being in the face of real bio-physical limits".²⁶ Likewise, Geels (2010) saw it a concept open for interpretation and institutional interventions. Markard (2012:957), quoting Garud et al. (2012) reiterated: "we have to note that what is considered sustainable can be subject to interpretation and might change". Jørgensen (2012:997), critically, paraphrased their observation: "the presented approach to transition studies does not imply, per se, a normative direction of the resulting changes".

As a body of literature, sustainability transitions has engaged with, been inspired by, or treated what Markard et al. refer to as "green issues" (2012:956) for more than two decades. These include ecological modernization (Mol and Sonnenfeld, 2000), eco-innovation (Kemp, 2010; Rennings, 2000), industrial ecology (Ehrenfeld, 2000), sustainability sciences (Kates et al., 2001) and green management (Rugman and Verbeke, 1998; Porter and Kramer, 2006).

Be that as it may, the notion of sustainable development remained undefined. In effect, transitions theory chooses tautology over precision and operationalization. For instance, Markard et al. defined sustainability transitions as (italics not in source): "*Sustainability* transitions are long-term, multi-dimensional, and fundamental transformation processes through which established socio-technical systems shift to more *sustainable* modes of production and consumption" (2012:956).

To what extent terminological ambiguity has been obstructive to development efforts in developing states? To what degree it remains an impediment for understanding, intervening for and governing transitions in developing countries?

These are vital issues. In the course of introducing transitions theory in several developing theaters the notion of sustainability and sustainable development will be brought for examination with interviewees and local communities of knowledge and practice.

With this backdrop laid out, the study can now route back to sustainability transitions theory and its central approach.

²⁶ Thereby suggesting a possible link with Sen's idea of development (see Part 1 above).

2. *The multi-level perspective*

While notable methodological advancements were registered in the field of sustainability transitions, and a considerable range of theoretical approaches to analyze transitions was developed, the most significant contribution to scholarship – the one which garnered a wealth of attention and is often mentioned as the most established approach in transitions research (Smith et al., 2010) – is that of the three-level model, or the multi-level perspective.²⁷

The multi-level perspective is a transitions model. Like any model, it is an abstraction and approximation of phenomena in the real world (Box, 1976; Burnham and Anderson, 2002; Cox, 1995; Hand, 2014), and therefore, it is a simplified representation of the phenomena it engages with: stability and change of socio-technical systems.

Accordingly, like any model, the multi-level perspective does not endeavor to obtain an exact description of reality. It is not concerned with the precise dynamics, drivers, mechanisms and components of socio-technical systems; their given configurations, or re-configurations (or de-configurations) to achieve sustainability.

Rather, like any model, it sets to be "illuminating and useful" (Box, 1979:236) in conceptualizing and understanding general non-linear dynamics of changes in society, path-dependent behaviors of dominant societal arrangements, patterns of systems' stability and resistance to change, dialectic institutional and technological transformations of sectors, and the emergence of new solutions to sustainability-related challenges.

A theory with application aspirations, it seeks to combine its analytical observations with a "process-oriented understanding of situated actor's possibilities of engaging in transitional processes" (Jørgensen, 2012:1007).²⁸

The multi-level perspective is a hierarchical model constructed of three inter-linked levels, metaphorically labeled, from the top-down: landscapes, regimes and niches.

²⁷ There are at least three other prominent transition approaches attempting to explain the particularities and idiosyncrasies of transition processes (Geels, 2011; Markard et al., 2012; Olsthoorn and Wieczorek, 2006). These include strategic niches management, transition management and technological innovation systems (see Part 1 for further reading).

²⁸ According to Markard et al. (2012:956-957), the multi-level perspective assumes "systemic views of far-reaching transformation processes of socio-technical systems (and) ... is considered to be central for the theoretical framing of sustainability transitions."

Inspired by structuration theory, evolutionary economics and institutional theory, these three levels bear a similarity to the "levels of analysis" traditionally employed in the social sciences (Blalock, 1979). The landscape (or, the socio-technical landscape) is the macro-level of analysis. The regime (or, patchwork of socio-technical regimes) is the meso-level of analysis. Socio-technical niches comprise the micro-level.

The three levels are distinct and complementary at the same time: analysis of one level is insufficient to arrive at a general conclusion, or a general theory (Jepperson and Meyer, 2011). Each level has its own heterogeneous units of analysis, or "units of observation": the socio-technical components which evolve, or devolve over time, at their level and across levels. As aforementioned (see Part 1), the multi-level perspective is a middle-range theory, acknowledged as the leading method to sociological theorization (Bailey, 1991).²⁹

Therefore, the socio-technical regime, the meso-level, is at the centerpiece of the multi-level perspective to sustainability transitions. It *is* the middle-range. The studied phenomenon of 'transition' in 'transitions studies' and in 'sustainability transitions literature', refers to the transitions *of* the regime, the transitions *at* and *of* the meso-level (sectors, industries, socio-technical systems or a well-defined sub-systems).

Processes that middle-range units of analysis undergo, as they journey over time from one design to another design, or from one configuration to another more sustainable (or less sustainable) configuration, expose mutual connections and influences between landscapes and niches.

In other words, meso-level processes are "at the core of understanding the dynamics of change in society... the transition model... demonstrates the processes of transition from one dominant socio-technical regime... to a new dominant socio-technical regime" (Jørgensen, 2012:996). In Geels's terms (2011:26-27): "the regime level is of primary interest, because transitions are defined as shifts from one regime to another regime. The niche and landscape levels can be viewed as 'derived concepts', because they are defined in relation to the regime, namely as practices or technologies that deviate substantially from the existing regime, and as external environment that influences interactions between niche(s) and regime".

²⁹ For a longer discussion see Mjøset, 1999.

The question then, is what elements and dynamics drive transitions of socio-technical regimes? A succinct summary of transitions processes is given in Geels (2011:29): "Although each transition is unique, the general dynamic pattern is characterized by transitions resulting from the interaction between processes at different levels: (a) niche-innovations build up internal momentum, (b) changes at the landscape level create pressure on the regime, and (c) destabilization of the regime creates windows of opportunity for niche-innovations".

To give an answer more profound, a closer inspection of the components that make up the levels of analysis, and how they interact and co-evolve, is mandatory.

Start with regimes. In the multi-level perspective, and in transitions theory as a whole, a socio-technical regime is a socio-technical system. A socio-technical system is a collection of actors, institutional and sectoral, social rules and technological practices, knowledge, and artifacts, organized in a particular manner to yield particular social services (see Part 1). The concept of regime is an analytical one, and the multi-level perspective does not propose rigid boundaries, broad or narrow, to draw around regimes (Geels, 2011). Nor does it dispense guiding principles for the identification of regimes and what constitutes a sufficient re-configuration of a regime to be considered as a transition (Genus and Coles, 2008).

Regimes are formed when institutions and technologies in a given sector of society coalesce, stabilize and gain momentum to become the dominant form of delivering specific services to society, while at the same time – resist external changes to their configuration (Hughes, 1987; Rip and Schot, 2002). This configuration, or 'the way of doing things', define the potential paths of development for the sector (Garud et al., 2010; Geels, 2004).

Three co-evolving elements comprise a socio-technical regime (any regime). The first is a network of institutions and actors. The second is the index of formal and informal rules that regulate the actions of actors who reproduce and maintain the structure of the system (the regime). The third component of a regime is the set of material artifacts and apparatus.³⁰

One of the central properties of a regime is its "duality of structure" (since the multi-level perspective is informed by structuration theory, see Giddens, 1979). The

³⁰ For further elaboration on the components see Geels, 2004.

consequence of the duality of structure is that agency or actors cannot be analyzed in separate from their socio-technical structure or system. In other words, in any given regime, actors and structure are mutually dependent and co-evolving. Actors shape the rule of the structure and at the same time follow existing rules.

When a regime gains momentum it becomes more stable and it exhibits lock-in dynamics: the replication of structures, self-reinforcing behaviors and an increasing resistance to other arrangements and configurations (Geels, 2004). Under these conditions, the regime's path of development will be steady.

But socio-technical regimes do change, and transition processes of sectors and industries are frequently initiated in the micro-level of niches or in the macro-level of landscapes, with various degrees of success.

In the multi-level perspective, niches are networks of innovation (Geels, 2002). They comprise entrepreneurs and entrepreneurial ventures along with others elements and actors of the innovation 'ecosystem': research, development and demonstration laboratories, small businesses and the investor community which "support novelties" and work on "radical innovations that deviate from existing regimes" (Geels, 2011:27). Geels adds, "niches are locations where it is possible to deviate from the rules in the existing regime" (2004:912).³¹

Niches are reckoned the most essential source of changes in socio-technical regimes (Schot et al., 1994; Kemp et al., 1998; Geels, 2002a,b; Hoogma et al., 2002). A successful niche "can challenge the dominance of a regime" (Smith et al., 2005:1496). It can pose and, at times, maintain challenges to incumbent socio-technical regimes. If effective, it can replace it (Geels, 2004; 2011). Niches, in the words of Geels, are "crucial for transitions, because they provide the seeds for systemic change" (2011:27). For this reason, scholarship underscores their importance and calls for their creation and protection (Rotmans and Kemp, 2001).³²

³¹ For an early discussion on expectations and visions for supporting niche dynamics and creating institutional change see Lente, 1993.

³² Following on the notion that niches are "protected spaces" (Geels, 2011), that they are "the locus for radical innovations" (Geels, 2004), crucial for transitions; places and networks within which ideas of regime re-configuration can emerge and gain initial momentum to eventually break through dominant socio-technical systems, and overthrow them (Jørgensen, 2012), a new theoretical concept sprouted from the main body of sustainability transitions. Kemp et al. (1998) proposed Strategic Niche Management (SNM) as a policy instrument to "help induce a broad socio-technical transition towards more sustainable development" (1998:245). A central

According to Kemp et al. (1998) and Schot and Geels (2008), bottom-up niche-driven transition will occur if niche-actors are able to direct precise research, development and demonstration activities, to garner attention and resources, to build social networks and partner with influential actors, to learn and improve their technical platforms and organizational operations, to deploy and commercialize their alternative system design and to command more resources.

Socio-technical transitions can also be initiated from the top-down at the landscape level (Geels, 2002). In broad terms, the socio-technical landscape is the wider external framework, or settings, which influence on regime and niche dynamics (Rip and Kemp, 1998). According to the multi-level perspective, the landscape constitutes "the technical and material backdrop that sustains society (and it) includes demographical trends, political ideologies, societal values, and macro-economic patterns". As opposed to niches and regimes, it changes slowly (Geels, 2011:28). Schot (1992) claimed that institutions can engage with transitions directly at landscape level (and at the regime level), and Berkhout et al. (2004) and Turnheim et al. (2015) argued that such interventions usually take the form of introducing or redefining sectoral policies and the development of new mechanisms which influence existing regimes.

It is important to notice that the analytical boundaries of landscapes are ill-defined. Jørgensen (2012) who attempted to trace the descriptions of what the landscape is composed of concluded that "a number of different collections of phenomena that demonstrate a quite heterogeneous field" structure the macro-level. The transitions literature defines it in various forms. Geels (2007) stated that it ought to be understood as the backdrop exogenous developments – a set of gradients of forces – that effect on regimes and niches, such as globalization, sustainability-related concerns, resources depletion, cultural changes and so forth.

Geels and Schot (2007) framed the macro-level in such a way to include the material properties of societies; spatial arrangements of cities, sectors, industries, factories, and infrastructures. At some point in time, they added, landscape instabilities,

policy framework in sustainability transitions literature (Hoogma et al., 2005; Schot and Geels, 2008), SNM petitioned for greater institutional and actors intervention to protect strategic niches, support infant industries with targeted policies, facilitate the development and diffusion of sustainable modes of production and consumption in the agricultural, energy, water, infrastructures and other large sectors through "protected societal experiments" (Kemp et al., 1998:245). In a more recent review, Lachman (2013:272) argued that SNM has been "proven difficult to apply in practice", and accordingly, it has been problematic to evaluate whether or not SNM "actually works".

oscillations and transformations will transpire, for instance, an emergence of new societal values, changes in macro-political and macro-economic conditions and coalitions, conflicts, and so on.

Similarly, Lachman (2013) referred to the landscape as "the whole set of impacts outside the level of niches and regimes (like global events) which influences the levels below". Niches and regimes, he added (2013:271), "have little to no influence on the landscape level, but landscape factors can have significant impact, even resulting in systemic changes".

Least defined of the three levels, the landscape also accommodates the rise of social movements, policy agendas, regulatory interventions and other determinants that may "help to set the stage for a transition" (Jørgensen, 2012:998). In a similar vein, Geels (2007:130) noted that "pressures and rule changes may cause de-alignment of the existing regime, creating windows of opportunity for broader change".

The multi-level perspective was applied for the analysis of several historical and contemporary societal, sectoral, industrial and economic transitions. Geels (2002) used it for the analysis of fundamental transformations in the shipping sector, Van Driel and Schot (2005) employed it for cargo management in seaports. Verbong and Geels (2007) attended to the Dutch electricity system, its changes in rules and institutions, and the social networks within which it is embedded that either support or oppose the introduction of renewable options. Nykvist and Whitmarsh (2008) and Van Bree et al. (2010) used the multi-level perspective to discuss structural sustainability transitions of the transportation sector in the United Kingdom and Sweden (in the former study), and the introduction of new modes of transportation (in the latter).

The multi-level perspective is useful, but it is not short of criticism. Three biases in particular warrant more attention: a focus on niche-driven bottom-up transitions, a relative neglect of the role of government and government institutions in transitions, and a Western bias in the construction of the theory and in its study objects.

3. Critique

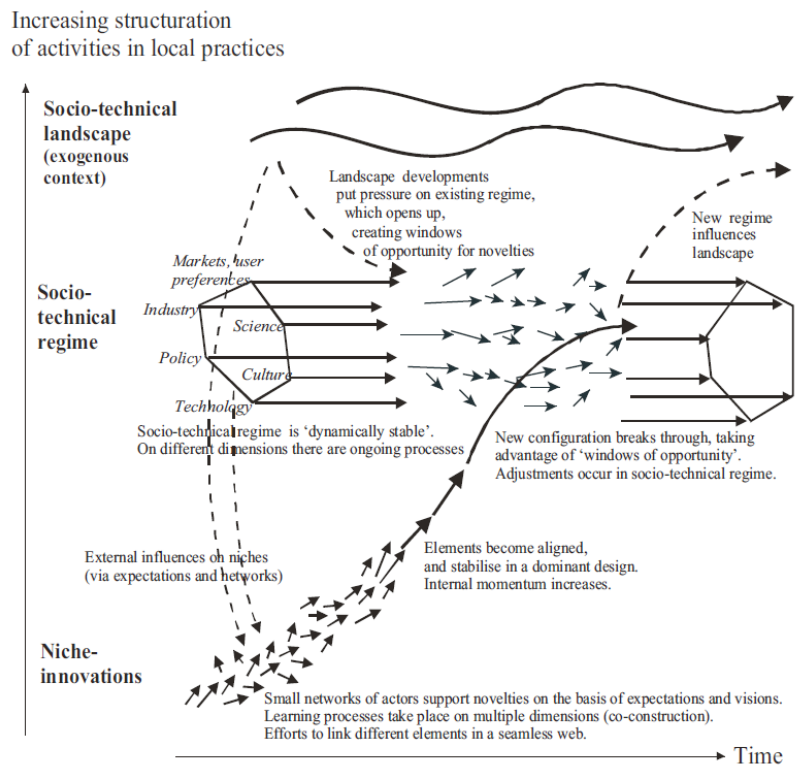
Considering the breadth and width of sustainability-related challenges that modern societies are confronted with, sustainability transitions and the multi-level perspective have high societal relevance. The theory should be administered for policy analysis and policy design. But first, some of its predispositions are to be treated (added to those highlighted in pages 16-17).

A first and significant theoretical bias of the multi-level perspective is the excessive emphasis it lays on the role of niches and innovation systems, and on bottom-up dynamics, while under-emphasizing the role of government institutions and top-down policies in transitions. Geels (2011:32) admitted a bias "towards bottom-up change models" in transitions theory and the the multi-level perspective's own focus on "bottom-up dynamics". Berkhout et al. (2004:62) critically held that the perspective "tend unduly to emphasize processes of regime change which begin within niches and work up, at the expense of those which directly address the various dimensions of the socio-technical regime or those which operate 'downwards' from general features of the socio-technical landscape".

A second bias, associated with the first, concerns the relative neglect of the role of government institutions in driving regime transitions. Regardless of the contribution of socio-technical niches to societal changes, the role of politics and the state in sustainability transitions, in the top-down introduction of technologies, in the shaping of rules and the landscape, and in the steering of states, sectors and national industries, has remained relatively underexplored (Avelino et al., 2016; Scoones et al., 2015). The need to pay more attention to institutions was previously recognized by Geels (2004:899): "there is a recognized need to better conceptualize the role of institutions... (and) it is useful to explain how institutions play a role in dynamic developments".

In responding to critics and in effort to rectify the two biases, Geels (2011), drawing on Geels and Schot (2007) and on Smith (2007), developed a typology of four transition pathways. In this pathways' classification, each pathway scenario allocates different weight to different elements, at different analytical levels, in driving socio-technical systems transitions. It is easier to juxtapose pathway scenarios with the multi-level perspective transitions schematization in mind (see diagram 1).

Diagram 1. Multi-level perspective on socio-technical transitions (adapted from Geels, 2002:1263).



In the *transformation pathway* scenario, the first in the four pathways typology, changes at the landscape wield pressures on the stability and integrity of the socio-technical regime. Niches are not mature and innovation networks are not fully-fledged. As a result of top-down pressure, dominant socio-technical regimes – sectors, industries – adjust their structures (they transform, hence: transformation pathways) and their trajectory of development.

In the second transitions scenario, referred to as *reconfiguration pathway*, pressures derived from the landscape remain the predominant force driving transitions, but niche-actors are more developed and are situated in such a way to contribute to regime transitions. In these settings, incumbent socio-technical regimes would incorporate some niche solutions to attend to local problems. These regime-niches relationships are considered more symbiotic. Geels (2011) added that initial 'add-ons' (the adoption of niche practices and platforms into a regime configuration) can prompt further adjustments.

Technological substitution pathway, the third scenario, can be observed when mature and competitive niche-actors profit from landscape pressures on socio-technical regimes. This is the "classical" sustainability transitions setup. Geels (2011:32) laid out the dynamics: "tensions in the regime form a window of opportunity for the breakthrough of niche-innovations that replace the regime. An alternative route is that niche-innovations gain high internal momentum (because of resource investments, consumer demand, cultural enthusiasm, political support, etc.), in which case they can replace the regime without the help of landscape pressures".

A fourth scenario, labeled *de-alignment and re-alignment pathway*, is a more violent one. A transition begins after major landscape pressures are exercised on the regime. The regime is then disintegrated, or de-aligns. Into the socio-technical void, from which the incumbent socio-technical system was removed, niche-actors enter and compete on dominance. Niches can co-exist for some time until one type of system design, in a process of re-alignment, achieves control of the sector.

Geels made clear (2011:32-33) that these four change models "go beyond the bottom-up bias" and claimed that niche-driven upward-moving dynamics represent merely one category of socio-technical transitions.

Nevertheless, Meadowcroft (2011:70) argued that "attention needs to be paid to the political dimensions of sustainability transitions" and called forth scholars to "develop a politically oriented literature on sustainability transitions equivalent in sophistication to that produced by our innovation-oriented".

Earlier yet, in 2005, Smith et al. (2005:1498) contended that "more attention should be given to the context in which regime transformation arises. This applies... to the features of the governance situation, since (it) exercises important conditioning effects on the transition". They added (ibid:1507) that "the full range of divergent contexts, motivations and orientations for governance interventions in socio-technical regimes tend to be treated in a relatively undifferentiated and uncritical fashion". Smith and Stirling (2007) stated one of the aims of transition studies should be to identify the political role of governance. In a similar vein, Scoones et al. (2015:3-5) maintained that transitions scholarship "has fallen short in its understanding of power"; referring to governments, institutions and rules, and added that "the conceptualization of power and politics... require further elaboration". Likewise, Avelino et al., (2016:558) made a plea for "increased attention to the politics of sustainability transitions".

This is justified. Macro-level, socio-political actors, movements and ideas, and their interactions, play significant roles in transitions (Jørgensen, 2012). Surely, institutions can engage directly at meso- and macro-levels (the regime and the landscape), an argument that was made earlier still by Schot (1992).³³ Furthermore, when the role of government in transition processes is ill-defined, interventions in socio-technical regimes to realize sustainable development goals would be imprecise or incorrect. Multiple interests and inconsistent policies with the sector would prevent its progress (Elzen et al., 2004; Shove and Walker, 2007).

A third and final bias of the multi-level perspective which warrants particular attention is of the postcolonial sort: a Western disposition of the perspective in the construction of theory and in the selection of its study objects. The multi-level perspective was concocted and promulgated by the 'Dutch school of transition studies' (Elzen et al., 2004; Geels, 2002; Grin et al., 2010; Rip and Kemp, 1998; Schot and Geels, 2008). As aforementioned, it has been deployed in various historical and contemporary cases where it was instrumental in the study of "quite a substantive number of transition cases, and to sketch possible transitions emerging by identifying niches that demonstrate potentials for new breakthroughs" (Jørgensen, 2012:996).

³³ It is important to note that in development studies (and in the adjacent field of political economy), state institutions garnered considerable attention and analytical focus as a primary driver of sectoral re-configurations and societal development (Acemoglu and Robinson, 2012; North, 1990; Rodrik, 2000). One prevailing argument is that in the developing countries context, more often than not, state-actors hold the most sway over what can be described large socio-technical regime transition processes (Evans, 2004; Kahn, 2012; Rodrik et al., 2004). A phenomenon that was labelled "the hard state". This is well articulated in Evans's (1992) statement "the state as problem and solution". Yet, in the corpus of development literature, the debate on the role of institutions in socio-economic, technological and environmental outcomes in developing countries is a heated one. Development scholars maintain different, contradictory, perspectives on what factors explain and predict improvements in social wellbeing (Gough and McGregor, 2007), economic growth (De Jong, 2011), poverty alleviation (Beramendi and Rueda, 2014), diminishing inequality (Haagh, 2015; Hickey et al., 2014) and environmental sustainability. The idea that formal state institutions and the setup of policy delivery mechanisms are accountable for sustainable wellbeing outcomes is a frequently challenged idea. Scholars display a wide gamut of alternative driving factors such as underlying power structures, regime type (Haggard and Kaufman, 2008), political settlements, authoritative leadership (Leftwich, 2011) and so forth. In this theoretical, and occasionally comparative discussion, the 1970s-1990s East-Asian developmental state model, exemplified (according to the proponents of the approach) how state-led macro-economic planning, an independent and well-trained bureaucracy, the absence of rent-seeking behaviors in the civil service, and an institutional capacity to resist regional, societal and economic pressures results in sustainable development outcomes (Atul, 2004; Boyd, 2006; Kelsall, 2012). It is unclear though, what principals can be elicited from these cases to be applied in other developing countries. It is outside the scope of this study to assess the merits and compare and contrast the propositions of these perspectives.

Yet, as a literature, and despite the perspective's universality, sustainability transitions papers have tended to focus on developed states. Geels and Raven (2006), Loorbach (2007), Negro et al. (2008), and Kern and Smits (2008) have discussed The Netherlands. Garud and Karnoe (2003), Kamp et al. (2004) and Geels and Raven (2007), covered Denmark. Jacobsson and Lauber (2006) analysed transitions in Germany, while Hillman et al. (2008) and Karakaya et al. (2018) studied Sweden. The studies of Marques et al. (2010), Moallemi et al. (2014), Vidican (2015), Acheampong et al. (2016) and Swilling et al. (2016) in this regard, are more of an outlier. In the case of the latter it can be argued that eliciting lessons from South Africa to other developing countries in Sub Saharan Africa will be a rather limited exercise.

Against this bias, Lachman (2013:274) complained that "approaches to study transitions are heavily flavored by the context in which they were conceived and can therefore be less suitable for other (alien) contexts. An important example with respect to this matter is the notable difference between so-called developed and developing countries; they differ on social, behavioral, environmental, and political grounds".

Recently, this was picked up again in the transitions literature. Something that gives this analysis component of the DPA thesis a timely relevance. In 2017, Hansen et al. delineated a research agenda for sustainability transitions in developing countries. A year later, Wieczorek proffered that studies on developing countries' transitions "require reflexivity" (2018:204) and that theoretical and methodological insights should be built on experiments, power and regime uniformity, among other socio-technical elements. She argued that "to govern transitions in developing contexts, policy makers need to consider institutional insecurity, path-dependencies, diverging views on sustainability (and the) hybrid nature of incumbent systems".

Reflecting on both transitions drivers in developing states and on the intangible notion of "sustainability", Ramos-Mejía et al. claimed (2018:217) that "the context for innovation in developing countries is a loose scenario", and that institutional, social and environmental sustainability are equally meaningful.

In a related analysis on sustainability transitions in water harvesting in Jordan's rain-fed agricultural systems, Sixt et al. (2018) maintained that institutional barriers, limited national financial capital, poor quality of scientific institutions, insufficient human capital, lack of policy frameworks to ensure projects continuity and overall

capability voids, hindered water harvesting innovation in Jordanian agricultural sector. These are all initial steps and more work is needed (Hansen et al., 2017).

As the review of biases suggests, these underdiscussed issues – (a) the role of government institutions³⁴ in driving top-down sustainable or unsustainable transitions, and (b) transitions in underdeveloped states and unindustrialized societies – deserve more consideration. The introduction of sustainability transitions in the context of developing island states and small island developing states (SIDS), is such an attempt.

³⁴ Institutions can be understood in many ways. Harre (1979:98) defined institutions as “an interlocking double-structure of persons-as-role-holders or office-bearers and the like, and of social practices involving both expressive and practical aims and outcomes”. A wide-perspective was also followed by Turner (1997:6), describing institutions as “a complex of positions, roles, norms and values lodged in particular types of social structures and organizing relatively stable patterns of human activity with respect to fundamental problems in producing life-sustaining resources, in reproducing individuals, and in sustaining viable societal structures within a given environment”. This study takes a narrower, more operational, view of institutions. With clearer demarcations, it discusses only formal, authoritative structures or mechanisms of social order. In short, government organizations. This view is also acceptable in transitions research. In *Engaging with the politics of sustainability transitions*, Meadowcroft states that institutions are “...understood not as rules, but as organizations... (they) frame political interactions, representing a sedimentation of norms, practices and relations of power. They shape the frontiers of the possible but can also enable reform” (2011:73).

4. *Developing island states and small island developing states*

Why should sustainability transitions theory and the multi-level perspective address developing island states and small island developing states (SIDS)?

Let us first re-state Meadowcroft's conceptualization of sustainability transitions. Meadowcroft maintained (2011:71) that "the transition idea provides a convenient political and policy frame to approach societal movement towards sustainability. By talking of 'transitions', aspirations for sustainability can be oriented into efforts to achieve long term change in critical societal subsystems currently plagued by persistent problems".

From this perspective, the distinctive properties of developing island states (and SIDS), and the persistent problems which compromises them, make this category of countries poised to benefit from such an analytical process. Moreover, developing island states (and SIDS) appear to be hugely relevant for the purpose of expanding the geographical and historical terrain of transitions theory and the multi-level perspective.

Small Island Developing States, or SIDS, is a category of 57 countries that share particular qualities regardless of their global spread: most are concentrated in the Pacific Ocean and the Caribbean Sea, and others are located in the Indian Ocean, the South China Sea and off the shores of Africa.

But there is no agreed upon definition to SIDS (Everest-Phillips, 2014).³⁵ Three SIDS are not islands, Singapore is not developing, and American Samoa, British Virgin Islands, Cayman Islands, Commonwealth of the Northern Mariana Islands, Martinique, Montserrat, Puerto Rico, United States Virgin Islands are "associated states". Nevertheless, the United Nations formed this class of countries as they represent a "special case of for sustainable development in view of their unique and

³⁵ Srinivasan (1986) stresses that any index of smallness is arbitrary. Even in terms of population size, the definition is disputed. Some scholars offered 1.5 million people as a threshold (Commonwealth Secretariat – World Bank Joint Task Force, 2000), while others proposed a 5 million threshold, or even more (Brautigam and Woolcock, 2001; Collier and Dollar, 1999; Streeten, 1993). One thing certain, islands are expected to be surrounded by water (Royle, 2007:34).

particular vulnerabilities and that they remain constrained in meeting their goals in all three dimensions of sustainable development" (UN, 2018:2).³⁶

Because of the absence of an accepted analytical classification of SIDS and, as displayed above, at least one "false positive" finding in the popular political definition (i.e. Singapore), this study considers developing island states and SIDS together, as long as they can exercise their sovereignty in decision-making processes.³⁷

For more than twenty years, both developing island states and small island developing states³⁸ have been on the sustainable development agenda (United Nations, 1998; 2005; 2014; UNEP, 1999a,b,c; Nurse et al., 2001; UNCTAD, 2002; Kaly et al., 2002). Although developing island states and SIDS may differ in their cultural and social backgrounds (Ghina, 2003), from a geographical and economic perspectives – indeed, from a development perspective – they have much in common. Mountainous, part of an archipelago (or a coral atoll), remote and typically tropical, developing island states are relatively insular. Their insularity, according to Selwyn (1978; 1980) makes them economically disadvantaged, and poor. Developing island state also tend to have a narrow natural resource base and a measured human and economic resource base (Briguglio, 1995).

These shared features breed specific development challenges. Economically, small island countries are distinctive in their disabilities. Their small domestic markets, not

³⁶ For the sustainable development challenges of SIDS, see the Barbados Programme of Action. In 1994 the Global Conference on the Sustainable Development of Small Island Developing States translated Agenda 21 into specific measures to be implemented at the national and regional level of developing island states, with a focus on SIDS. Parties signed on the "Declaration of Barbados" and the Programme of Action for the Sustainable Development of Small Island Developing States in which 15 priority areas for specific action were listed: climate change and sea-level rise; natural and environmental disasters; management of waste; coastal and marine resources; freshwater resources; land resources; energy resources; tourism resources; biodiversity resources; national institutions and administrative capacities; regional institutions and technical cooperation; transport and communication; science and technology capacities; human capital resources and skills development; policy implementation, policy monitoring and policy review.

³⁷ Notwithstanding geographical size and population disparities, the argument is that for the time-frame of the research, independent sovereign developing island states (Sri Lanka) exhibited similar transitions dynamics to some independent sovereign SIDS (Nauru and Jamaica). This is supported by evidence as the findings section demonstrates. As far as independent governance of local, national, socio-technical regimes, sectors and industries is concerned – the subject matter of this inquiry and unit of analysis – a fair amount of SIDS should not be defined as a SIDS. For instance, in the case of Montserrat, the United Nations Committee on Decolonization includes Montserrat on the list of Non-Self-Governing Territories. United States Virgin Islands is another example of potentially false classification, as its status is defined "unincorporated and organized territory". In short, the category of self-governing and independent small island developing states remains controversial.

³⁸ As well as "small economies", see Findlay and Wellisz, 1993.

easily accessible, suffer from restricted diversification and insufficient competition. Their economies hinge on a narrow resource base, international trade and – a modern feature – foreign aid. Remittances too contribute considerably to the wellbeing of islanders, albeit with some counter-effective results (Amuedo-Dorantes, 2010; Brown, 1995).

Moreover, poorly developed infrastructures, and limited funds, human resources, and skills exacerbate domestic difficulties (Nurse et al., 2001). According to Everest-Phillips (2014:8), the shared characteristics of these countries may also consist of "excessive dependence upon a few dominant activities, volatility in national incomes, natural monopolies leading to market distortions, inadequate capacities in the public and private sectors, and limited opportunities for high-skilled employment". As stated by Ghina (2003) SIDS are the most financially vulnerable cluster of states in the world.

Socially, developing island states are confronted with high inequalities and economic disparities between the urban elite and rural poor. Youth unemployment is another critical issue restricting economic progress and social mobilization. Pockets of harsh impoverishment can be located in rural areas as well as in the heart of cities. Everest-Phillips (2014:8) made an interesting observation that "because they have no land borders... (SIDS) are therefore less subject to spillover problems from neighboring regimes".

By environmental measures, developing island states do not constitute a homogeneous group. They vary geologically, climatically and ecologically. Some would have limited natural resources while others will be more abundant in this respect, with deposits of minerals of various sorts. Some would be more isolated than others. The availability of freshwater resources remains a grave concern in many island states, but not all. Competition over arable lands coupled with population growth is a common concern for many developing island states, and a thriving threat to the sustainability of subsistence and commercial agriculture (Nurse et al., 2001). Other environmental problems that most developing islands share are threats to biodiversity, degradation of coastal environments³⁹, pollution, vulnerability to natural disasters (Kakazu, 1994), climate change and sea-level rise, and fragile marine ecosystems (Ghina, 2003).

³⁹ This is also relevant for larger developing islands. See Berg et al., 1998.

According to Lewis (1999; 2003) and Kelman (2003), developing island states and small island states are typified by an immediacy of interdependence in social-environmental systems, severe competition between alternative land uses and intensity of land use, spatial concentration of productive assets, high costs in accessing external goods, relatively closed, and close-knit, social groups and society⁴⁰, and relatively rapid population changes.⁴¹

Nurse et al. (2001:846) pointed to this multifaceted predicament: "pressing socioeconomic concerns as poverty alleviation; high unemployment; and the improvement of housing, education, and health care facilities all compete for the slender resources available to these countries".

And yet, smallness and remoteness have their advantages. The World Trade Organization Secretariat argued that small economies, island and non-island, enjoy a degree of flexibility in the governance processes and in the response to changes and challenges (2002:46). Everest-Phillips (2014) also mentioned that they are self-contained political units of administration. If circumstances are beneficial, these socio-political features can evolve into good self-governance with high national social capital levels (Baldacchino, 2007).

Not all countries practice these advantages however. Two factors seem to stand out to differentiate high-performing small economies from low-performing ones: good institutions and macro-economic stability, and state capacity level and management of social conflicts over scarce resources.

⁴⁰ See also Katzenstein (1985) and Farrugia (1993).

⁴¹ Some reservation should be noted. A seminal review by the World Trade Organization Secretariat of the empiric literature of small economies tells a story of diversity in circumstances and evidences: "there is no unanimity on what the most relevant characteristics of small economies are, nor on which variables are the most appropriate to measure country size and what cut-off points should be used", the review states (2002). It is also mentioned that "conclusions in the empirical literature tend to be somewhat contradictory and inconclusive in a number of important points". Furthermore, the Secretariat notes that "there is ambiguity regarding what globalization and integration in the international economy represent for small states. According to some analysts, globalization means a real opportunity for countries that suffer from remoteness and isolation... others argue that small economies are too weak and vulnerable to be able to survive if integrated... into the global economy. They fear that small economies would succumb if they have to face international competition without enjoying any form of protection" (ibid).

Collier and Dollar (1998; 1999) highlighted the significance of good institutions for small states' development.⁴² Brautigam and Woolcock (2001:1-2, 6) maintained that institutional capacity level and governance of social conflicts over scarce resources are crucial for the social development of small developing states. They highlighted the fact that "there are no significant differences between small and large countries in terms of the quality of their institutions. However, precisely because small countries are more vulnerable, the quality of their institutions matters even more than it does in large countries... effective state institutions are likely to be critical in mediating the impact of globalization in small developing countries... a well-working bureaucracy is important for formulating and implementing economic and social policies. Such policies enable countries to upgrade their skill bases, manage their interactions with foreign investors and sources of technology, negotiate better packages in trade agreements... and devise ways to cushion their populations from the instability that accompanies openness".⁴³

Although these observations could potentially improve governance in developing island states, the research into the administrative capacities and the management of national resources in small economies, developing island states and SIDS has been relatively poor (Chittoo, 2011; Everest-Phillips, 2014; Schahczenski, 1990).

The few empirical studies that were conducted have shown that apart from the occasional success story, most of the island economies have failed to attain and sustain self-reliance (Kakazu, 1994).

Resting in part on an extensive literature review, and taking stock of their common characteristics, positive and negative, Ghina reckoned that SIDS share similarities which "constrain them in their path to implement sustainable development" (2003:142). Several years before, Maul (1996) and Leatherman (1997) stated, separately, that these persistent issues underline the weaknesses of SIDS and other developing island states in achieving sustainable development goals.

⁴² The study of the World Trade Organization Secretariat stressed that countries, large and small, do not differ in terms of policy quality, hence, "poor institutions and bad economic management are not peculiar to states according to size. What is statistically significant is the correlation between good policy and growth performance, both for small and large states".

⁴³ They add that there are scant empirical evidences on the reasons why some small states do better than others (p.5).

It appears that transitions scholarship and the studies of developing island states (SIDS included) share a similar impetus: the aspiration to foster sustainability and to overcome persistent societal problems.

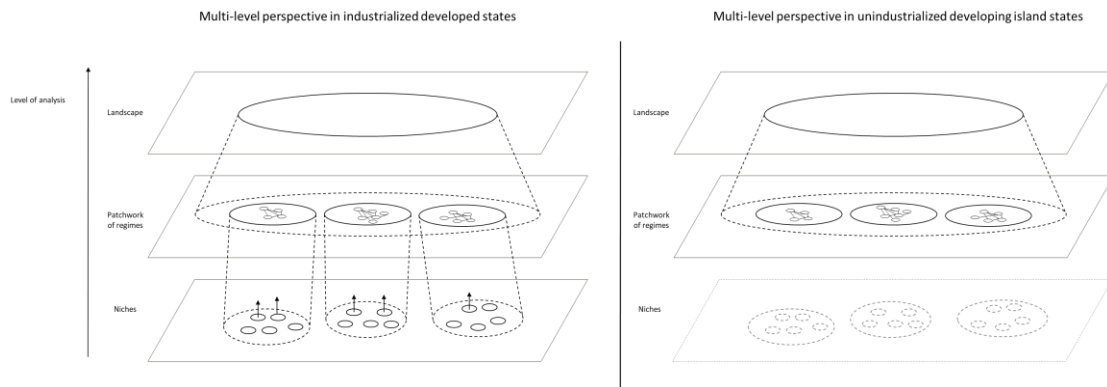
Nonetheless, any attempt to mobilize sustainability transitions thinking for the analysis of societal and sectoral changes in developing island states must first consider some fundamental differences between the usual subjects of transition inquiries and the circumstances pertinent to developing island states. Differences which raise critical questions.

One of the hypotheses of this study, in terms of the multi-level perspective, is that in the settings of developing island states, and in SIDS in particular, niche-actors and niche-innovations may play a smaller role in driving societal, sectoral and industrial transition processes. That is, of the four transition pathways typology (see Part 1), the first scenario – *transformation pathway*, where niches are not mature enough and changes derived from the landscape exert pressures on the stability and integrity of the socio-technical regime – should better reflect transitions dynamics. It may even be that in some settings and sectors, effectively, socio-technical niches, research and development facilities, innovation networks and so forth, may not exist (see diagram 2).

Considering that the domestic marketplace will be small, insular and distant from the global market (Pelling and Uitto, 2001), economies of scale will be limited and modes of production may be traditional. Therefore, a dominant socio-technical regime, a sector, an industry, once it had gained momentum, will be stickier, and change-resistant. Social changes will be more path-dependent and led from the top-down.

Lachman (2013:274) postulated this. "In developing countries", he supposed, "most, if not all, technology is not domestically developed, but rather imported from the developed world while the knowledge behind the technology often stays in the country of origin". He made a similar hypothesis that "the rapid rate of development, population growth, and urbanization in developing countries which is favored over sustainability transitions... (is) implicitly strengthening regimes to a degree which is rarely the case in developed countries".

Diagram 2. Multi-level perspective in industrialized developed states and in unindustrialized developing island states: a hypothesis (Adapted from Geels, 2002).



Furthermore, in some developing island states and in SIDS, the researcher might witness an omnipresent government: one which is entrenched in every aspect of the island's social and economic affairs. Perhaps, government institutions will be the only domestic actors capable of introducing new technologies and techniques, and of challenging existing regimes.

As a result of the dependencies in- and vulnerabilities to- exogenous regional and international actors, and trends, the landscape level, the macro-level, may exert a wide array of pressures – geopolitical, macroeconomic, technological – on the local government and on domestic socio-technical regimes. Under such conditions, national transition choices and policies may be the engine of change. The theoretical and mental models, the knowledge, and the management and governance⁴⁴

⁴⁴ The notion of "governance" has various meanings and had received different interpretations depending on the context in which it was employed (Rhodes, 1997:15, 46-47). In general terms, it refers to leading a country its local society with strategy and responsibilities in an adaptive manner in altering circumstance (Mothe, 2006:96). Larmour (1996) argued that in the development discourse the World Bank's definition is most prevalent and frequently employed. The Bank defines governance as "the manner in which power is exercised in the management of a country's socio-economic resources" (World Bank, 1992). Likewise, the Asian Development Bank defines "good governance" as "the manner in which power is exercised in the management of a country's economic and social resources for development" (Mellor and Jabes, 2004:3). Accordingly, this work defines governance as the "manner (processes and actions) in which power is exercised in the management of a country's natural, economic, human and social resources, and critical assets, for development". Good governance is "synonymous with sound development management" (based on the World Bank definition from 1992). Note that this study is not concerned with how to ensure good governance per se (for example, see Al-Rodhan, 2009). The study is indifferent towards concepts such as "separation of powers" or "independent media", which are arguable at best (see Poluha and Rosendahl, 2002).

strategies employed by officials, civil servants and decision-makers will carry considerable influence over the course of societal development, whether they turn out to be sustainable or unsustainable.

On a deeper level, an ontological level, the conventional notions of what constitutes "development", or "transitions", may not be applied mechanistically to developing island states. The meanings and definitions of the units of analysis and levels of analysis that comprise the multi-level perspective; its transitions dynamics, its mechanisms, its actors, could differ from the way they are understood in developed industrialized states.

All this makes the investigation into the structures and agencies driving transitions in developing islands states, as well as the inquiry into the specific role of government institutions in directing transitions, worthwhile. It should be beneficial for both strands of literature. For sustainability transitions theory, such a study can provide an opportunity to expand the boundaries of the multi-level perspective and explore new top-down pathways for sustainable development. For development literature, and for the study of developing island states, this research could provide a more complete and methodological analytical framework to guide future policy design.

To this end, one more issue comes to mind. When introducing sustainability transitions as a theory and the multi-level perspective as an analytical framework in the context of developing island states, the operational ambiguity of sustainable development – in other words, the choice not to interpret "sustainability" in any specific terms – may be deemed obstructive. This is yet another speculation this research makes.⁴⁵

If the multi-level perspective was to better serve the "sustainable development needs" of local institutions in unindustrialized, insular, developing island states, it may need to be supplemented with a more tangible and working conceptualization of sustainability. This is also to be the case if government institutions are eventually identified as critical actors in the transition processes of regimes and sectors. In this instance, additional theoretical frameworks ought to be incorporated into the multi-level perspective.

⁴⁵ This speculation is based on the six-year experience of the author in government and in collaborating with the UN, UN Environment, the World Bank, the OECD, the EU, and foreign governments on sustainable development issues.

Accordingly, some insights from policy making literature could be instrumental to the understanding and guidance of governance of transitions. Welded together, these complementary ideas could offer new insights to sustainable transitions analysis and management.

5. *Structure of the analysis component*

This study expands the geographical and historical terrain of sustainability transitions theory and its central tenets and leading approach, the multi-level perspective, by applying it for the analysis of societal and sectoral changes in developing island states. It does so in order to, first, assess the explanatory power of the theory, and then to modify and improve both the multi-level approach and policy design in developing island countries.

The second Part of this study, *Methods*, gives an account for how the research was organized and executed to achieve these goals. It discusses the merits and constraints of the case study approach, the research plan and information gathering strategies and techniques.

The third Part of this study, entitled *Findings*, explores societal and sectoral transition dynamics in developing states through the presentation of case studies. These cases describe transitions primarily in the agricultural and extractive sectors in postcolonial developing island states, Nauru, Jamaica and Sri Lanka. Each case reviews essential historical background, the political and economic circumstances as the backdrop to local, self-led, independent, development efforts. Each case then focuses on the transformations of the sectors during the time frame of the analysis and articulates some concluding remarks.

In the analysis of sectors, the study shows how top-down government-initiated policy interventions engendered transitions, and how governments challenged and replaced socio-technical regimes; in industry, in trade, in economic affairs, in education, in subsistence and commercial agriculture and in the local dietary arrangements, in mineral extraction and so on. It also illustrates the extent to which poor policy design led to the degeneration of peoples and nations.

The *Findings* section also delineates the results of the exercise of engaging local communities of different knowledge and practice with the multi-level approach. This is where an evaluation of the generalizability and transferability of transitions knowledge (concepts, frameworks, models) *with* local societies was conducted (see Part 1).

With reference to empirical evidences and to selected literatures, the fourth Part of this work, *Discussion*, attempts to draw the attention to patterns emerging from the

cases analysis. It conducts a more focused discussion on two complementary fields of research which could contribute to the multi-level perspective: adaptive policy making (APM), and the capital theory approach to sustainability.

In this fourth Part, an integrated framework of sustainability transitions in developing island states and small developing island states is presented. This conceptual model, a national sustainability transitions schematization, links the multi-level perspective, adaptive policy-making and the capital theory approach.

The fifth Part summarizes the study and underscores the contribution it aims to make.

Part II Methods

6. Overview

This study presents an analysis of societal and sectoral transitions in three developing island states. Its aim is to shed light on the determinants, drivers and dynamics of these processes, thereby expanding the historical and geographical terrain of transitions theory to cover the developing world. The premise of the study is that a deeper understanding of sustainability transitions theory, and a recognition of the modifications the theory needs (if it needs to be modified), can be gained through a study of sustainable and unsustainable societal changes in postcolonial developing island states – particularly the relations between a country's government institutions, its socio-technical regimes and sectors, its resources, and its wider socioeconomic and environmental landscape.

To this end, it is important to note that the cases are not intended to unveil new historical facts, but to examine and refine the conceptual perspective.

Furthermore, if the analysis of transitions draws on primary sources – by means of semi-structured interviews, participant observations or group consultations – these primary sources can also be asked to evaluate the generalizability and transferability of sustainability transitions knowledge (concepts, frameworks, models).

In other words, a qualitative research design founded on surveys of local communities of knowledge and practice can serve to deliberate both on "that which needs to be explained" (i.e. the sectoral transition) as well as on the "explaining framework" itself (i.e. the multi-level perspective).⁴⁶

Accordingly, the core component of the study is a coherent narrative of the development of socio-technical regimes in each country (for the choice of sectors, see chapter 8. Data collection strategy and methods). These in-depth case studies overview a history of regimes transitions, and provide an explanation of why and how events have transpired. This "processual analysis" (Pettigrew, 1997) does not explain variance in dependent variables caused by independent variables. Rather, it describes results in terms of events sequences, well-suited to the multi-level perspective of transitions studies (Geels, 2011).⁴⁷

⁴⁶ See Part 1.

⁴⁷ See Geels (2011:34), Pettigrew (1997), Abbott (2001) and Langley (2007) on this approach.

Geels cited Abell (2004) and Pentland (1999) to argue the benefits of these narratives of causality: "to explain outcomes, the analyst thus needs to trace unfolding processes and study event sequences, timing, and conjunctures. Process-oriented scholars have therefore turned towards narrative explanation because narratives can capture complex interactions between agency and changing contexts, time, event sequences, making moves in games, and changing identities" (2011:34-35).⁴⁸ From this perspective, primary data drawn from interviews is presented in this work in a descriptive manner intertwined as an essential element of the narratives of development of socio-technical regimes in each case country.

To complete this in-depth analysis, a significantly small sample of countries was selected than the usual sample in comparative statistical studies (small-N sample). However, the sample size should not damage the legitimacy of findings, considering the serious reservations that have already been casted on the validity of conclusions drawn from cross-sectional regression analyses about development processes (Findlay and Wellisz, 1993; Hicks, 1980). Case studies analysis, in other words, is a sound method (Creswell and Poth, 2017).

⁴⁸ Abbot (1991:227) explained this approach, noting that "theorizing the social process via narrative is a deep tradition in both history and sociology. If there is any one idea central to historical ways of thinking, it is that the order of things makes a difference, that reality occurs not as time-bounded snapshots within which "causes" affect one another... but as stories, cascades of events".

7. *Learning from case studies*

Using case studies to conduct empirical research is an established methodological approach for the appraisal of complex systems transitions (Bolton and Hannon, 2016). It is also an advantageous one. Case studies are designed to answer "'how' or 'why' questions" (Yin, 2009:2). They are especially useful in the event a researcher "has little control over events" and when the focus of the study is on "a contemporary phenomenon within a real-life context" (ibid). Moreover, as a methodological approach, case studies have a longstanding tradition as means of developing rigorous theories (Flyvbjerg, 2006).

Of the five methodological alternatives presented in Creswell and Poth (2017) for qualitative research design, a combination of case study analysis and narrative development, of a small-N sample, was practiced. Ethnographic research, phenomenological inquiry and grounded theory development were rejected, due to circumstantial limitations as well as in light of the purpose of the analysis component described hereinabove.

This study involves an analysis of sectoral transitions in three developing island states, two of which are small developing island states. All three are former colonies. Sri Lanka, the largest island with a population of 20 million people (according to a 2012 census), was a former British colony which gained independence in 1948. Jamaica, with a population of 2.6 million people (according to a 2011 census), was under the British rule until 1962. Nauru, one of the smallest independent states in the world, with a population of 10,000 people (according to a 2011 census), gained independence from the United Kingdom, Australia, and New Zealand (a trusteeship) in 1968.

While the category of self-governed, independent, developing island states consists of more than three countries, this empirical research focused on Nauru, Jamaica, and Sri Lanka for several reasons.

First, all three countries share a status of postcolonial states. This status imbues them with comparable political and economic background and a long-standing dependence on foreign economies for their domestic development; a mercantilism legacy and an outward looking orientation.

Second, the three countries were chosen to make this study geographically representative. Nauru is a developing island state in the Pacific Ocean. Jamaica is a developing island state in the Caribbean Sea. Sri Lanka is a developing island state in the Indian Ocean.

Third, all three countries are confronted with population growth, narrow natural and human resource base, and a variety of additional development-related debilitating factors which characterize developing island states (see Part 1). Nauru and Jamaica were endowed with natural resources. Jamaica and Sri Lanka inherited plantation-based economies. Jamaica and Sri Lanka also share delicate ethnic balances to struggle with. All three states suffer terribly of a dwindling human capital stock and restricted opportunities for high-skilled labor, a competition over arable lands, and a thriving threat to the sustainability of subsistence and commercial agriculture.

At the same time, the sample is not confined to the monolithic (and therefore, homogeneous) context of very small developing island states. A sample comprising the smallest of SIDS, should jeopardize the extension of findings to the larger population of developing island states. This is a matter of maintaining the generalizability of the study's findings and conclusions.

Moreover, during the second half of the 20th century, the time span of this research, all three countries have gone through a multi-generational cycle of development and decline, or a "boom and a bust", in terms of social wellbeing and development outcomes. What appeared to be in the 1960s and 1970s a "sustainable transition" of critical sectors in three societies, became clear as "unsustainable transitions" during the 1980s and the 1990s. That is, following independence, and despite auspicious conditions, local development strategies resulted in disappointing performance, and in some sectors, in sheer collapse.

Another reason for choosing these countries for the empirical work is a practical one: the author had an access to leading practitioners and scholars in these countries.

The case study method is not without limitations. Although the conclusions of the study lead to an elaborated and operational transitions framework (presented in the Discussion section) which attempts to hold relevance to various developing states, the findings of this research are specific to the Nauruan, Jamaican and Sri Lankan cases, and therefore may be difficult to generalize. Given these methodological restrictions, it is best to describe this study as an exploratory endeavor.

8. *Data collection strategy and methods*

The empirical study was informed by primary data and secondary data. Primary data were collected in one of three methods: (a) semi-structured interviews, (b) focus group discussions, and (c) participant observations. Primary data collection was complemented with a literature review (secondary data) of 536 literary sources. These methods are common in transitions theory (Grünefeld et al., 2012; Kern, 2012; Kern and Smith, 2008; Smink et al., 2015; Verbong et al., 2013).

Semi-structured interviews are discursive interactions where an interviewer elicits information from an interviewee by enquiring into issues or problems following a set of predetermined questions. The semi-structured interview offers a space for participants to highlight aspects they deem significant in relation to the issue. This flexibility allows the conversation to stray from the questions guide and it provides the opportunity to recognizing new ways of observing and considering the topic at hand (Birmingham and Wilkinson, 2003; Longhurst, 2003; Miles and Gilbert, 2005).

Focus groups are assemblies of participants who gather to discuss a given issue that was set by the researcher. The researcher presents the topic of the conversation, frames the discussion, provides contexts and keeps the participants on topic, but otherwise refrains from interpretations, thereby permitting the participants and encouraging them to engage with the topic freely, from various perspectives, at times opposing (Silverman, 2013).

A third method employed in this study was participant observations. A staple of ethnographic research and cultural anthropology, in simple terms, participant observation is used to describe a culture, to recognize another way of life as perceived from the native's position. It takes place in social situations, which can be identified by three essential features: place, actors and activities (Spradley, 2016:39). The purpose of ethnographic research, and of participant observations in specific, is, in the words of Malinowski (1922:209), "to grasp the native's point of view, his relation to life, to realize his visions of his world".

Spradley (2016:3) refined the aim of both field-work and participant observations, stating that they involve "the disciplined study of what the world is like to people who have learned to see, hear, speak, think, and act in ways that are different. Rather than studying people (ethnography, observations, etc.) means learning from people". The essential core of the ethnographic approach, he adds (2016:5) holds a concern

"with the meaning of actions and events to the people we seek to understand". Participant observations begin by witnessing and documenting activities in social situations, and as the study advances, the structure of events becomes clearer.⁴⁹

For the first two methods, interviews and group discussions, a questions guide was designed to cover the key aspects of the study (see *Appendix 1. Questions guide*). One hundred and eighty (180) individuals were surveyed using these two methods.

The questions guide consisted of 23 overarching questions with follow-up enquiries intended to provoke in-depth responses regarding (a) the transferability of transitions theory and the multi-level perspective from the developed to the underdeveloped context and (b) the development processes and sectoral transitions' drivers and dynamics.

Using diagrams and schematizations of the multi-level perspective, the study subjects discussed the merits of the theory and models, and the extent to which theoretical levels and units of analysis reflect and represent local circumstances, actors and processes.

Their critiques and insights served to validate, and where needed to modify, the multi-level perspective. Interviewees and participants also discussed, and argued the meanings of "development", "sustainability", "national resources", "transitions", "landscapes", "regimes", "sectors", "niches", and "innovation".

This exercise provided a unique and attractive opportunity to explore transitions knowledge and concepts with local communities, and document their reactions to transitions' ontologies, vernacular, processes and forces at work.

Interviewees were asked to describe the relations between local government institutions, socio-technical regimes (or socio-technical systems and sectors), niche-actors, national resources, and the notion of "sustainable development". In addition, subjects engaged with complementary theories of development and governance, and a precise operational conceptualization of sustainable development (the capital theory approach to sustainability) and adaptive policy making. They have appreciated

⁴⁹ For additional information on the method and practice of participant observations see Atkinson et al., 2001, and Bernard and Gravlee, 2014.

the usefulness of these ideas and suggested possible links between these different strands of knowledge.

The second part of the interviews and discussion groups was dedicated to explore development processes and sectoral transitions' drivers and dynamics in each case study and in developing island states as a category of countries.

Here, topical experts, Nauruans, Jamaicans and Sri Lankans, but also scholars, statesmen and professionals of other nationalities, identified those sectors (regimes) – in any environmental, societal and economic domain – which have contributed the most to national development since independence.

This research did not assume *a priori* (i.e. independent of observation) specific socio-technical regimes or sectors of importance, consequences and representativeness. Rather, it invited research participants to identify domestic socio-technical sectors – with a working definition of a "regime" nearby (according to the MLP) – that, in their opinion, contributed the most to national development (or underdevelopment) since the independence of the country. *Posteriori*, their choices were triangulated with other participants and with topical literature.

The identification of sectors is presented, with additional discussions, in each case country in Part III of the analysis component. The catalogue of sectors that is eventually investigated in the thesis is not an exhaustive one: it may be the case that other sectors in those countries reveal different transition dynamics. This work, as is mentioned in *Chapter 7. Learning from case studies*, prioritized to assess the merits of the MLP across several sectors in different countries rather than between different sectors within a single country.

In addition, subjects delineated the emergence of these regimes and their transitions over the time span of the study.

In all three cases, the agricultural sector (Nauru, Jamaica, Sri Lanka) and mineral extractive sector (Nauru, Jamaica) were initially identified, due to the traditional role these sectors have occupied in engendering revenues, creating employment

opportunities, generating wealth, attracting investments and in other development processes.⁵⁰

Wise and Shtylla (2007:7) posited that "extractive industries can contribute to sustainable development, when projects are implemented well and preserve the rights of affected people, and if the benefits they generate are well used". The International Council of Mining and Metals stated that extractive sectors provide a significant, and sometimes critical, contribution to economic development and poverty alleviation in developing countries, on condition that the underlying settings are proper (International Council on Mining and Metals, 2006).

On the role of agriculture in economic development, a heavily researched area, Johnston and Mellor (1961:566) held that in developing states, agriculture is an existing sector of major proportions, "frequently the only existing industry of any consequence. Typically, some 40 percent to 60 percent of the national income is produced in agriculture and from 50 percent to 80 percent of the labor force is engaged in agricultural production".⁵¹

In addition to recognizing these sectors, the study's respondents and participants identified additional regimes of no lesser sway over national development outcomes.

Interviewees and participants were then asked to highlight the policies and mechanisms behind sectors' formation, and the drivers of their transitions.

They were asked to underscore explicit moments, or institutional decisions, in the postcolonial, independent history of each country, after which a certain path of sectoral and social development was assumed.

⁵⁰ Agricultural and mineral extractive sectors also engendered many social and ecological detrimental effects. The World Bank noted (2018) that "natural resources play a dominant social, economic, and political role in 81 countries, accounting for a quarter of global GDP and half the world's population... But all too often these natural resources have become a source of conflict rather than opportunity. Many resource-rich countries also suffer from poverty, corruption, and conflict stemming from weak governance".

⁵¹ They maintained that although national resources such as land and labor are invested in subsistence and commercial agriculture, these resources are often used at low levels of productivity.

For extended discussions on agriculture and economic development in developing countries, on the issue of efficiency in agricultural resource use, on land and labor surpluses, the impacts and barriers for adoption of agricultural technology, and institutional constraints to agricultural development (land ownership), see Ghatak and Ingersent, 1984.

Interviewees explored when and how institutional decisions and government interventions altered the configuration of important sectors, and as a result, influenced on the conditions and distribution of resources. They attempted to indicate resources depletion or accumulation, or changes in the equality of use or ownership of resources over time, as a possible outcome measure of sustainability. They identified the policy actors involved in these decisions, their motivations and rationale. Where possible, participants described the knowledge and skills of policy makers.

With regards to specific sectors and industries operated by the government, some interviewees reflected on various aspects of policy design and implementation: staff training, monitoring and evaluation measures, learning and improvement mechanisms, and scientific and technical advices that were applied.

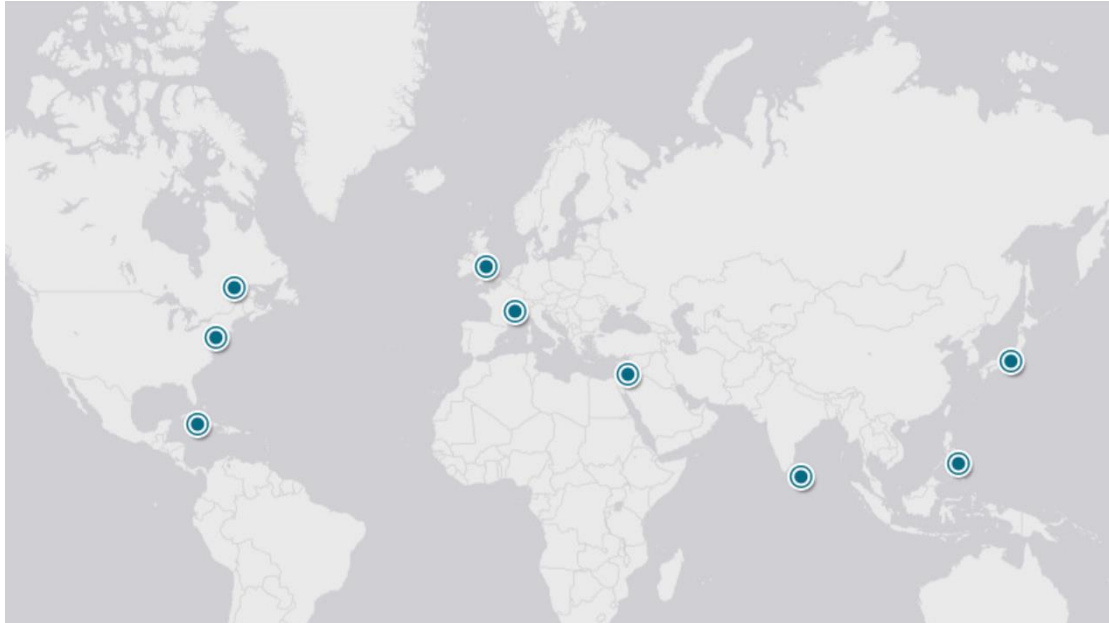
The sample of interviewees was selected using a snowball sampling technique (see *Appendix 2. List of interviews*). Data collection took place between October 2016 (in civil servant capacity⁵²) to August 2018. The data were validated through key informant interviews and focus group discussions.

To arrive at a sample of 180 participants, nine field work campaigns were organized (see map of research sites below). Research sites included Japan (Tokyo and Sendai), the Philippines (Quezon City and Metro Manila), Sri Lanka (Colombo, Negombo, Kilinochchi, Jaffna, Kandy, Nuwara Eliya, Hatton, Rozella, Binoya and with representatives from Batticaloa and Galle), the United States (Brooklyn, Manhattan, New Jersey), Canada (Ontario), Jamaica (St Andrew, St Catherine, St Thomas and Portland Parishes and with representatives from Westmorland Parish), France (Paris), the United Kingdom (Cambridge and London), and Israel (Jerusalem and Tel Aviv).

⁵² See DPA program at STEaPP, UCL.

Map 1. Field work research sites.

Source: National Geographic MapMaker Interactive (Open Source).



In-depth semi-structured interviews lasted between 60 to 180 minutes. When interviewees refused to be recorded, to not attach themselves with the information elicited, notes were taken instead. This was a recurring practice. The identity of interviewees, respondents and participants is protected by randomly rearranging the order of their interviews (in *Appendix 2*) and by concealing the names, places and dates of where and when the discussions took place.

During the field work, a number of community associations, which did not belong to the study sample, invited the researcher to visit and observe their meetings. Data gathered through participant observations and semi-structured interviews were documented immediately in the field.

Secondary data sources supplemented the interviews and informed the study. Secondary data include government documents, ministerial policies and strategies, reports of international organizations and research centers, official records of local agencies, and peer reviewed journal papers and books across several disciplines.

Descriptive statistics (e.g., frequencies, percentages, average values) were used in assessing the social, economic and environmental background of countries (case studies).⁵³

Secondary data was obtained in 10 archives, libraries and museums including the British Library (London), Columbia University Borrow Direct Interlibrary System (New York), University of the West Indies Mona Kingston Archives (Kingston), Center for Caribbean Thought (Kingston), Planning Institute of Jamaica (Kingston), University of Colombo Archives (Colombo), Jaffna Library (Jaffna), University of Peradeniya Library (Kandy), Rozella Tea Estate Museum (Rozella), and Store Field Nuwara Eliya Museum (Nuwara Eliya).

Note that the format of this work⁵⁴ allows space for only succinct presentations of the case studies and analysis of sectors.

⁵³ Obtaining reliable data was a major challenge of this research, hence the primary research strategy that was eventually practiced. As a focus group of government officials stated (personal communication, 2017), "it is impossible to find reliable figures from those years (1940s through 1990s). Whatever exists was rewritten by the establishment, by the institutions in the Capital. As far as further evidences are concerned, no one was keeping any records, any statistics and any sheets... it is best to draw on interviews and discussions". Similarly, a focus group of senior economists noted that "you go to the war zone, it's just people in huts, doing some fishing activities, a little bit of farming. No one's taking notes. If anyone dares asking these sorts of questions, he raises suspicions. Statistics are weapons of war, right?" (personal communication, 2018).

⁵⁴ The analysis component of the DPA thesis is restricted to 60,000 words and is expected to include a comprehensive literature and theoretical review, a methods section and a discussion section which pays attention to policy implications of the research. In all accounts an exploratory endeavor, a DPA analysis component should accomplish yet, in the words of Bertrand Russell in his *General Effect of Scientific Technique* (1952:17) the two functions of science: to enable us to *know* things, and to enable us to *do* things (i.e. lend policy options and advice).

9. *Ethics*

The research underpinning this work has gone through the complete ethical approval process required by UCL Research Ethics Committee. Research scope, strategy, methods and subjects were developed with an ethical risk perspective in mind, and through consultations with the candidate's Acting Head of Department, Director of Doctoral Studies, Departmental Graduate Tutor for Research, and Primary Doctorate Supervisor. The doctoral candidate provided an in-depth description of the data that will be collected in the course of the research project, including the methods of data collection and analysis, as well as a description of when and how the outcomes of the research will be disseminated (peer-reviewed publications, non-peer-reviewed publications and policy reports; conferences). The research project was registered with the UCL Data Protection Registration Service and gained approval by the Joint Research Office (see Appendix 1; Appendix 2; footnote 3, p.4).

Through the design and implementation of the research strategy, the doctoral candidate sought advices from his Primary Supervisor, Secondary Supervisor and his departmental Director of Doctoral Studies, in order to minimize risk of harm, to fully protect the participants of this study as well as to protect the researcher (the doctoral candidate).

Complying with the Data Protection Act 1998, the doctoral candidate was responsible for any processing of personal data under the Act. The doctoral candidate provided a description of the arrangements he made for the security of the data, including how and where it will be stored (offline on an encrypted laptop, or in hand-written notebooks). It was made clear that personal identifiable data collected and processed as part of this research will not be stored online, nor on any other device.

Participants of this study were handed with an Information Sheet (see appendixes 1), and have agreed that they understand what the study involves. In the course of the research, the doctoral candidate indicated that if participants decide, at any time, that they no longer wish to take part in this project, they can notify the researcher and withdraw immediately (including during interviews or discussion groups). All and any participants of this study gave their consent to the processing of the information they provided for the purposes of this research study. They understood that such information will be treated as strictly confidential and fully anonymized, and handled in accordance with the provisions of the Data Protection Act 1998.

Part III Findings

Nauru

10. *Historical background and conditions at independence*

If small developing island states are insular and remote, and if all developing island states are characterized by an interdependence between social and ecological systems, acute competition between alternative land uses, and relatively rapid population changes, then the island of Nauru is the quintessential SIDS.

The island is an oval-shaped raised coral atoll, located in the central Pacific Ocean (0°32'S 166°56'E), some 42 kilometers south of the Equator. In comparison with other Pacific islands it is unusually isolated (Davidson, 1968). Its nearest neighboring island is Banaba in Kiribati, 300 kilometers to the east (see map 2). Its area stands at 22.6 km², making it one of the smallest states in the world, with a narrow fertile coastal strip, varying in width from 100 to 350 meters, and a central plateau rising to 71 meters above mean sea level at the highest point of the plateau (Jacobson et al., 1997; Morrison and Manner, 2005). The island is surrounded by a living reef. From the crest, the coral reef drops to the ocean floor to a depth of approximately 4,300 meters (Hill and Jacobson 1989).

Map 2. Location of Nauru. Source: National Geographic MapMaker Interactive (Open Source).



Throughout the gradual geological formation of the island, the limestone plateau at the centre of the landmass, locally referred to as the "topside", was covered with a substantial stock of rich phosphates. Although the origins of the high-quality phosphatic material has not been fully explained (Morrison and Manner, 2005), it is estimated that it was deposited on the island by millions of years of accumulated bird droppings which were then slowly fossilized (McDaniel and Gowdy, 2000; van Fossen, 2003).

The island's climate is a standard oceanic climate of high humidity and relatively constant temperatures, with some precipitation variability, averaging 2,000 mm per annum. Attributable to its small size, its fresh water resources have always been circumscribed (Morrison and Manner, 2005).

Map 3. Nauru. Source: National Geographic MapMaker Interactive (Open Source).



Nauru was originally approached from the northwest at least 3,000 years ago, inhabited by Polynesians and Micronesians (Nauru Department of Economic Development and Environment, 2003). Early life on the island were pleasant: the island was covered in thick tropical rainforest, indigenous Nauruans lived in a delicate peaceful equilibrium with their environment, developing a local form of agroforestry. The small tropical forest provided the islanders with pandanus (a fruit), mangos, and breadfruit, and with fiber and timber from the Tomano tree and Pacific Mahogany (Feary, 2008).

The reef provided the islanders of tuna fish. The narrow coastal belt flourished with coconuts and wild almond trees (Kirch, 1997). For most of its inhabited history, the island supported a population of about 1,000 individuals, who lived on fish and a variety of cultivated and natural crops (Anghie, 1993).

Secluded, the islanders developed a self-sufficient, self-contained, sturdy society, and engaged in singing, dancing and storytelling (Weeramantry, 1992; McDaniel and Gowdy, 2000). "Year in and year out... (Nauruans) lived intimately connected to the other inhabitants, real and imagined, that shared their world of palm trees, Noddy birds, sand, sea, and sky" (McDaniel and Gowdy, 2000:14).

The first contact of the indigenous people with Europeans was in 1798. The island was seized by the German Empire in 1888 and subsequently incorporated into the empire's Marshall Islands Protectorate (Firth, 1978).

Annexation

The annexation of Nauru will mark the commencement of 80 years of what the multi-level perspective refers to as "landscape pressures"; a gradient of great forces; globalization; resource hunger; international trade; cultural changes and so on, that will be exercised on the local society. Isolated for millennia, Nauruans were now to cope with "exogenous coercive forces, inexorably resulting in a violent transformation" (Senior Official, Nauru Government, personal communication, 2017).

Around the year 1900, one of the highest grades of phosphate rock deposits ever discovered was found in the topside of Nauru, beneath the tropical rainforest, the coastal strip and the reef (Sinclair et al., 1998; Connell, 2006). Albert Ellis, who chanced upon the rock in the early 1900's, asserted, "(Nauru is the) sight of a lifetime... Material in scores of millions of tons which would make the desert bloom as a rose, would enable hard-working farmers to make a living, and would facilitate the production of wheat, butter and meat for hungry millions for the next hundred years to come" (McDaniel and Gowdy, 2000:41).

Phosphate rocks is a finite natural resource (Van Kauwenbergh, 2010) of a unique role in crop production systems. Essential for plant nutrition, phosphorus is taken up by plants as phosphate (H_2PO_4^- , and HPO_4^{2-}). It is entailed in several bio-chemical processes, including photosynthesis and cell division. It is critical for root formation and seed formation and assists water use. It is present in every living cell.

The global need to intensify agricultural production prompted the colonialization of the small island of Nauru in the late 19th century. Many soils in many countries are deficient in phosphates, and the development of superphosphate fertilizers in the late 19th century made phosphate rock a rare and valuable commodity in many regions (Feary, 2008). Nauru, a previously ignored island, was catapulted from backwater into the world marketplace (Weeramantry, 1992).

In the year 1905 the German Chancellery authorized the Pacific Phosphate Company (PPC) to begin excavating Nauru's lands (Williams and Macdonald, 1985; Gowdy and McDaniel, 1999). On 17 December 1920, the island was transferred to the joint mandate of Australia, New Zealand, and Great Britain. The three countries signed the Nauru Island agreement granting them of exclusive rights to mine the island's phosphates and to purchase them at the cost of production, which was significantly lower than the market commodity price (Williams and Macdonald, 1985; Gowdy and McDaniel, 1999).

From 1920 until 1967, the British Phosphate Corporation (BPC) operated the mining sites and deployed excavation technology on the island (Weeramantry, 1992). An entire regime was forged around phosphate mining. Naturally, neither the machinery and technologies nor the knowledge and skills necessary to operate the mining industrial complex – the dominant regime on the small island – was developed domestically.

Independence

Nauru gained its independence on 31 January 1968, becoming the Republic of Nauru. A year earlier, in 1967, it gained full control over BPC which was then transformed into the Nauru Phosphate Corporation (NPC) (Gowdy and McDaniel, 1999). As analyzed by Williams and Macdonald (1985), and Weeramantry (1992), Australia, New Zealand and Great Britain expected that full control over the mineral stock, mining rights and apparatus would provide the islanders of the economic foundation to pursue sustainable long-term development.

As far as path-dependency is concerned⁵⁵, although it was improbable for a post-1968 Nauru government to reverse the influences of imperialism at a stroke, nor to interrupt in an instant the reinforcing loop in the economic organization of life on the island – namely, an increasing-returns incentive structure of phosphate digging (i.e. "the faster you mine, the more you profit") – this study rejects strict historical determinism implied by a path-dependent thinking. Indeed, the study recognizes some degree of immediate path-dependency and institutional lock-in which may have undermined the exercise of sovereignty at the wake of political independence.

⁵⁵ Path dependency is an article of interest in the multi-level perspective (see Garud and Karnoe, 2001; Geels 2011:25, 26, 36).

However, the study also credits Nauruan governments with sufficient agency to evolve-out of the island's pre-1968 circumstances. They have credited themselves with similar autonomy (Former Senior Government Official and Politician, personal communication, 2017).

It is because of this recognition that the study takes a longer, multi-decadal perspective, maintaining that with the passing of time path-dependency dwindles and the capacity of the state to shape social and economic life increases.

11. *Regimes and sectors of importance and consequences*

The societal development path of Nauru emerged out of historical, cultural and political considerations, from the strategies and policy interventions of colonial and postcolonial institutions, from the training and aptitude of the local government, and through the persistent pressures of the global economy and international demand for raw resources. A myriad of forces and circumstances which created pressure on local regimes.

Yet some regimes and sectors in this multi-layered structure, appear most significant in understanding the development and decline of the small island state. Of course, "importance" implies a value judgment of the superior influence of some regimes and sectors over others in the Nauruan study. To this end, the grounded research and empirical evidence, focus group discussions and key informant interviews were instrumental to recognize three separate, yet interrelated, dominant socio-technical structures (regimes and sectors) responsible for disappointing, if not calamitous, development outcomes.⁵⁶

By various accounts of interviewees, to understand Nauru, to fathom its transformation, requires acquaintance of three socio-technical regimes⁵⁷: the extractive minerals sector (Nauru Phosphate Corporation), the national financial sector (Nauru Phosphate Royalties Trust), and the agricultural and dietary regime. In the words of one former political figure in the Nauruan government (personal communication, 2017), "these three sectors held our best available development options... our fastest growth vehicles".

Interviewees also indicated the years when these sectors were founded, how they emerged, the social purposes they were aimed to serve, and whether or not they underwent significant transitions since their installation. With regards to the multi-generational cycle of development and decline in Nauru, or a "boom and bust" of sectors and regimes, primary sources emphasized the inflection points that put these three regimes on a specific development path. 1988, the watershed year, marked in their opinion⁵⁸ the point in time when societal and sectoral development turned to

⁵⁶ Perspectives and observations elicited in the interviews triangulated each other (i.e. cross verified). Primary data sources were also used to augment and triangulate the knowledge built up in professional literature and in government documents.

⁵⁷ Regimes and sectors were also described by interviews as "policy delivery systems" or "policy delivery vehicles" or, simply, "systems" as in "the agricultural system" and so forth.

⁵⁸ 12 interviewees agreed to this specific year.

societal and sectoral decline. In other words, interviewees discerned between transition periods according to development outcomes. So, the time span of 1968 to 1988 is considered in this study the first transitions period. The time span of 1988 to 2005 is referred to as the second transitions period.

12. *The first transitions period: sectoral and societal development*

Between 1968 and 1988, Nauruan governments orchestrated a nation-wide, outward looking, economic development endeavor. In terms of the multi-level perspective, landscape conditions, or macro-level conditions, were particularly propitious for an export-oriented economy. Globalization was accelerating. Raw materials, labor and capital flew into the small state (McDaniel and Gowdy, 2000). Regional demand for soil fertilizers for the agricultural industry propelled the price of superphosphates (Former Government Official, personal communication, 2017).

In 1968, the government "casted itself as master planner", a Nauru government official accentuated, "and have raised – what you refer to as (i.e. the multi-level perspective referes to) – dominant socio-technical regimes, and these regimes will fashion the future of Nauru" (personal communication, 2017).

The extractive minerals sector: Nauru Phosphate Corporation

The use of phosphates as fertilizers dates back to the 19th century, when animal-based sources, such as bones, manure and guano (bird dropping). Phosphate rich rocks, or phosphate minerals were treated with sulfuric acid to increase the phosphorus solubility (acidification) since the 1800s. The first quoted commercial production of phosphate rock was in 1874 in England (Cathcart, 1980). Mining was perpetrated by menial methods (by hand). It was introduced in the United States in South Carolina in 1867. Phosphate rock beds were exhumed manually and laboriously by dredges and sorting of rocks was also done manually (Shepard, 1880).

As viewed by Van Kauwenbergh (2010:4), "the most successful phosphate mining operations in the world generally involve high-volume removal of waste and ore, low or reasonable costs for upgrading, ore suitable for upgrading to prevailing market-grade specifications and large annual concentrate output in terms of hundreds of thousands to millions of tons per year. Successful export-oriented mining operations are also generally located within 200 kilometers of the coast and a port, or there is a well-developed transportation network to a port or markets". A small island, where

phosphate rock beds were flat-lying, soft and readily available, chemically-rich, easily removable, and near to ports, Nauru was a very lucrative spot for operations.⁵⁹

During the 20th century, several techniques and types of apparatus were employed to mine phosphate rocks, in a process similar to coal mining. In Nauru phosphate rocks were mined on the surface, a technique referred to as "open-cast" or "strip mining" (ibid).

At the early days of the mining sector, rocks removal was done with picks and shovels, and later, the British introduced a more mechanical method, importing tower cranes and mini-cranes, harbor cranes for the loading of cargo, engine machines to support truck mounted cranes and crawler cranes, cantilevers, some bulldozers, some dump trucks and some power shovels. Shipping and storage facilities were also imported. None of these technologies, neither the skills to assemble them, nor the managerial knowledge to operate the sector was developed domestically. This imported mining apparatus created a dominant design for the phosphate industry.

In Nauru, the Phosphate Corporation had reached a take-off point even before independence. Some 34 million tons of phosphate, worth approximately 300 million Australian dollars, were removed from the topside between 1919 and 1968 (Gowdy and McDaniel, 1999). "In high-volume applications", such as in Nauru, "surface mining methods are typically less costly and are generally the preferred method when deposit geometry and other factors are favorable" (Van Kauwenbergh, 2010:6).

In the wake of 1968, with further investments in the mining apparatus; the renovation of cantilevers, construction of granaries and improvements in excavating techniques and importation of machinery and mechanical excavation equipment, NPC's operations continued to grow until the 1980s (Morrison and Manner, 2005; Anon, 2010) (see Figure 1).

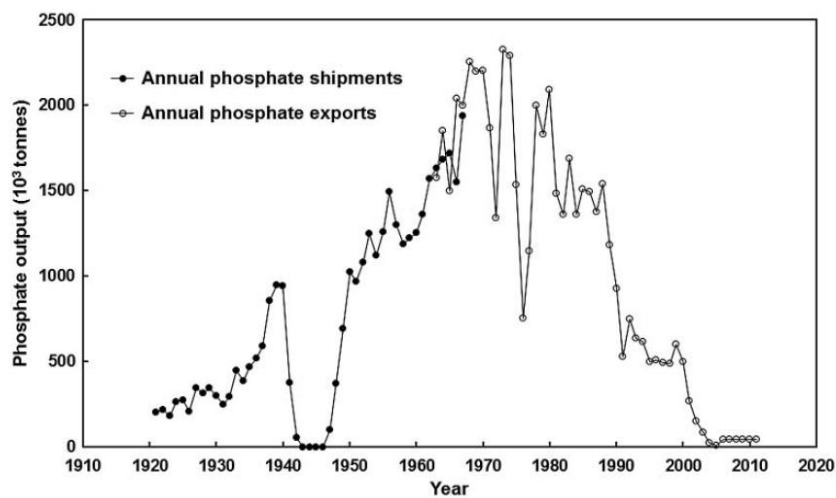
In terms of the multi-level perspective, the main interaction in this period was between landscape changes and the regime, in particular, the expansion of agricultural markets abroad that created pressure on the domestic industry to supply

⁵⁹ Van Kauwenbergh (2010:2) noted that "insular deposits, a type of sedimentary deposit associated with oceanic islands, such as Nauru, have been an important source of phosphate rock for more than 100 years; however, most of these deposits have been totally depleted or have short projected remaining lifetimes".

phosphates, which responded with imported machinery; mechanical excavation equipment, cranes, bulldozers, and shipping and storage facilities.

Niches in the mining sector were not endemic to Nauru. Radically new mining options, including sustainable ones, were never developed domestically. Innovation is not a cultural trait and "it is misread and not in practice" (Former UNDP Specialist to Nauru and the Pacific, personal communication, 2017).

Figure 1. Annual output of rock phosphate from Nauru, 1921-2011. Source: Gale, 2016.



Once a traditional economy, of subsistence agricultural system relying on fish, farming and on staples of fruits (Connell, 2006), in the early years of independence, the government saw the decline of the fishing and agricultural economies. By the height of the first transition period, agriculture had vanished almost entirely. In this period, the government's economic vision and the priorities of the mining industry prevailed while ecological and conservational concerns ebbed.

In terms of the multi-level perspective, landscape pressures and economic priorities have led to the ascendance, stabilization and dominance of the mining regime which, in turn, triggered wider socio-technical knock-on effects. Consuming scarce lands, the expansion of mining competed with agricultural activities. One sectoral transition occurred at the expense of another.

In addition, the potential advantages of the mineral extractive regime were neglected: the industrialization and technical leapfrogging of the economy did not filter down to the island's larger society.

The operation of sophisticated mining apparatus was not harnessed to producing a skilled, better technically-educated human capital base in the indigenous community. On the contrary. Australians took the positions of managers and engineers. Europeans were appointed as senior staff in manufacturing and trading. The majority of the workforce for the mines was shipped in from China, Kiribati and Tuvalu (Connell, 2006; Asian Development Bank, 2010). As Connell noticed (2006:50), "no more than a couple of hundred Nauruans were ever employed by the mine and then only in semi-skilled and bureaucratic positions".

"Greed, phosphates and gross incompetence", *The Economist* concluded the qualities of the Nauruan economy (2001), "when the money was flowing in, Nauruans saw no need to work for a living... Australians served as managers, doctors and engineers, Chinese ran the restaurants and shops". "Regrettably, I have to register to that analysis" (Former Diplomat to Nauru, personal communication, 2017).

All this was initiated by the government (and to a large extent path-independent): "plans and strategies in... post-independence years were... formulated by the first president, Hammer DeRoburt, and his cabinet, and contracted out. DeRoburt was president from 1968 to 1976 and, after a brief break, returned to power from 1978 to 1986, where he continued on and off until 1989... For the two most significant post-independence decades he was the principal arbiter of economic (transitions)" (Connell, 2006:50).

It is worth observing that, DeRoburt was entrusted with disproportionate managerial authority over the country's mining activities. Nauru is often classified as a "no party system" (Anckar and Anckar, 2000), and for the two decades DeRoburt was in power the traditional leaders who backed him were elected to parliament and dominated the island's politics (Kun et al., 2004).

By the end of the first transitions period, around the year 1988, the ecological outcomes of this socio-technical sector, and the removal of surface soil from between the columns of prehistoric corals, were obvious. The post-mining topside was described by McCarthy (1987:13) as "a barren moonscape of coral rock", and by D'Arcy (2012:207) as "a desolate wasteland of underlying rock pinnacles". Mined-out

lands became uninhabitable environments for "humans... crops... or anything else that might benefit the people" (Gowdy and McDaniel, 1999).

A crisis of environmental degradation was apparent. By the 1980s, most indigenous flora and fauna that had prospered on the topside were gone (Manner et al., 1984; Kirk 2000; Nauru's Department of Economic Development and Environment 2003). In addition, Weeramantry (1992) speculated that vegetation loss caused the micro-climate of Nauru to change, turning drier and hotter and all-together less-hospitable. These were some of the costs and consequences of a dominant, uncontested, government owned and led, socio-technical regime.

The national financial sector: Nauru Phosphate Royalties Trust

Ecological costs notwithstanding, economic proceeds in the first transition period were vast. From the early 1970s, royalties derived from the state-owned NPC were channeled to a newly erected sovereign wealth fund: the Nauru Phosphate Royalties Trust (NPRT).

The NPRT, the principal economic development vehicle of the government, was overseen by the Ministry for the Nauru Phosphate Royalties Trust. In this period, a sovereign fund emerged as a radically new national financial system, which was created rapidly, as a stream of exports stimulated officials to manage revenues in a new method. This sector too was completely state-established and state-run. "To even consider niche actors in the financial sector is ludicrous", a Nauruan official said (personal communication, 2017).

Phosphate excavation activities gave the people of Nauru an extraordinary level of GDP per capita. According to Gowdy and McDaniel (1999), this amounted to some US\$10,000 per person in the wake of the 1990s, compared to US\$2,400 for Papua New Guinea, US\$2,160 for Samoa, or US\$2,590 for the Solomon Islands.

The extractive minerals industry endowed the people of Nauru with hundreds of millions of dollars in revenues and royalties. In the early 1980s, returns on investments of the NPRT combined with the annual revenue of the NPC had made the Republic of Nauru one of the wealthiest states in the world (Asian Development Bank, 2010). Although official records are scant to non-existent, van Atta (1997)

posited that by the end of the 1980s, the portfolio of investments of the NPRT was valued at approximately US\$1 billion.

Lack of transparency in the socio-technical apparatus underpinning the NPRT – the trust's financial management and accounting system – was one major feature of poor governance. "The government... seldom prepared financial statements... The few reports that had been presented to the Public Accounts Committee of Parliament... were not up to accepted accounting standards" (Asian Development Bank, 2010:5). "It's not difficult to retrieve records", a Nauru Government Official added, "it's hopeless... and on top of that, quite convenient for retired politicians" (personal communication, 2017).

Although it was clearly proscribed by the constitution, governments funded their running fiscal deficits by borrowing against the portfolio held by the NPRT (ibid). The mineral wealth subsidized a society in which the norms and rewards structure was transformed; income taxes were abolished, employment was discouraged, and government ventures were undertaken with little public consideration (Asian Development Bank, 2010).

The agricultural and dietary regime

An additional heavily transformed socio-technical regime (and socio-ecological system⁶⁰) was the agricultural-nutritional regime, or dietary regime. In Nauru, the agricultural sector was one designed to satisfy local needs and to support self-sufficiency, a category of farming and crops cultivation known as subsistence agriculture. It was therefore intimately linked with local diets, and health. For this reason, both aspects of the sector or the system – the production end (including production substitutions) and consumption end (rules, norms, behaviors and preferences) – are weighed together.⁶¹

⁶⁰ Social-ecological systems consists of biological-geological-physical components and their associated social institutions and actors. They are confined to particular, contextual, spatial and functional boundaries (Redman et al., 2004).

⁶¹ In other words, agricultural proceedings in Nauru are of subsistence purposes, where yields are destined for local needs with no surplus gains and trade. In the scope of this study, the boundaries of the socio-technical regime include production and consumption of food stuff; the sum of practices, skills, methods and processes, devices and machines, traditional and modern, used for the production and provision of goods and services to fulfil a distinct human purpose: healthy and balanced nutrition.

As aforementioned, by tradition the islanders lived on fish, crops and a few wild-growing plants (Anghie, 1993). With the intensification of topside diggings, where before there had been vegetation, the Nauruans lost their source of organic food, both cultivated and natural.

A second-order ecological effect consisted the disappearance of Noddy birds. Once they had roosted in the Tomano trees but by the 1980s they had lost their habitat (Manner et al., 1984). The de-alignment of the agricultural regime, as a result of these economic and ecological causes, was swift.

The state-operated mining sector has forged a new national dependence on the importation of processed and preserved foodstuff. Gowdy and McDaniel (1999: 334-336) summarized the emergence of the dominant socio-technical dietary regime, while acknowledging the social processes embroiled in its development: "Over decades, more and more foreign foods and manufactured goods were sold in shops... through a steady process of acculturation a native market for them was created... with increasing population, even fresh water had to be imported... the substitution of imported canned foods for local fresh products... and the adoption of other patterns of an industrialized-world lifestyle have adversely affected the health of the population".

Experience with imported glucose-rich foodstuff gave rise to new user preferences and nutritional practices; and the formation of a new dominant regime. The consequences of this dietary regime influenced on every native individual on the island. Reliance on salty and fatty tinned foodstuffs had shortened life expectancy, which in the mid-1980s was 49 years for males, significantly less than that of other Pacific populations (life expectancy at birth) (Taylor and Thoma 1985). "No one imagined the repercussions of cutting down all those Tomanos", a Former Government Official stated, "the Pandanus, the Breadfruits... all those trees... deforestation is our legacy, our sentence too... but who was in position to foresee it? Who would prevent it? It was the 1970's, the 1980's, things were going well for us... perhaps it was the government's responsibility" (personal communication, 2017).

The human capital in the island, in terms of technical education and skills, and in terms of healthy life expectancy – both common human capital indicators (see Cervellati and Sunde, 2005) – suffered of negligence and deterioration.

Taken as a whole, first transition-phase policies were characterized by a lack of overarching forward-looking government plans.

13. *The second transitions period: sectoral and societal decline*

1988 marked the turning point between the first and second transition periods. In 1987-1988, exportation of phosphate rocks reached some 1,500,000 tonnes (see figure 1 above), and this figure was on no occasion to be repeated. A second reason why 1988 was recognized a watershed in Nauru's history was the establishment of the Commission of Enquiry into the Rehabilitation of the Worked-out Phosphate Lands of Nauru (Weeramantry et al., 1988).

The disappointing outcomes of the national economic development strategy coupled with severely eroded lands, were undisputable. In response, the Commission of Enquiry discussed the costs and benefits of land rehabilitation alternatives and projects. The proceedings of the Commission made use of geo-morphological analyses and economic metrics (Weeramantry et al., 1988:1136-1137), and accordingly, from 1988 onwards "science-based policy interventions could have been expected, and much welcomed" (Senior Government Official, personal communication, 2017).

It was also in these years (1987-1989) that president DeRoburt, a champion of mining and a superintendent of an exportation-oriented economy, withdrew from office after two decades (Connell, 2006). Although the second transition period could have been a good time for reform, for better governance and for a corrected development path, the small state instead declined drastically.

The extractive minerals sector: Nauru Phosphate Corporation

The unfolding of unintended consequences associated with topside removal, although observed, evaluated and documented, failed to alarm policy makers and to guide future interventions. The mining sector stripped some 80 percent of Nauru's land area. The Republic of Nauru acknowledged (1999) that it "has affected the surrounding Exclusive Economic Zone... 40 percent of marine life is estimated to have been killed by silt and phosphate runoff". However, throughout the entire second societal transition, mining operations persisted.

In terms of the multi-level perspective, regime problems created windows of opportunity for the introduction of alternative excavation technologies, but the sector, being held by an apathetic government, did not experiment with novel mechanization and other innovations.

New land restoration technologies could have been introduced by the Nauru Phosphate Corporation but were not. The government and the NPC signed a A\$57 million reparation settlement with Australia, in addition to receiving A\$12 million from each of the United Kingdom and New Zealand, as part of the Rehabilitation and Development Cooperation Agreement (Hughes, 2004). A rehabilitation design was proposed to include various blueprints for rehabilitation trials. Yet plans did not materialize. Eventually these projects were mothballed (United Nations Development Programme, 2014).

Yet bolstered by a complaisant government, the incumbent socio-technical mining regime continued unobstructed. The harvest of phosphates, diminishing by the year, went on. Unsustainable development ventures and poor land use resulted in calamitous consequences and the nearly complete ruin "of the island's ecosystems" (Weeramantry, 1992:31).

Alterations in the workings of the sector were desirable, but their initiation was at the discretion of the government, not technological niches. To expect niches and innovation networks to challenge the dominance of the Nauru Phosphate Corporation was nonmaterialistic. "Nauru is far too remote, far too centralized, far too small to provide conducive circumstances for so-called niches, or startups, or radical innovations... or anything of that sort", an interviewee stated. "To deviate from existing regimes, to deviate from rules... from the way of doing things? That was not in our culture. I'm not sure it is today. There was hardly anything radical in Nauru... except the desolation of (its) environment" (Senior Official, Nauru Government, personal communication, 2017).

"The government decides on everything" a UNDP Specialist to Nauru added, "every single thing... the allocation of resources, and aid, and investment in machinery and in training, the coordination of labor... those niches of yours (of the multi-level perspective), they are not the central source of changes in socio-technical regimes, in sectors... they don't exist" (personal communication, 2017).

Fiscally, a deficit in the exportation of phosphates coupled with operational losses by the NPC led to the accumulation of debt, which pushed the Nauruan Parliament to declare in 1996 that recovery of the phosphate deposits in the country has "ceased to provide adequately for the economic needs of the citizens of Nauru" (Asian Development Bank, 2010:6). "Austerity measures", as stated by the Asian Development Bank (2010:6), "should have followed, but did not".

"We were a simple folk, hapless, vulnerable to abuse... we trusted our leadership to do what's right", a Former Senior Official of the Nauru Government bemoaned (personal communication, 2017).

The national financial sector: Nauru Phosphate Royalties Trust

Mismanagement was also endemic in the national financial and accounting sector and the operations of the NPRT. Little intervention was made to correct these malpractices. The NPRT's performance was characterized by inept, and at times corrupt, financial management (Asian Development Bank, 2008; Senior Government Official, personal communication, 2017).

Every component of this socio-technical constellation was erroneous. Poorly trained staff, poorly set standards and norms, inadequate, incomplete or otherwise missing tools to evaluate financial risks, scrutinize investments options by appreciating their expected rate of return, or calculating their volatility, track assets, analyze investments performance and assess market trends. The national financial sectors failed to review suggestions to improve its investment strategy, to diversity the portfolio. "Investments by the NPRT", a former official said, "resembled something of a heedless shopping spree... a squander of our financial capital at a spectacular pace" (personal communication, 2017).

Although government institutions have always been unduly reticent about their finances, and while comprehensive financial figures for the NPRT are hard to obtain – according to Malik (1989), much of the financial records were destroyed – Toatu has indicated that the trust fund was valued at about US\$1.3 billion in 1990. At the end of the second transition phase, in 2004-2005, NPRT's value has declined to A\$300 million (Toatu, 2004). "Sound financial management is not a particularly

strong property of the government", a Senior Official of the Nauru Government admitted (personal communication, 2017).

In a spate of poor decisions, NPRT executives subsidized the operational expenses of Air Nauru, a local carrier comprised of an aging fleet of five 737s, which suffered losses of some \$US250 million. The NPRT also endorsed a failed 1993 West End musical, featuring the life of the Italian artist Leonardo da Vinci, which was composed by one of Nauru's financial advisors, losing at least \$US2 million (ibid). "I never got to see that play", a Senior Nauruan Government Official noted, "only the poster and the reviews... when you come to think of our own fate, it's quite symbolic" (personal communication, 2017).

Purchasing luxurious real-estate properties, including hotels in Fiji and in the Marshall Islands, the NPRT then left these assets to deteriorate. Some properties have been under construction for nearly two decades (van Atta, 1997; Gowdy and McDaniel, 1999).

"Prime pieces of property have languished, undeveloped, for years", *The Economist* stated in a 2001 piece, "the government of Fiji repossessed a hotel in its capital that Nauru had bought years ago and then left to rot... Another hotel, in the Marshall Islands, has been under construction for more than 20 years... In 1993, the man brought in to run the Nauru Phosphate Royalties Trust, resigned after just two months, complaining that it was on the brink of insolvency through mismanagement... the root cause of the trust's difficulties, though, has been the government's failure to own up to Nauru's reduced circumstances".

"That's about right", a JICA Pacific Development Specialist well-familiar with the diagnosis validated. "It is a failure of governance of key sectors and bad economic organization of the island's affairs and very tight resources... a ruin of all productive assets, natural and human" (personal communication, 2017).

Reflecting on the Nauru Phosphate Royalties Development Trust operations in the 1980s and 1990s, one official in the government of Nauru agonized, "we succumbed to the trap of plenty... the resource curse... phosphate rents sponsored a welfare state, free of taxes, with outlandish and extravagant public enterprises, such as the Nauru Air Corporation, and very poor, very foolish real estate investments... totally decadent" (personal communication, 2017). Another Senior Official added, "we could have, no... please correct this... we must have invested the phosphate money in the

education of our children, the build-up of skills, of local industries... these malpractices, this outrageous negligence dragged the country into unnecessary shambles" (personal communication, 2017). A third interviewee stressed, "unskilled staff is destined to take bad decisions" (Official, Nauru Government, personal communication, 2017).

In terms of the multi-level perspective, the financial sector in the second period saw many multi-level interactions. The local financial system experienced growing problems on technical and economic dimensions. These sectoral problems, as in the case of mining, created a window of opportunity for the breakthrough of a new national accounting system, improved techniques and monitoring, which were in use in other countries. Yet, the dearth of niches in the sector prevented a regime change.

The agricultural and dietary regime

The agricultural and nutritional regime saw the continuation of landscape developments from the previous period. In the second transition period, it was already abundantly clear that survival on the island hinged on the importation of processed foodstuffs (Gowdy and McDaniel, 1999). Also apparent were the repercussions of excess consumption of sugars and fats on members of the native society. Non-communicable diseases, namely type 2 diabetes, heart diseases and kidney failures, were rampant (Hughes, 2003; Hughes and Lawrence, 2005). So much so, that in the 1990s Nauru was reported to have the poorest public health conditions in the Pacific region (Nishiyama, 2012).

At the height of the second transition period, 40 percent of the islanders had type 2 diabetes, the highest level in the world (King and Rewers, 1993). This figure was to grow to more than 50 percent in the following decades (Win Tin et al., 2014). In terms of mean body mass index, in 2010 islanders stood the most overweight people globally, with 97 percent of men and 93 percent of women to be either overweight or obese (The Independent, 2010).

The World Health Organization reported heart and kidney failures as additional causes of disease-related mortality (WHO, 2005). According to the World Health Organization (2005), life expectancy in Nauru (in 2009) stood at 60.6 years for males and 68.0 years for females.

"The government bartered phosphate-rich fertile lands for revenues, at the expense of our indigenous diet", a Government Official indicated, "it imported substitute products, transformed behaviors and reformed our lifestyles" (personal communication, 2017).

Outcomes of the dominant dietary regime were tragic, and the institutional management of accumulated effects of these outcomes was unavailing, at best (Ulijaszek, 2005; Hawkes, 2006). The government of Nauru has never held precise health statistics. Government departments had no plans, no policies, and little money to tackle these issues (Government Official, personal communication, 2017), and existing plans underlined the limited civil service planning capacity (Asian Development Bank, 2008).

By 1995, in the midst of the second transition period, the population had reached some 10,000 inhabitants, a substantial inflation of the original 1,000 to 1,500 people of the previous century. This is also a figure significantly larger than what the island can carry (Gowdy and McDaniel, 1999).

The Asian Developing Bank (2008:2) portrayed the results of poor policy interventions in Nauru's sectors as follows: "population trends, coupled with decreasing available resources and their mismanagement, had left Nauru with overcrowding, poor sanitation and hygiene, poor nutrition, unreliable water and electricity services, a degraded environment both onshore and offshore, lack of jobs, and lowering of the education and skills base". A Former United Nation Development Program Specialist to Nauru lamented, "it is a manufactured tragedy, completely manmade and unnecessary" (personal communication, 2017).

Consequently, accounts of societal transitions in Nauru often culminate in a somber tone that reads like a eulogy to the indigenous people. Connell (2006) dubbed his analysis of the island "the first real failed Pacific state". *The Economist* (2001) published its own obituary under the title "paradise well and truly lost". Kendall (2009) referred to Nauru as a "doomed island".

Such fatalistic summaries may be overstated. Institutions continue to design strategies, and one commentator observed: "the people of Nauru have not given up hope for the future of life on the island" (Feary, 2008:239), international aid agencies have shown interest in assisting the small state (Asian Development Bank, 2008;

2010), and new policy vehicles have been designed to implement more sustainable and better-planned sectoral and societal transitions.

Map 4. Satellite image of Nauru, contemporary. Source: National Geographic MapMaker Interactive (Open Source).



14. *Recovery and concluding remarks*

Two thousand and five marks a second turning point in local history, ending the second transitions period. Until 2005, institutional recognition of policy planning gaps, ill-fated interventions and their associated devastating results, was inconsistent and unsystematic. In 2005, however, the Nauruan government embarked upon an attempt to challenge dominant socio-technical instalments in the environmental, economic and social domains.

The need to overhaul regimes, to develop new policy delivery systems, to introduce new technologies and techniques in the public and private sectors, and to fashion a range of structural reforms was identified and subsequently pursued (See Asian Development Bank, 2008).

This effort, framed as the National Sustainable Development Strategy (NSDS) was, in the words of President Stephen (Nauru Government, 2009), a response to government's earlier mismanagement and mistakes, as well as a manifestation of "self-reflection and an openness to new ideas". The NSDS was designed to facilitate a strategic discussion between the government and the people of Nauru, to identify and prioritize development paths and ventures, to promote structural reforms and to set policy objectives, a roadmap and implementation strategies (Asian Development Bank, 2008; Nauru Government, 2009).⁶² In response to failing socio-technical regimes, the NSDS called attention for structural reforms.

The extractive minerals sector: Nauru Phosphate Corporation

Having learned from past experience and with a better appreciation of mining and its penalties, the government restructured the Nauru Phosphate Corporation, creating Republic of Nauru Phosphate (RONPHOS). Designing what was hoped to be a more

⁶² With the assistance of AusAID and the Asian Development Bank, the government developed the NSDS taking a participatory approach, holding 38 formal group meetings (including 21 district meetings), and several private meetings and informal discussions, with 550 participants. A household opinion survey – drawing on a random sample of 20 percent of the 212 Nauruan households – was conducted to support decision-making (Asian Development Bank, 2010).

effectively-run industrial complex and an economic growth vehicle, a new managerial team was put at the helm of the state-enterprise.

The efficiency of the mining apparatus had been improved, the government commissioned the renovation and maintenance of excavation machinery and moorings, and the upgrading of processing facilities. These interventions led to an increase in the exports of phosphates to 600,000 tons between 2007 and 2009 (Anon, 2010).

Dividends from RONPHOS were deposited in the sovereign fund with the intention of allocating them to the land owners, making economic development more inclusive and socially sustainable.

At the same time, and aiming to reduce the grip of RONPHOS on the local economy, diversification reforms were executed to encourage small businesses to assume a bigger role in the development of the private sector. In 2008, the Nauru Private Business Sector Organization (NPBSO) was established.

The national financial sector: Nauru Phosphate Royalties Trust

Similarly, the NPRT was restructured. First, the government mandated the transfer of the remaining assets and liabilities to a Landowner Fund. Then, a new Public Trust Fund, the Nauru Intergenerational Fund, was listed. Corporate governance arrangements followed and a professional funds management team appointed. By adhering henceforth to international financial management standards and applying better asset management systems, the Nauru Intergenerational Fund was ordered to provide the parliament and the people with transparent accounts of its value and portfolio.

The agricultural and dietary regime

Special attention was given to the socio-technical agricultural-dietary regime. To counter the costs of unhealthy nutrition, and to curtail the susceptibility of the local food market to the ebb and flow of international commodity markets, the government aimed to reinforce local food production with some initiatives in agriculture and

farming. Livestock was purchased and distributed to households and encouragement was given to the cultivation of local fruit and vegetable gardens in the form of small subsidies. In 2009, a central farmers market opened, with between 25 and 42 vendors attending once a week.

However, "the initiative lost momentum since then", an Official confirmed. "You shouldn't keep your faith in such bottom-up initiatives" (Nauru Government Official, personal communication, 2017).

In these selected sectors, the NSDS put particular emphasis on the development of human capabilities and planning at the sectoral and national levels. A new vehicle for policy planning, implementation, monitoring, evaluation and learning with regards to national priorities was deployed. The Asian Development Bank referred to this, "learning by doing" approach, with tall praises.

Social development has been achieved since then. The provision of water, energy, telecommunications, education and public health have all improved (Nauru Government, 2009). The NSDS turned the page over decades of unsustainable practices, launching, perhaps, a third, more sustainable, transitions period.

"In the four years since Nauru put this plan into place", President Stephen claimed in the NSDS Revised Version (2009:3-4), "(it has) made remarkable progress... power is more reliable, the amount of clean water being produced and harvested has increased... There have also been improvements in the areas of education and public health... Better school facilities, more qualified teachers and a more professional curriculum will help prepare the next generation of Nauruans for the challenges of the 21st century".

A Former Senior Government Official begged to differ. "Progress is not remarkable enough... maybe it's in-the-eye-of-the-beholder sort of thing" (Senior Official, Nauru Government, personal communication, 2017).

While the outcomes of these interventions will become lucid in the fullness of time, a revision of the NSDS held in 2009 acknowledged the principal determinants that hindered some NSDS milestones to date from being realized. These included capacity constraints "in many areas of government including in finance and audit, law and order, development planning and public administration" (2009:6). A lack of coordination; "blurred and overlapping responsibilities... resulted in tasks falling

between the cracks and not being coordinated across sectors" (2009:6), ambiguous milestones; "not clearly articulated in the 2005 NSDS making implementation by relevant agencies difficult" (2009:6), and incoherent land arrangements; "a major obstacle to new development projects in Nauru" (2009:6).

A commentator reflected, sarcastically, "these targets... they are equivocal... this is by design... intangible targets are easier to meet... this is not unique to Nauru" (Former JICA Specialist to Nauru, personal communication, 2017). Furthermore, a number of critical sectors and crosscutting issues were underdiscussed in the 2005 NSDS, including ecosystems management, a need for a suite of environmental management frameworks, and environmental impact assessment tools (2009:7). Similarly, land management issues were not considered (2009:8).

These methodological and topical breaches reflect lingering adaptive policy design and implementation gaps. Persistent ambiguities with regards to setting sustainable development goals, and difficulties in the administration of socio-technical regimes, will continue to impair sustainable societal transitions on the island to this day.

On the translation and operationalization of the notion of sustainability, interviewees were of one mind. "Ask ten different functionaries to define sustainability, or sustainable development, and expect ten different explanations" (Senior Government Official, personal communication, 2017). "What development strategy emerges from the idea of sustainability I do not know. The concept does us little service. It is an awkward term. It does not lend policy advice. Because we spent so much time debating it, this ambiguity is obstructive, plain and simple" (ibid).

Unsustainable transitions in Nauru

An analysis of transition periods in the Republic of Nauru demonstrated that in the context of small development island states, landscapes and macro-level priorities coupled with government interventions hold an excessive sway over the design, set-up and re-configuration of socio-technical regimes. The analysis also shows that transitions are not only technical, but social and economic.

Of the four transition pathways typology, sectoral chronicles of Nauru sit well with the first *transformation pathway* scenario. Regimes, sectors and industries transformed

at the desires and whims of government institutions. Niches have never ripened to challenge them. Pressures from the landscape and from the local government remained the predominant forces driving changes.

The study illustrates the considerable extent to which national institutions have driven sectoral and societal transitions. More specifically, the analysis presented the extent to which poor policy design of socio-technical regimes led to social decline in the island. In the words of Marks (2004), management, or rather mismanagement, helps explain the downward spiral of Nauru, once, one of the world's wealthiest states, now a basket case in a region of struggling Pacific island states.

Transitions and the alignment and de-alignment (collapse) of sectors in Nauru suggested that technological niches did not mature to challenge socio-technical regime; that socio-technical regimes were designed by the work of the government (some inherited from the colonial forces); and that the socio-technical landscape influenced on the operation of regimes.

Certainly, exogenous factors at the macro level influenced policy-making extensively. "Westernization", as Gowdy and McDaniel reckoned (1999:336), "would have come to Nauru without the presence of phosphate, just as it did to other Pacific Islands". But institutional responses in the following decades after independence were not wholly path-dependent. Nauruan institutions governed socio-technical regimes which slowly stripped the island of its assets, first natural, then financial and lastly human.

The central point of the analysis is that transitions came about through the interaction and dynamics at the macro and meso levels, and with state interventions. It was also clearly demonstrated that transitions can be detrimental to society.

The recent attempt in Nauru to alter socio-technical regimes reflects two deeper problems confronting government institutions bidding to steer societal sustainable transitions. First, the imprecise nature of sustainable development and its operationalization in the context of small developing island states. And second, persistent gaps in the use of comprehensive frameworks for policy planning and public administration, including the multi-level perspective in its current form.

To this end, when the multi-level perspective was discussed with interviewees it was found incomplete.

But are these concluding remarks and sustainability transitions obstacles representative of other small developing island states, of larger developing island states? In other words, is the *transformation transitions pathway* of Nauru typical of SIDS? Is Nauru comparable to other developing island states?

Some critiques refer to Nauru as "a cartoon worst case... a parable... something that captures the imagination of the reader" (Development Specialist, personal communication, 2018). Another contributor insisted that "Nauru is a mining town, there is no difference between the state, the economy, the extractive mineral sector, agriculture, and everything else... one cannot draw any significant demarcation between the state and the mining industry and the phosphate royalties trust... the land is the phosphate depository, phosphates are the source of revenues, and so on... political parties give way for village politics... it's all family ties and all that" (UNDP Specialist, personal communication, 2017).

Granted, Nauru appears to be an exceptional case study in its circumstances and sternness of development outcomes. This should not be seen as a methodological drawback. If one purpose of the analysis component is to expand the geographical, cultural and social terrain of transitions theory, Nauru stretches it the most.

Interestingly, the case study does not render the multi-level perspective useless. On the contrary, it demonstrates its relevance while challenging some of its suppositions. For the absence of niches assisted regimes to maintain their momentum, their stability.

As Lachman predicted (2013:274), "the rapid rate of development, population growth, and urbanization in developing countries which is favored over sustainability transitions... (is) implicitly strengthening regimes to a degree which is rarely the case in developed countries".

In other words, the locus of radical innovation, the most important source of change in socio-technical regimes (Kemp et al., 1998; Geels, 2002a,b; Smith et al., 2005) and the source of seeds for systemic changes (i.e. niches) may not exist in small developing island states, yet this very factor could explain why sectoral and societal transitions turned unsustainable.

At the same time, sectoral transitions in Nauru, more socioeconomic than technological, do call for a modified transitions framework. Other case studies, of

larger developing island states, should assist in probing further into these necessary adjustments.

Jamaica

15. *Historical background and conditions at independence*

The only way to understand sectoral and societal development undertakings in Jamaica, "is to anchor them in the colonial history and economic structures of the country" (Professor of Economic History, UWI Mona, personal communication, 2017).

One of many European colonies in the Caribbean, history matters considerably in the study of the social predicaments and economic woes of modern, post-independence Jamaica. Attending to this branch of history opens a frontier of socioeconomic causalities, and complex historical dynamics, affecting the life on the island today. Historians would define this Jamaica's path-dependencies (Mahoney, 2000).⁶³

Yet, as in the case of Nauru, this study pays more credit to sovereign national institutions, the ranks of an emancipated civil service, acting politicians and elected governments, to transition-out of deterministic structures and patterns. In other words, the doctoral research posits that "there is always an alternative" to any specific institutional, sectoral or regime configuration (Former Senior Government Advisor, personal communication, 2017).

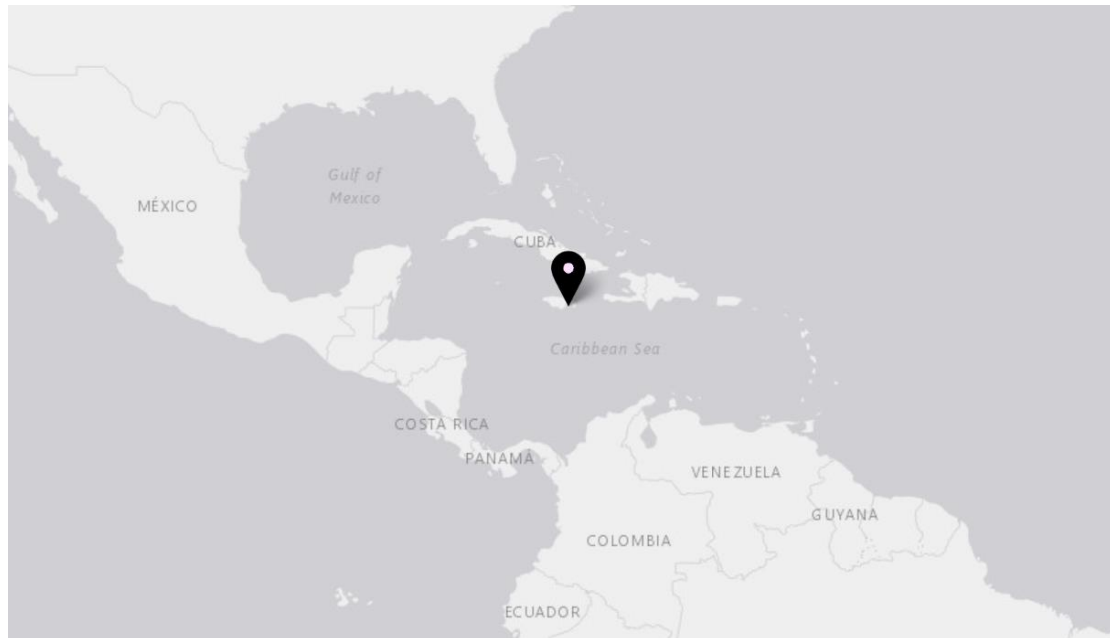
That being said, understanding the Jamaican landscape before independence is essential to analyze the operations of governments after independence, as well as the rigidity of regimes and sectors of high socio-economic importance, and the work of niches, if they ever existed.

Geographically, Jamaica is the third largest island in the Caribbean Sea, south of Cuba (18°15'N 77°30'W), with a land area of 10,831 km², a water area of 160 km², a mostly mountains terrain and a narrow coastal plain. The highest point on the island is the Blue Mountain Peak at 2,256 meters. Regionally, it is strategically located between the Cayman Trench and the Jamaica Channel – the sea lanes for the

⁶³ Mahoney claimed (2000:507) that "path dependence characterizes specifically those historical sequences in which contingent events set into motion institutional patterns or event chains that have deterministic properties".

Panama Canal (see maps 5 and 6 below). Its natural resources consist of bauxite, gypsum and limestone deposits.

Map 5. Location of Jamaica. Source: National Geographic MapMaker Interactive (Open Source).



When Columbus arrived at Jamaica at 1494, to bring it under the Spanish crown, the country was occupied by Arawak and Taíno people. In 1509 Spanish conquistadors established Sevilla La Nueva (New Seville), their first settlement on the island⁶⁴, and subjugated the indigenous Indians. By toil and diseases (smallpox primarily), the latter perished, and in their replacement, the Spanish imported African slaves.

The Caribbean Sea remained a district of European expansionism and a strategic destination for empire-building. Prospect of wealth for some European powers laid in "developing trade in gold with West Africa, and in sugar with its own plantations in other countries" (Sherlock and Bennett, 1998:53). These prospects, propelled the extensive plunder of cultures and lands, and the "relentless search for labor" (ibid:60): a quest for natural capital, raw materials, rare metals, minerals and fertile lands, complemented with cheap labor.

⁶⁴ The Spanish will abandon New Seville in 1524 to establish Villa de Santiago de la Vega, later renamed "Spanish Town".

Map 6. Jamaica. Source: National Geographic MapMaker Interactive (Open Source).



In 1665 the British took over the island from Spain, which formally ceded the territory five years later, in 1670. During British-Spanish hostilities, African slaves escaped the colonial settlements and Spanish masters to resettle in the mountainous areas of Jamaica and establish independent communities, based on subsistence agriculture. They will be known as Maroons.⁶⁵ After the British consolidated their control of the island, they invested further and considerable resources into the development of the slave trade.

The sugar-and-slave plantation economy

In the late 17th century, the cornerstones of the socioeconomic structure for the next few centuries were placed. The British initiated the sugar-and-slave plantation economy, shaping a social system that was exclusively devoted to making money by manufacturing sugar products, abusing the land and the Africans, featuring, primarily, drudgery, privation and misery. Sherlock and Bennett (1998) attended to the trauma of the mind of African laborers – the intangible afflictions of de-humanization, being a

⁶⁵ For more information see Besson, 2015.

captive and then a commodity, sold by people of their own race (echoing Fanon, 1965, see Part 1), with devastating long-term socioeconomic knock-on effects.⁶⁶

The establishment of the sugar-and-slave economy transformed Jamaica to a farming country, referred to in literature a "monoculture", enjoying the fruits of extensive flat, fertile plains, watered by many rivers (Campbell, 2001). Africans, as instruments of production, were forcefully transplanted into this landscape, brutally and unwaveringly.

In terms of the multi-level perspective, an omnipresent network of crown government institutions, not firms, nor local communities, certainly not local technological niches, have molded all structures and regimes on the island, configured all economic sectors, oversaw the development of markets, production methods, trading systems and behaviors, imported and substituted human capital, invested in the technological apparatus of exploitation of natural capital assets.

Jamaica, since the 17th century, stood to represent the New World plantation; a combination of imported subjugated labor, European technology and management, American plants, soil and climate (Black, 1961). Economic success coupled with human suffering followed. "The number of sugar mills operating in the island increased from 57 in 1670 to 419 in 1739 and 1,061 in 1786... the landscape and the skin color of most Jamaicans testify to the plantation's radical transformation power" (ibid:92).

Satchell (2001:243) argued that "in the slave-sugar plantation economy, the prevailing thesis is that innovations were few due to planters' indifference and apathy; it is charged that they were inefficient producers. The argument goes on to say that planters' conservatism forestalled them from taking advantage of technological innovations and improvements that were developing in agriculture in Britain". A similar view was proposed by Ragatz (1963), Williams (1964), and Pares (1970).

Furthermore, social capital, networks and trust – a lubricant of well-functioning markets – were smashed under the heel of imperialism. Instead, a culture that was

⁶⁶ According to Sherlock and Bennett (1998) this was when Jamaica was transformed into a junction; a place of friction and tension; a frontline, between the Europeans and the Africans. It was the British, as colonizers, dispossessors and oppressors, who freighted West Africans – indigenous people of the Congo, the Akan, the Ashanti and the Ibibos – to the island as cargo, as property.

corrupt, incompetent and lacking any sense of social responsibility emerged. In terms of the multi-level perspective, this was no climate conducive for organic, domestic, innovation.

In the wake of the 19th century, enslavement and delinquencies drove resistance to the colonizers. Maroon communities proved that autonomy and self-governance were not merely conceivable but possible, and their endurance inspired frequent slave uprisings (Robertson, 2001). In 1832 insurrectionists led raids on chapels and plantations. They burned-down sugar cane fields and properties. The tide of public sentiment, in both Jamaica and in mainland Britain, began to turn against the planters and "public support for the abolition of slavery was growing" (ibid:224). On 28 August 1833 the British parliament passed the Act of Emancipation which came into effect on 1 August 1834. This was commemorated across the colony with the cry "the monster is dead" (ibid:226).

An important landscape development, by the mid-19th century freedom of servitude has been realized, yet it was freedom without an economic base, devoid of social recognition, and empty of the provision of medical and educational services. "Free villages had been established, but cholera, floods and droughts ravaged Jamaica" (ibid:4).

Mortality rate among children was frightfully high. In the year 1859, long after the colonization of the island, an American journalist reported that the government provided a sum of 2,950 pounds for "the education of children between the ages of ten and 15... one shilling per child for the year. Short of capital, the people shared their labor. Their benevolent added fellowship, and a measure of social security. From board houses surrounded by fruit trees, mango, avocado, ackee, banana, coconut, coffee, came school teachers, the clergy, the working class" (ibid:6). A cry for aid from the British was cold-shouldered. This was hardly a recipe for progress.

In addition, a shattered social structure endured through. British rule de-humanized the African slaves and, in this manner, distorted the notion and functions of the nucleus family as an elementary, fundamental, social unit was eliminated. In effect, a British slaver embodied the roles of the 'father' as a provider of discipline and necessities. The natural, biological, father and mother were demoted to breeders.

It was harder to break free of these shackles and harder yet to shape an alternative, new society, of a unique value system, religious beliefs, self-concept and cultural traits, not to speak of free markets.⁶⁷

From the parliament act of August 1833 and for the next 128 years, until full independence in 1962, emancipation prompted only partial relief.

Emancipation

Emancipation alleviated some difficulties yet brought little socio-technical change. The monoculture moguls of the sugar, banana and coconut plantocracy pursued no responsibility for expanding the educational and occupational opportunities of the new freed Jamaicans. "No general system of public instruction has been introduced in Jamaica, and it is surely unreasonable to expect that this people, or any other people, could acquire a knowledge that has never been placed within their reach" (Sherlock and Bennett, 1998:32).

Acts of oppression and unjust tribunals were recorded, and religious and political rights were yet infringed upon. The island's ruling class remained apathetic to declining social circumstances and ravaging unemployment rates, sentencing African Jamaicans to destitution and crime, and restricting their access to health care services and educational development. "Crime was fearfully increased and applications for parochial and private relief prove that multitudes are suffering from want, little removed from starvation" (ibid:254).

In the late 19th century and early 20th century, Jamaicans welcomed North Americans to the Caribbean Basin. Influenced by landscape pressures; a growing appetite for labor and resources of the United States, Jamaicans sought job opportunities with the banana estates of Central America, the sugar plantations of Cuba and the commission of the Panama Canal. They were part of a larger, regional, system of trade and transport.

⁶⁷ Rastafarianism was such an attempt. Rastafarians take their name from the late Ethiopian emperor Ras Tafari, otherwise known as Haile Selassie, a self-proclaimed incarnated messiah of the bloodline of biblical King David. He provided Jamaicans with a sense of ethnic distinctiveness and racial identity (see Barret, 1977).

However, wealth did not trickle down to the local society. Large regional projects paid similar salaries to those paid through the agency of plantation managers (Beckford, 1972). At the same time, investment in education and skills remained insignificant. Literacy figures at the Jamaican Parishes – the island is divided into 14 of them – indicated the government's neglect of public education which reached only a small share of the populace. "Most of those who wished to learn to read attended classes once a week, at Sunday schools, where their only reading text was the Bible. Education was not free... it was generally accepted that laborers had no need for literacy" (Sherlock and Bennett, 1998:271-272). Absent technical education, and with no institutional strategy for peasantry guidance and support, the economy did not take off. Jamaicans, now emancipated, responded to scant employment opportunities by leaving the island.

Jamaica and its people, as this study puts in the followings, have risen and fallen together. The flee of qualified, intelligent, entrepreneurial, self-motivated men and women; the loss of talent; a diminishing human capital base, will continue to impair the island to this day (Senior Government Official, personal communication, 2017). During the decade 1911-1921, 46,000 people founded a home in the United States, 45,000 people stayed in Panama, 20,000 parted to Cuba and some 43,000 went to other areas (Black, 1961).

In 1944 Jamaicans were granted a new constitution and, coming on the heels of independence, on 20 November 1944, they held the country's first general elections. "For the first time all the Jamaican people became involved in making the decisions, setting the directions and implementing them" (Sherlock and Bennett, 1998:370).

Moments before the general elections of 1944, Alexander Bustamante, "more of a politician than a statesman" (Senior Government Official, personal communication, 2017), had broken with the People's National Party (PNP) to establish the Jamaica Labor Party (JLP). Norman Manley, the leader of PNP, "Jamaican's closest chance to having a philosopher-king at the helm" (ibid), lost to Bustamante's JLP. While Manley campaigned for universal suffrage and self-government, Bustamante, skeptical of the necessity of full independence, organized labor unions to garner force.

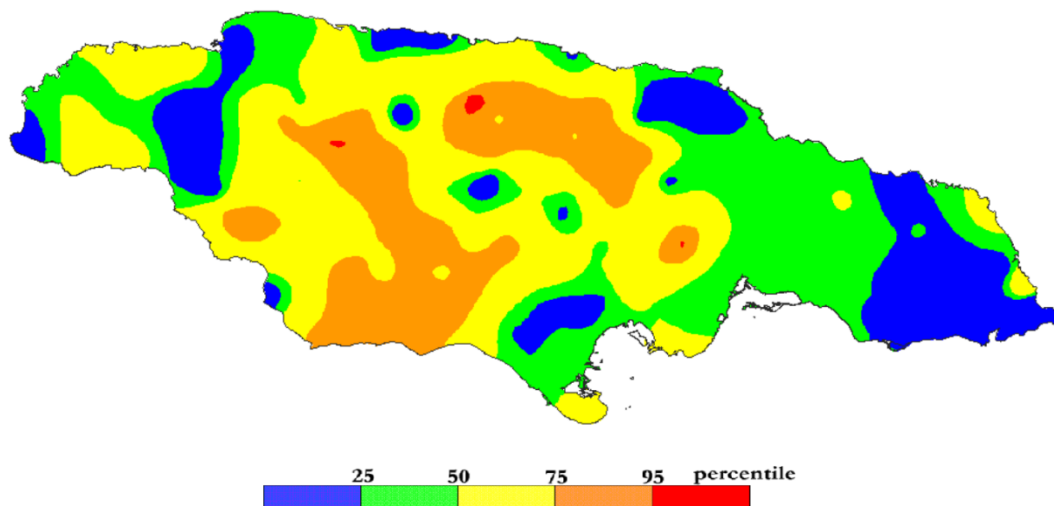
Nevertheless, the advancement toward self-government sustained. "In 1958 Jamaica became an independent country in all internal matters. They gave children greater access to secondary education. They gained an understanding of democratic

principles. Bustamante and Manley demonstrated their full acceptance of the two-party system" (Sherlock and Bennett, 1998:373). After two centuries, the 1940s and 1950s were years of virtue for Jamaica, one *annus mirabilis* followed another.

The Bauxite discovery, government interventions and enduring inequality

In 1942, a Jewish merchant, upset with a failing, infertile, crop field in St Ann parish had a clod of his crimsoned earth analyzed. A local geological survey revealed the island's bauxite reserves. A complete national survey was later commissioned. An initial assessment indicated some 5 million tonnages of bauxite. A more rigorous assessment registered a stock of some 500 million ton of bauxite – an aluminium ore and the world's main source of aluminium. After successful consultations with Canada's Alcan and American Reynolds and Kaiser, in the 1950s, foreign aluminium firms started to harvest approximately 5 million tons of bauxite every year (see map 7).

Map 7. Bauxite Deposits in Jamaica. Source: A Geochemical Atlas of Jamaica (Lalor, 1997).



The country of Jamaica became one of the world's leading bauxite exporters. An unfavorable agreement between the mining companies and the Jamaican government was amended in 1957 with a tenfold increase in paid revenues, from 352,000 GBP to 3,700,000 GBP in 1960-1961 (ibid:380).

Mining, inevitably, came at the expense of cattle rearing and similar pastoral economics. Jamaica, comparable to all islands, is in chronic short supply of lands (see Part 1). Competing land uses were, and still are, a concern (Former Senior Government Official, personal communication, 2017).

Some institutional mechanisms were put in place on the part of the government to minimize potential ecological damages while guaranteeing that the broader population benefits from an emerging industrial niche. "By law, the companies were required to keep agriculturally productive land in production until it was needed for mining, and to restore the mined-out land as far as possible to its original level of agricultural productivity. Further, by programs of industrial relations and of community development, with special attention to education, and by ensuring that employment was open to qualified Jamaicans, men and women, at all levels, the bauxite companies eliminated racial discrimination in the industry" (Sherlock and Bennett, 1998:380). "Jamaicans were finally in control of their lands and people" (Former Senior Government Official, personal communication, 2017).

Initially, the management of bauxite mining was an exemplar of good governance, seizing development opportunities in a responsible, farsighted manner.

This practice was not in isolation, as the island had more to offer. In the 1950s Jamaican Tourist Board resolved to capitalize the pristine turfs of Ocho Rios and Montego Bay, transforming the gracious curvy coastline and warm waters into a touristic hub. Since then, the tourism sector matured into a significant and continuous revenue source of the northern parishes. "In 1950 just under 75,000 tourists came to Jamaica. Three years later the arrivals had trebled. Between 1950 and 1954 the revenue from tourism almost doubled, rising from nearly 3 million GBP to 5.7 million GBP" (Sherlock and Bennett, 1998:381).

At the socio-technical landscape, unemployment endured, and with it, social dissatisfaction. A committed, energetic, fervent government attempted at the challenge, engaging with several regimes, passing the Textile Industry Law and the Hotel Law in 1944, the Pioneer Industry Law in 1949, initiating the Industrial Development Corporation in 1952, and legislated the Industrial Incentives Law in 1956, to create new employment opportunities and stimulate further industrialization and manufacturing activities in the country.

A robust civil service backbone was the next item on the public agenda, so essential to push through reforms and oversee policy execution. The government pursued the modernization of the civil service by transitioning it from a "Euro-centered service ornamented with ceremonial swords and helmets into an innovative, creative public service of bright young Jamaicans eager to develop their country's natural resources, to build a strong economy and a united nation" (Sherlock and Bennett, 1998:383). Of

the hallmarks of this endeavor are the Central Planning Agency (today, the Planning Institute of Jamaica), the Bank of Jamaica, and the Central Bureau of Statistics. This transition is known in Jamaica as the "silent revolution" of planning and strategy making (Former Senior Government Official, personal communication, 2017).

A painstaking approach to national planning was practiced. Officials observed and studied the development experiences of other Caribbean states to learn from them, namely, Puerto Rico, which emerged independent from the Spanish rule and pioneered a set of policies to encourage industrialization and economic progress (ibid).

For a limited span of time, these efforts gave rise to an entrepreneurial class in Jamaica, and to new ventures. Economic growth followed. "The record of economic growth for the period 1945-1960 is impressive by any standards. Between 1945 and 1960, the sale of electricity to industry doubled to 50 million kilowatts. Between 1943 and 1960 national income per head at current prices grew from 32.50 GBP to 128 GBP, while gross domestic product increased from 70 million GBP in 1950 to 230 million GBP in 1960. This rate of growth exceeded by only two other countries, Puerto Rico and Japan" (Sherlock and Bennett, 1998:385).

But, left unattended, gaps between socioeconomic strata grew larger. Edward Seaga, a future Prime Minister, asserted "the haves were getting richer and the have-nots were getting poorer" (ibid). In *Kingston, Jamaica: Urban Development and Social Change 1692-1962* (Clarke, 1975), Clarke noticed that regardless of economic growth, employment in the great capital of Kingston stagnated, with no change since 1943. Bustamante warned that that Jamaica is sitting on the brinks of volcano. Urban density increased and social circumstances deteriorated. Men coming to Kingston searching for job "fell into gambling and stealing... women worked as domestic servants, others became prostitutes or scuffled for a living".

The governments of the 1940s, 1950s and 1960s were trying to apply some remedies. In these decades, the Institute of Social and Economic Research, the Institute of Education, and the Faculties of Social Sciences, Natural Sciences and Medicine in the University of the West Indies were founded. Earlier yet, in 1929, the state introduced the 20-year Land Settlement Program of 1929-1949. The government would buy longstanding properties for the purpose of subdivision and redistribution (by sale) to small Jamaican settlers, to "make the land absorb as many people as possible, in an environment of declining employment opportunities for the

masses" (Bartley, 2001:325). The program also intended to "prop up the plantation sector" (ibid:327).

These were insufficient measures. Bartley referred to the poor quality of the land offered for sale, a shortness of proper roads to connects lands with other forms of capital, the absence of a reliable market for settlers to trade-in, and degraded, or non-existing, water supply infrastructures, as the causes for failure of the program to realize its goals.

With this social, economic and environmental collection of feats and failures, assets and inequalities, with "a strong and enthusiastic civil service, not insignificant institutional skill and with great gusto" (Professor of Economics at UWI Mona, personal communication, 2017) that the Jamaican people approached to full independence. On 5th August 1962 the Jamaican flag substituted the Union Jack. The following day, on August 6th, the Parliament convened its first session. Further government intervention followed.

Independence

Independence at 1962, as the *History of Jamaica* (1961), *The Story of the Jamaican People* (1998), and *Jamaica in Slavery and Freedom* (2001) disclose, was not a result of civic unrest, uprising or military struggle of sorts. It was a rather friction-free progression from emancipation (1834) to self-government (1944) to independence (1962).

The colonial authorities were as anxious to throw away the yoke of domination of colonies as colonies were anxious to become autonomous. But not everyone commits to this narrative (Senior Government Official, personal communication, 2017). While some histories will celebrate a fight to achieve sovereignty, a read of broader histories will indicate that the great domino effect of self-governance started in the late 1940s in India and Pakistan, and journeyed through sub-Saharan Africa, in Guiana and Nigeria, to end in Jamaica, where the authorities were all too cooperative in terms of organizing the transition. So, Jamaica progressed to independence, rather than achieved it by violent and abrupt revolutionary action.

This progression was carried out often with a pretty structured approach. It was neither ad-hoc, nor short-sighted, nor loosely-coordinated. Prior to independence, the pre-independence government led by Norman Manley, had a comprehensive development plan, known as the 1963-1967 Independence Plan. The Plan is based, so it reads in the summary of the document, "on careful examination of the main social and economic problems of Jamaica". Problem-solving oriented, the scheme maintains a pragmatic, yet inspirational, tone. It outlines the social challenges of Jamaica, marks policy responses in relation to these challenges, suggests national projects, specifies targets, and acknowledges any uncertainties that may arise in the course of implementation (Government of Jamaica, 1963).

Comprised of five sections, the plan begins with a historical analysis and description of Jamaica. Its geography, history, political, social and economic institutions (ibid:3-6). It covers fundamental problems in demographics and economics, social development and integration in the second section, drawing heavily on data from censuses, international surveys and academic studies. It also provides some projections in the areas of population, economic growth, significant sectors of economic activity, such as mining, manufacturing, agriculture and tourism (ibid:11-41). It talks of capital sources of the state. It conducts a situation analysis and sets policies, projections and targets in the various determinants of sustainable development, including natural resources, health, community development, financial and infrastructural investments (ibid:52-77).

In section IV the plan delves into 30 themes, that constitutes the set of national priorities. It begins with administration and the public sector, intending to underline the primary reform to enable all other (ibid:82). Section V of the plan includes a financial blueprint for the sustainability of national development and secure of funds (ibid:219).

The plan, considering the political and institutional circumstances of its formulation, is flawless. It was designed by technocrats who understood planning. Led by a political directorate who had vision for the country. It was treating the country well in the 1960's but never fully fulfilled, nor properly followed. "It was a profoundly visionary and inclusive plan. Had it implemented to completion, Jamaica would have been in a far-removed position from where it is in today" (Professor of Economics, UWI Mona, personal communication, 2017).

16. *Regimes and sectors of importance and consequences*

In postcolonial independent Jamaica, as in Nauru, some socio-technical regimes have been identified in literature, in government policies and by key informants and focus groups, to serve a decisive role in national development processes. As stated by interviewees, to explain development outcomes in sovereign Jamaica involves an analysis of two socio-technical regimes, or sectors: the extractive minerals sector (e.g. the bauxite and aluminium industry), and the agricultural and plantation sector.⁶⁸

Therefore, the focus in the case study is on the design and functions of the agricultural and plantations sector and on those of the bauxite and aluminium industry.

Asked to identify the years when socio-technical regimes went through significant transitions since their emergence, primary sources highlighted the mid-1970s as a point in time at which a change in the configuration of sectors and in the national development path occurred. Accordingly, the time span of 1962 to 1972 is considered in this study the first transitions period. The time span of 1972 to 2009 is referred to as the second transitions period.

⁶⁸ In the Jamaican case too, perspectives prompted in the course of the interviews used to triangulate each other, and to authenticate facts presented in literature.

17. *The first transitions period: sectoral and societal development*

The first decade of independence in Jamaica was prosperous, with economic growth powered by an expanding bauxite and alumina mining sector, and a gross domestic product increasing at an average annual rate of 6.3%.

But contrary to the output of the extractive minerals sector, the performance of the agricultural socio-technical regime – the one most historically, culturally and economically identified with Jamaica – has been less consistent, with some positive and often negative qualities. Longstanding structural predicaments in the agricultural socio-technical regime accounted for its poor performance (Professor of Economics and Former Political Advisor, UWI Mona, personal communication, 2017).

With a history covering some 350 years, the agricultural and plantations sector receives more consideration in this study.

The agricultural and plantation sector

The indigenous people of Jamaica, the Arawak and Taíno people, cultivated a variety of tropical plants for subsistence, to satisfy domestic demand and maintain self-sufficiency.

In the 17th century, bolstered by British mercantilism, Jamaican agriculture transitioned to become the leading exporter of sugar. In 1660, hardly any sugar plantations existed on the island. By 1673, 57 plantations were operational. By 1739, the number grew to some 430 (Black, 1983). During those two centuries, the seeds of structural dependencies were sown. Jamaica was to become an export-oriented monoculture, and the agricultural sector was to abandon the production of indigenous subsistence crops. Domestic demand for foodstuff will be satisfied by importation.

Labor intensive, the expansion of the plantation economy of the 17th and 18th centuries was reliant on shipments of African slaves (see Historical background). Human trafficking altered the demographics of the island. In 1775, approximately 200,000 Africans outnumbered some 13,000 Anglo-Saxon Europeans (Black, 1983).

The particular cultivation method employed in plantations explains how development unfolded in Jamaica and why. Since sugarcane cultivation, and agriculture in more general terms, is a biological process, it is critical, according to Bhatta (1978), to discern between mechanical technology and biological technology.

Mechanical technology, he argued "makes non-human power available or provides the means through which non-human power could be productively utilized, in place of human or animal power" (ibid:3-11). Biological technology, on the other hand, Sheridan continued (1989:60), improves animal and plant production by increasing the effective supply of nutrients. "Plant yields can be increased by either improving the effective supply of nutrients available, or by making it possible for the plant to utilize larger amounts of available nutrients, or, both. Fertilizers and assured water supply are means of the first kind, improved seeds or plant material of the second".

In effect, the traditional sugar plantation in Jamaica was a "factory in the field" (ibid), combining both mechanical and biological technologies, seeing innovations in both areas imported from abroad.

Steam-power technology, an imported radical innovation, replaced non-human mechanical power in the form of horse-mills, wind-mills and water-mills to crush the canes – all equally foreign-developed.

The processes of sugarcane cultivation included land clearing, soil preparation, hoeing, crop planting, weeding, and cutting. The labor was also employed for cane grinding, for boiling the sugarcane juice, for refining the sugar and condensing and purifying the syrup into rum. The organization of land and labor was foreign-developed as well. As a result of its rapid fermentation, a metabolic process where a substance is broken by bacteria, or yeasts, sugarcanes had to be crushed and powdered within a single day to retain their marketable quality.

Pares (1960:24-25) calculated that a sugar factory "could not profitably serve an estate or plantation of more than 300 to 350 slaves, tending an acreage of sugarcane which probably would not exceed 300 in all". It was a "complex affair", Sheridan noted (1989:61), "requiring foresight, calculation, and coordination"; managerial skills established abroad.

Martin said that a sugar plantation "ought to be considered as a well-constructed machine, compounded of various wheels, turning different ways, and yet contributing

to the great end proposed; but if any one part runs too fast or too slow, in proportion to the rest, the main purpose is defeated" (Martin 1802:57-58).⁶⁹

The most significant biological innovation (similarly foreign-developed) was introduced in husbandry agriculture and not in the plantation subsector. Bryan Edwards, a British historian and planter, noted that "Guinea-grass" (*Megathyrsus maximus*) may be considered as next to the sugar-cane, in point of importance, as most of the grazing and breeding farms or pens throughout the island, were originally created, and are still supported, chiefly by means of this invaluable herbage". Guinea-grass was introduced into Jamaica from West Africa by George Ellis, in the 18th century (Edwards 1793:1, 185).⁷⁰ By ways of spill-over, this socio-technical transition in one agricultural subsector (husbandry), allowed the Jamaican farmers and estate owner to become more self-sufficient, and consequently, enabled the expansion of another agricultural subsector (sugar) during the 18th century.

In total, the agricultural sector rested in the hands of a small planter elite who profited from ample resources, generous land grants and low taxes which led to the formation of large estates of plentiful unutilized and uncultivated territories (Sheridan, 1974).

Any capital-intensive improvements were stymied by estate owners who had little incentives to challenge the regime (Former Senior Government Official, personal communication, 2017). When pressures from the landscape increased, due mainly to the movement to end slavery (see Historical background), estate owners were searching for ways to pare future costs of production.

Managerial and technological innovation followed. Planters read each other's manuals. They organized local agricultural societies to gather and disseminate practices and new techniques. They offered "prizes to inventors of successful devices" (Sheridan, 1989:65).

The spread of the industrial revolution, another notable landscape development, accelerated the adoption rate of various agricultural innovative techniques and machines for sugar production, coffee beans processing and cotton ginning in Jamaica. Colonial Jamaica saw much talk of technological innovation, employed to improve the working of the plantation sector. Deerr noted that "the first attempt to use

⁶⁹ See also: Barrett, 1965 and Mintz, 1986.

⁷⁰ It was introduced to Sri Lanka in the beginning of the 19th century (see Wisumperuma, 2007).

steam-power in the manufacturing process was made in Jamaica in 1768 at Greenwich plantation in the parish of St. Andrew" (Deerr, 1949-50: 2nd volume, p.552). The British companies Messrs, Boulton and Watt and Messrs, Fawcett, Preston and Company, exported Jamaica 65 sugarcane mill engines over a course of 50 years, between 1802 and 1852 (Deerr and Brooks, 1940-1).

Another early significant innovation, of a biological-technological sort, was the introduction of the Otaheite variety of sugarcane which was to Jamaica in 1793 from the Pacific Islands. This new variety of sugarcane quickly replaced the Creole as the cane of choice on the commercially-oriented estates. It spread through the region as the cane fields gradually extend, and it was accompanied by way of developing new sugar milling and processing methods during the 19th century, "bringing the region to global sugar preeminence" (van Schendel, 2016).⁷¹

Yet, more often than not, new technological systems have not enjoyed any great measure of success. A system of agricultural production that was effective in one parish in Jamaica was "utterly improper, and extremely detrimental in another" (Sheridan, 1989:66). The very fabric of the economy thwarted socio-technical innovation. It was a cultural barrier, entrenched in the agricultural sector and society at large. Edwards explained these innovation-resistant dynamics as early as in the 18th century: "the planters in general had no leisure for experiments, and that it was difficult to make agents and servants (who have everything to risk, and nothing to gain) walk out of the sure and beaten track of daily practice. Every man's experience confirms this observation" (Edwards, 1793:2, 212).

After the abolition of slavery in 1838, plantation workers left the estates all at once (see Historical background). Estate owners brought indentured manual workers from India and China but fared poorly in maintaining them on the plantations. Sugar plantations declined. High labor costs curtailed the cost-effectiveness of production. Between 1830 and 1840 agricultural output declined by 50% (Eisner, 1961:168).

In the Sugar Duties Act of 1846, the British parliament revoked the privileged taxation regime for sugar, so beneficial for the West Indies economies, to impose higher importation tariffs on the commodity. Compounded by the abolition of slavery and

⁷¹ According to von Humboldt, the Otaheite variety was "one of the most important acquisitions for which colonial agriculture is indebted to the travels of naturalists". von Humboldt said the cane yielded one-third more juice, and it was also thicker than the old Creole cane, and the "bagasse supplied more fuel to the boiling house" (Von Humboldt 1851:486; Bennett, 1958:7,103).

subsequent increasing labor costs, the duties act had catastrophic results on the Jamaican agricultural (mono-cultural) sector. "In the new climate of pessimism and retrenchment", Sheridan noted (1989:77), "the new sugar technology was found to be less widely adopted than was formerly thought and its merits and demerits more soberly assessed". There was an "entire neglect of the most obvious methods of economizing labor" (Bigelow, 1851:129). Sewell (1861:274) claimed that the Jamaican planter "ignored all the agricultural and mechanical improvements of the century".

On the technological stagnation and innovation cutback, across the very simplest agricultural methods and techniques, Sheridan (1989:78) stated that "ploughs and harrows were reported to have improved the system of cultivation generally, but they were far less widely adopted than was formerly thought... very few planters and their hired managers knew anything of the art of ploughing... (Jamaican) agriculture made scarcely any progress".

Sectoral difficulties continued to impair improvement, and over the course of the 19th and early 20th century became chronic.

Niches, as they are understood in the transitions theory, were nonexciting. Agricultural machinery was not procured and "there was an acute shortage of first-class tradesmen to install, operate, and repair the machinery" (ibid).

With the sugar industry and agricultural sector, Jamaica declined. Lack of collaboration between plantation owners and their creditors, insufficient lands to expand production, expensive and disinclined labor force, dearth of farmers to grow canes for factories in formal agreements, and heavy mortgages of plantation crippled the island's economy.

At the landscape level, of international markets, Jamaican agriculture suffered from intense competition. The expansion of plantations in Brazil, where slavery was still practiced and lands were abundant, came at the expense of Jamaica's exportation. The price and volume of agricultural production declined. The value of Jamaican sugar exports dropped from 2.6 million Jamaican dollars in 1832 to 418,000 Jamaican dollars in 1910 (Eisner, 1961:168).

In the wake of the 20th century, cultivation of bananas became the leading agricultural and economic-wide activity in the island. In the 1930s bananas

accounted for 57% of the total value of domestic exports (Jefferson, 1972).⁷² As opposed to early day sugar production, Banana agriculture in Jamaica experienced little innovation, and the cultivation process remained traditional, manual and labor intensive.⁷³ Plants grow from rhizomes (roots) and as they mature, shoots grow from the original stalk, or trunk. The plant is then manually clipped so only one or two shoots are allowed to develop further. These shoots replace the plants that have borne fruit. One of these shoots is cut and replanted as a new rhizome, to grow into a new and separate banana plant. A root will produce one plant each season. In other words, a banana plant can bear fruit in six months after planting. Banana plantations require rich soils, nine to 12 months of sunlight and regular rains, up to 500 centimeters a year, more than artificial irrigation can provide.

The harvesting method usually involves two workers, when one cuts the trunk while the other catches the clusters on his back to prevent them from bruising on the ground. The clusters weigh approximately 45 to 50 kilograms. "It is an arduous practice, requiring strenuous effort" (Farm Owner, personal communication, 2017).

In the 1940s, landscape pressures burdened the banana plantations. A fungal pathogen (*Fusarium oxysporum*), known as the Panama Disease injured scores of plants, reduced the water-conducting capacity of the crops and causes the plants to wilt and wither. Exports fell from 23 million stems in 1938 to 6.5 million stems in 1949. Sectoral recovery between 1950 and 1970 has been slow (Jefferson, 1972).

Another major development in the national agricultural sector, resulting from the abolition of slavery – a socio-technical landscape factor, was the migration of former slaves away from cities, to cultivate crops of their desire and grow their own foodstuff on small parcels of lands allotted to them. By 1850, some 100,000 former slaves left the plantations to raise their own farms. To this day, food for local consumption is

⁷² Bananas (*Musa sapientum*), contain water (75 percent), alkali-forming minerals, sugars, potassium and proteins. Cooked bananas are called plantains and when they are consumed raw, they are dubbed desert bananas. They grow not from trees but rather palm-like herbaceous plants. Each herbaceous plant produces a stem. The stem produces clusters referred to as "hands". A typical banana stem will contain six to nine hands. Each hand will contain 10 to 20 individual bananas, called "fingers". Commercial banana crops will produce six or seven hands, with 150 to 200 single bananas. Harvesting will take place every 12 to 18 months. The crop was happened upon by the Portuguese on the Atlantic coast of Africa. They brought it for intensive farming in the Canary Islands and from there it migrated to the West Indies by Spanish missionaries.

⁷³ In contrast, research institutes in other venues, such as the African Research Center on Bananas and Plantains and the Honduran Foundation for Agricultural Research, experimented frequently with banana breeding to enhance varieties' resistance to diseases and pests, and to increase yields.

produced largely by small land holders (Findlay and Wellisz, 1993; Senior Government Official, personal communication, 2017). Yet, due to scant institutional support, in most cases, the titles of settlers to lands remained uncertain. Lack of land titles posed barriers for borrowing credit, invest in technology and enhance operations. Such factors stemmed any potential agricultural niche emergence. All the while, the most fertile lands were occupied by large, inefficient plantations (Brown 1979:61).

At the same time, the sugar industry continued to deteriorate. The number of sugar estates diminished from 646 in 1834, to 300 in 1865, to 266 in 1869, to 202 in 1880, to 140 in 1896, to 74 in 1910 (Findlay and Wellisz, 1993).⁷⁴ After 1944, one of the expectations of an emancipated economy, was that its planters would "introduce new equipment... experiment with new techniques... (and) revise methods of labor management" (Green 1976:126).

"Reality, however", Sheridan testified (1989:71), "fell far short of the grand scheme that was envisaged... planters were prone to cling to arbitrary powers over their blacks... and (emancipation and later independence) did not produce better working conditions... in all respects, the system failed to establish the firm foundation of a free society which its proponents had intended".

In the decades leading to independence, the agricultural sector was identified over and over again as an area of special national interest, having the capacity to develop into a more sustainable, modernized and principal source of employment, private initiative, economic growth and self-sufficiency. The Jamaican Economic Policy Committee issued a 1945 report proclaiming that the economic future of the country lies in a modernized and diversified agriculture, to be fostered by price supports and subsidies (Findlay and Wellisz, 1993). A year earlier, the British Colonial Office highlighted the critical role of the government with relation to the sector: "if private initiatives was lacking, the local government should assume entrepreneurial functions" (Widdicomb, 1972:80-81).

⁷⁴ According to Eisner (1961), Adamson (1972) and Sheridan (1989:84), one indicator of the slow advancement that was made in modernizing the domestic sugar industry is the average yield of sugar factories in Jamaica compared with those of British Guiana. Between 1880 and 1900, the number of factories in Jamaica declined from 202 to 111, while the average production in tons of sugar rose from 148 to 187. In British Guiana, the number of factories declined from 105 to 46 between 1885 to 1904, while the average output grew from 914 to 2,320 tons. In contrast to Jamaican factories, those in British Guiana converted to multiple-effect evaporators after 1884 with a resulting reduction in production costs.

Likewise, the ten-year plan, presented in 1946, asserted that public spending was to be dedicated to two main areas: socioeconomic welfare and agriculture. In the 1951 revision of the plan, more funds were to be earmarked for agricultural development initiatives. "You see, no one counted niches or indigenous cells of radical technologies to help the sector modernize... it was a responsibility of the state" (Former Senior Government Official, personal communication, 2017). Until 1952, Jamaica continued to be an agricultural country in every respect, with little biological and mechanical innovation, and no structural transformation in sight.

In the 1950s and 1960 the government was facing a sector in deep structural difficulties. The country had 66,000 farms, and 146,500 small plots of land.⁷⁵ 57 percent of the farms comprised of 6 acres or less, and together, they occupied roughly 6 percent of the total farmland on the island. Small farms were (and still are) typically located on hilly terrain, where crops were cultivated for both foodstuff for domestic consumption and for exports. Most of the land of small farms was fully exploited.

But the configuration of the regime prevented progress still. Since farmers yet lacked title to the land they cultivated, they were unable to mortgage the property, and therefore incapable to gain funding for modernization. As a consequence, small farms were generally unproductive due to poor soil conditions and outdated technology – a century old dynamic.

Recognizing these barriers for economic development, the government of Jamaica attempted to rectify conditions, but interventions during the 1950s lacked coordination and deemed futile (IBRD, 1952). While 57% of the farms in Jamaica – the small farms – occupied 6% of the total farmland, the 500 largest farms, cultivating over 500 acres, representing 0.75% of the farms in the country, occupied 60% of the total farmland.⁷⁶ In these estates and plantations, occupying the most fertile lands in the island, vast lands tended to lie unseeded, untilled. It was the epitome of a distorted sector. "A structural reform was in order, not a technological one... the sector needed to be re-configured economically, not technologically" (Former Senior Government Official, personal communication, 2017).

⁷⁵ A farm being defined as having at least one acre (approximately 4,000 m²) or an agricultural product of any type, valued at least 15 pounds in 1945 prices (Findlay and Wellisz, 1993).

⁷⁶ All the large estates and plantations grew cash crops, intended for exportation. Mainly sugarcane and bananas, with small livestock agriculture for local uses.

The grip of the agricultural sector in the Jamaican economy was overwhelming (ibid). In the early 1950s, national manufacturing activities focused primarily on processing agricultural products. In 1951, sugar-mills accounted for 29% of total factory employment, and food processing enterprises on the whole employed 69% of all factory workers, to generate 60% of the gross value added by manufacturing (Findlay and Wellisz, 1993).

The British, on their account, endeavored to assist the Jamaican agriculture sector by reducing tariffs on Jamaican sugar, giving the commodity preferential access to the United Kingdom – a policy known as a preferential trade agreement (PTA). This landscape development too had mixed results.

On the one hand, the large estates would survive financially. On the other hand, protection from free-trade discouraged technological modernization and innovation in the industry. It stymied agricultural diversification, bred a culture of entitlement among estate owners and large sugar producers, and resulted in overall sectoral incompetence, and in the longer run, declining yields and higher costs of production (Senior Government Official, personal communication, 2017; Farm Owner, personal communication, 2017).

Absent economic incentives to re-configure the regime, land owners left the socio-technical elements of the agricultural sector unchanged, unchallenged.

Moreover, the social conditions at the plantations were largely neglected (Former Senior Government Official, personal communication, 2017). Poor housing and health services were taken little notice of. Harrison maintained (2001) that the government failed to lay the foundations for a well-functioning civil society, and a well-performing agricultural sector.

Destitution-ridden and deficient in technology and skills, the plantations continued to exploit the preferential market agreement and increase sugar production. The 1950s and 1960s were fairly virtuous years for the sector in this respect. Sugar production expanded from 55 thousand tons in 1941, to 378 thousand tons in 1959, to 515 thousand tons in 1965 (Senior Official, Planning Institute of Jamaica, personal communication, 2017).

Being the most dominant agricultural activity, sugar production hampered economic diversification, which, by self-regulating dynamics, or the work of a feedback mechanism, increased the economic dependency in the estates.

If sustainability transitions of the agricultural regime are concerned, socially as well as environmentally, little progress has been made in those years. Production expansion exerted immense pressures on aquifers and was responsible for unregulated discharge of sewage and waste waters (Former Senior Government Official, personal communication, 2017).

During the first period, the central government provided social welfare services and technical advisory services to the population of deprived farmers who did not otherwise have access to such amenities. It increased the technical staff in agricultural offices throughout the country from 45 individuals in 1930 to 676 in 1970 (Findlay and Wellisz, 1993). It promoted new land distribution arrangements, listed land titles ownership, and created some credit provision schemes. As a result, the number of small farmers cultivated their own listed land increased from 60% in 1943, to 80% in 1962 (*ibid*).

But the experience of government interventions in the sector has been disappointing. Despite the economic prosperity (due to the emerging Bauxite and Alumina industry, see next section), inequality and unemployment persisted in the 1950s and 1960s.

Plantation owners did not invest in modernization and new agricultural technologies, and by the end of the period sugar production declined (Mordecai, 1966). In 1970, Tate and Lyle, the largest estate owner in the country sold its sugarcane farming business to concentrate on sugar-milling in factories – to which small farmers sold their canes, and the Jamaican government purchased its 60 thousand acres in 1971.

Reflecting on the decline of the agricultural sector; the sugar and banana plantations, Olivier (1971:131) argued that the "most obvious causes that undermined the old sugar economy and hindered its readjustment to the new conditions were absenteeism, reactionary overseers, obsolete technical methods, the excessive burden of mortgages, profligate soil exhaustion, the attempt to coerce labor at low wages by unfair rents, and access by laborers to unoccupied land".

Experimental novelties were not exercised. Niches did not exist, and if they did, in a random farmhouse or a mill or a factory, they bred no threat to the existing regime.

And yet, this first period is considered a time of prosperity. This is due to the new and emerging regime of the extractive minerals.

The extractive minerals sector: the Bauxite and aluminium industry

Since their discovery and throughout the 1940s, the potential of Jamaica's bauxite reserves was untapped. Only when a specific processing technique was developed abroad, a technique customized to the qualities of the bauxite ore – known as the Bayer process – could the Jamaican government exploit the stock (Auty, 2002). It was the sector's most substantial innovation. The Bayer process forged a dominant design for the extractive minerals industry.

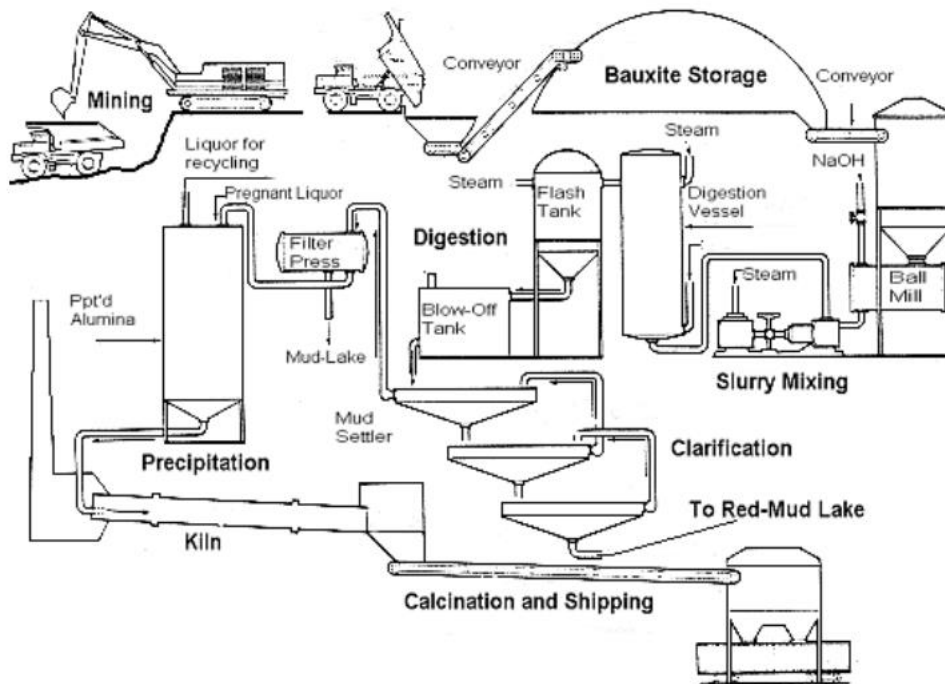
Bauxite is a form of rock that has relatively high concentration of aluminium and it serves as the main source of aluminium in the world.⁷⁷ The Jamaican deposit, of which parent material is Miocene volcanic ash, is known for its high-grade bauxite (50% Al_2O_3 and 5% or less SiO_2) (Comer, 1974:1251).

A radically new technical option, originating outside of Jamaica, the Bayer process involves six separate procedures including digging out and removing the mineral, dissolution of alumina at raised-up temperatures, additions of flocculants (i.e. a substance that catalyzes the clustering of particles), precipitation of pure Gibbsite (i.e. hydrargillite or the mineral consisting of aluminum hydroxide), regeneration of the solutions for recycling, and heating the Gibbsite to 1100C (i.e. calcination) to produce alumina.

Various technologies, protocols and machineries partake in the Bayer Process, and once the socio-technical system that underpinned the bauxite and alumina sector was put in place (see diagram 3 below), little technological changes were made. To this day, the Bayer Process is the most cost-effective and prevalent method of manufacturing alumina. In terms of the multi-level perspective, the main interactions in this period were between landscape changes, the local government and the regime.

⁷⁷ Aluminium oxide is commonly referred to as "alumina". They are used interchangeably in this work.

Diagram 3. Processing of Jamaican Bauxite by the Bayer Method. Source: Lancashire, 1982:62-64.



After negotiations with foreign mining and processing developers came to fruition, in 1950, the Jamaican government offered excavation rights to three American alumina producers, Reynolds, Alcoa and Kaiser, and to a Canadian company – Alcan. The American firms developed mines to supply their US based aluminium factories with the ore, and the Canadian firm built a processing plant on the island.

Commercial exportation of bauxite commenced in 1952 and domestic processing at the Alcan facility began at 1953. Until the end of the decade, production increased tenfold, from 420 thousand tons in 1952, to 4.7 million tons in 1957. By the end of the first transitions period, at 1972, Jamaica produced 13 million tons.

Since the original agreement linked fiscal payments to the volume, not the value, of exports, Jamaica derived no benefits from the rapid rise in the world price of aluminum that occurred in the early 1950s. The agreement was renegotiated in 1957 to take the product price into account raising the royalty-cum-tax-payments from 2 shilling 8 pence to 13s-16s depending on the price of aluminum and the dollar-sterling exchange rate. Jamaica exported the full measure of its bauxite and a

quarter its alumina to the US, "supplying 40% and 10% of the US bauxite and alumina requirements, respectively" (Hughes, 1984:42). Thus, the sector grew from modest initial stages in the 1950s to the principal global supplier in 1962.

As the bauxite-alumina sector expanded, the structure of the Jamaican economy transformed. Between 1952 and 1972, the contribution of agriculture to gross national product declined. Though plantations continued to export agricultural commodities, the bauxite-alumina sector emerged as the leading earner of foreign exchange. According to Findlay and Wellisz (1993:166) the growth of the bauxite industry led to the formation of "an enclave operating under a separate fiscal regime and having weak links to the rest of the economy". Analyzing the sector, Girvan (1971:44) argued that the industry is capital intensive and dependent of expensive inputs: "the ratio of intermediate inputs to gross value of output does not even reach 25%... and a substantial portion of inputs, notably fuel, is imported". Warnings of the Dutch Disease were grossly ignored⁷⁸ (Senior Government Official, personal communication, 2017), and at the end of the first transitions period, the local economy grew increasingly dependent on the extractive mineral sector. In 1972, it accounted for more than 12% of the Jamaica's GDP. The production of crops and agriculture's share of GDP fell from 27.7% in 1952, to 11.9% in 1962, and 9.1% in 1972 (Findlay and Wellisz, 1993).

"What is more important", Findlay and Wellisz (1993:166) stressed, "during the 1952-1962 period, the share of bauxite and alumina in total exports increase from 2.3% to 48.4%, whereas that of agricultural products, mainly sugar, rum, molasses, and bananas, fell from 79.3 to 40.8%. By 1972, bauxite and alumina accounted for two-thirds of export earnings (and) bauxite and aluminium also became one of the leading sources of government finance". Girvan (1971:61) noted that during the 1960s, the extractive mineral sector "was supplying about 16% of government revenues and paying more in taxes than the rest of the corporate sector". This bears resemblance to the previous case study of Nauru.

As mining spread, it had wider socio-technical knock-on effects. During the first period of transitions, described in the literature and by interviewees the "boom years

⁷⁸ The Dutch Disease is an economic phenomenon occurring when natural resources distort the local market to such an extent that the economic costs outweigh economic gains. In the context of "mineral economies" a growing dependency on mineral extraction and exportation hamper competitiveness in the agricultural and manufacturing sectors, which in the long run, leads to stagnation and decline (see Auty, 2002).

of 1952 to 1972", Jamaican society saw exceptional socio-economic progress. In just two decades, Jamaica transitioned from a small island country hinged on a single sector – agriculture – to a country of a more diversified economy, with more than one dominant sector, and administratively self-governed and self-reliant.

"The transition", Findlay and Wellisz (1993:175) determined, "was achieved with remarkable lack of disruption". But the most persistent and systematic social predicaments remained unsolved, if not unattended. The mining sector depressed the production of tradable crops, unemployment increased and so did inequality, and the public sector was operating ineffectively.⁷⁹

⁷⁹ Findlay and Wellisz (1993:175) noted that the "public administration expanded faster than GDP".

18. *The second transitions period: sectoral and societal decline*

That a change of governments and policies marks the turn of the tide in Jamaican development, from sustainable to unsustainable sectoral transitions, highlights the role of institutions as well as of landscape pressures – not niche actors, not innovation networks – in driving regime re-configuration.

Towards the 1972 general elections, the People's National Party (PNP), of a social democrat inclination, was to profit from a dissatisfied electorate. Unemployment, incomes gaps, and a lack of trust in political institutions, owing to cronyism and corruption, helped the PNP to gather the people behind Michael Manley, the son of Norman Manley, who championed agrarian reforms during the 1950s and was Jamaica's elected head of government from 1955 to 1959 and the country's Premier from 1959 to 1962.

The second period saw a host of external landscape changes that influenced dynamics in both the agricultural and extractive regimes. Starting in 1974, Prime Minister Manley initiative government interventions of decisively ideological nature. Informed by works of the radical thinkers of the day, and with a strong socialist predisposition, Manley's oratory grew more controversial and polarizing. He summoned to the political center stage the issues of class and race. He argued that the 1960s economic policies assisted in perpetuating colonialism and in maintaining the national dependency on foreign finance, investments, technical and managerial skills.

According to Findlay and Wellisz (1993) Manley was eager to establish himself a herald of the developing world. His government acquired a number of firms, tightened regulations over the private sector, and launched new commercial initiatives. Four years into his first term in office, the People's National Party gained the support of the intellectuals, the unemployed, and the laborers at the expense of the middle class. This electorate helped Manley to secure a second term in 1976.

Encouraged by trade unions, radical academics, self-sufficiency proponents and Marxist allies in the region (Fidel Castro), Manley led the PNP to the socialist-left, breaching from the parliamentary two-party consensus that enabled the rapid

development of the country between emancipation in 1944 and his own election as Prime Minister in 1972.

It is worthy to notice that Manley's socialist politics were mostly rhetorical, which was indeed sufficient to deter the skilled laborers and entrepreneurs who migrated during the 1970s. "Michael Manley had the opportunity, oh, without question, and he lost it... He believed democratic socialism was the answer... I was there, I was there in the street where he made the promise, I was there in the cabinet office to support him with advice, I was in the field, growing bananas... but he used the wrong words... he instilled fear in the heart of Jamaicans. He made announcements which he didn't need to... after that, the educated managerial classes set about to migrate" (Former Senior Advisor to the Manley government, personal communication, 2017).

It was due to this oratory that public-sector-private-sector relations deteriorated. A greater presence of Cuban diplomats and political activists incited further fears among the business milieu that Jamaica was pointing at and moving towards communism. "Panic within the private sector debilitated domestic markets, provoked hostilities toward the middle and higher classes and destabilize the government... there was a considerable flight of capital... enterprises were closed... tax payments were evaded... investments were shelved... a climate of antigovernment hysteria paralyzed economic activity" (ibid).

In effect, Manley continued to practice a dirigiste approach, one already exercised in the 1960s – in which state institutions apply a directive influence over the economy. Manley extended an already existing program of acquiring idle lands for re-allocation to petty farmers, he continued to sponsor the government agency to run the sugar industry, he leased government lands to small farmers, and extended the support to Jamaica's Agricultural Marketing Corporation.

In 1976 it would become clear that Manley's economic policies were too expensive to sponsor from government revenues. But before curtailing his initiatives, Manley entered into unsustainable internal and external borrowing arrangements with the International Monetary Fund. By the time the government was ready to cease to support some of its welfare undertakings, it was too late.

Several landscape developments, including a decline in global demand for bauxite, the 1973 oil crisis and 1979 energy crisis (due to reduced oil production in following the Iranian Revolution), a retreat in foreign investments and the fled of highly skilled

laborers mortally wounded the economy. Whatever government programs remaining, the Manley government had to put them to a halt, following the International Monetary Fund's (IMF) austerity plans. During that decade, and in the following one, Jamaica earmarked twice as many resources for "debt repayments as it did for health and education (combined)... we should have never signed that disastrous deal" (Land Owner and Farm Manager, Portland Parish, personal communication, 2017).

A sharp decline in Manley's public support in the 1980s general election cleared the way for Edward Seaga's conservative, center-right, Jamaica Labor Party (JLP). Following a landslide victory, Seaga commanded 51 parliamentary seats against Manley's 9.

Seaga hoped to revive a moribund economy. He continued to tighten the government control of sectors, kept the ministry of finance under his own supervision, appointed his brother in law as Mining Minister and concentrated all policy formation responsibilities in the prime minister's office. However, he was reluctant to consider private sector advices and on balance, showed little interest in de-centralization of the economy. Distrust between government and business persisted.

"For all his popular appeal, Seaga had a reputation for vindictiveness, violence, and scything his path to power... he exploited Afro-Jamaican religions and pan-Africanist ideology for his own ends" (Thompson, 2009:151). To his political rivals Seaga was a "cynical opportunist", a champion of "voodoo politics" (ibid). This account reflects the common opinion of interviewees of this study.

Manley returned to office for a shorter stint, between 1989 and 1992, and after the disintegration of the Soviet Union, he bended towards liberalism and adopted some market reforms that stood in stark opposition to his 1970s terms in office. It was during these years, 1972 to 1988, that Jamaica descended into an unprecedented political culture of violence, from which it did not recovered until the end of the period of this study. The island saw a tripling of the annual murder rate between 1990 and 2005, from 542 to 1,674, respectively (Jamaica's Ministry of National Security, 2007).

As noted by an interviewee, "Jamaica bred garrison communities based on political affiliation, which leads to intra and inter-community violence. While election violence has quelled somewhat toward the end of the century, non-political violence has not but there is a relationship between politics and violence in Jamaica. In some

communities, intra-community borders and boundaries prevent people from moving about and they most certainly do not venture into other communities particularly in the inner-city areas" (Professor of Sociology and Caribbean Social Issues, UWI Mona, personal communication, 2017).

Manley retired in 1992 and his Deputy Prime Minister, Percival Patterson, replaced him until 2006 as Prime Minister and head of the People's National Party. His notable policies included investments in modernizing local infrastructures, the mining and energy sectors, in reducing the dependency of IMF loans, in budgeting poverty alleviation schemes and social welfare projects, and in promoting economic integration among members of the Caribbean community (Delano, 2002).

The agricultural and plantation sector

Back to 1972, the socialist government of Michael Manley and the PNP launched various initiatives and schemes to promote their self-sufficiency agenda, and championed cooperativization in the agricultural sector: a program that was sponsored between 1973 and 1980, as an alternative to free market capitalism (Panton, 1993).

Under this social experiment, the government leased parcels of public lands throughout the island at low costs and, at the same time, it purchased some 26,000 acres (over 105 square kilometers) of plantations from foreign companies to establish 16 agricultural cooperatives. Small farmers could pool their lands, machinery or products together for various purposes. Members of these cooperatives were supposed to be delivered with inputs for agricultural production such as fertilizers, fuel, and machinery services, and to benefit from joint transportation, distribution, and marketing of their products (there are known as supply cooperative and marketing cooperative, respectively).⁸⁰

In the agricultural sector, the government used the Marketing Board, a statutory body responsible for the promotion of agriculture by providing technical support as well as for the marketing of Jamaican agricultural products abroad – as a sole agent – to extract rents from the exportation of sugar, bananas, coffee, cocoa and coconuts.

⁸⁰ See Cobia, 1989.

A government-led sectoral transition in the organization of lands and labor did not go in conjunction with a technological transition. By and large, the agricultural apparatus in Jamaica and much of the equipment of the peasantry and the plantations remained obsolete.

As a result of these partial interventions, between 1972 and 1980 the cultivation of crops for export weakened at an annual rate of 6%, while the cultivation of crops for domestic use rose 0.8% a year. Findlay and Wellisz (1993:182) stressed that "most of the government's new schemes proved to be expensive, ill-conceived, and mismanaged. The nationalized enterprises could, in principle, provide the government with much-needed current revenue, but in practice, most of them incurred losses. Farmers cooperatives ran up enormous debts and had to be liquidated by the successor government".

Some landscape developments of the earlier period continued. The most talented farmers went abroad as part of the large migration of the 1970s. "Costa Rica built a banana industry with Jamaican labor... Cuba had some 10,000 Jamaicans working in the agriculture of cash crops... we were there" (Former Advisor to the Manley Government, personal communication, 2017). This also made remittances an integral bloodline of the Jamaican society.

When Seaga took office in 1980, he was bequeathed with an insolvent economy and an agricultural sector under increasing strains. Gross domestic product was declining. The cultivation of sugarcane and banana was at a record low. The intervention of the IMF with local finance was a controversial issue since 1977, when Manley's government borrowed 468 million Jamaican dollars. For Seaga, the loan circumscribed his ability to maneuver the economy and direct public spending. In 1981, Brown contended that since 1977, economic policy in Jamaica was at the hands of the IMF (Brown, 1981). That same year, the IMF granted Seaga a 560 million Jamaican dollars loan to support his economic recovery strategy, but two years later, the Fund demanded to introduce austerity measures to serve the national debt. In protest, 100,000 civil servants voted for an all-out three-day strike to remove new ceilings on wages. In 1984, riots swept the island in response to increasing food prices. Jamaica was set on a downward spiral.

Seaga attempted to stimulate the traditional agricultural production, sugar, bananas, coffee, citrus, and aimed to invest in the cultivating of nontraditional agricultural products in the longer run, but has met persistent difficulties.

In the early 1980s, the sugar industry was still the most important cash crop, but the industry was crippled by a barrage of exogenous disturbances, such as fungal contagion, sugarcane smut and rust, plant interruptions caused by antiquated technology, shortage of spare parts, and inadequate management. Publicly owned estates managed some 50% of the sugar cultivation and ran a high deficit of 89 million Jamaican dollars. Sugar cooperatives accrued a deficit of 39 million Jamaican dollars (Stone and Wellisz, 1993).

In Seaga's second term, and with the assistance of the World Bank, the government disbanded the cooperatives and handed over the management of plantations to Tate and Lyle, a British multinational of a history of sugar refining. It also re-planted public estates with improved canes and invested in a more modern machinery. Several wasteful factories were forced to shut down. Nonetheless, plantations and land owners fell short of reaching the targets set in the course of the decade.

The government was able to make little progress in banana agriculture. The Banana Marketing Company – a government vehicle and exportation monopoly – imposed low price ceiling which helped to boost exports. Its attempts to increase production, through privatization, proved unsuccessful. Rather than expanding, banana yields declined throughout the 1980s.

The Jamaica Labor Party intervened further. In 1985 it dissolved the Jamaica Banana Company, offering to sell or lease some 100,000 acres of plantations and dismissing 2,300 employees. The Banana Export Company, a government monopoly that replaced the former Banana Marketing Company, increased the set prices of superior fruits by 50%, which improved exportation of higher-quality bananas in under three years (Stone and Wellisz, 1993). Although the government claimed to ease its regulation over the private sector, in effect, it retained all the primary powers, policy vehicles, and market intervention instruments for guiding the agricultural sector, and the economy as a whole.

The following 17 years, from 1989 to 2005, showed little sectoral progress. Additional land reforms, leasing more plots to petty farmers, were introduced by the third Manley government (Panton, 1993), who succeeded Seaga in 1989, before the former handed over the rein to Patterson, his deputy, who occupied the Prime Minister seat until 2006. In just over a generation, cooperativization (1973-81) was replaced by nationalization and government control (1981-94), which was dissolved and privatized (1994-1998), only to be re-nationalized (1998-2005).

Transformations of ownership and development strategies did not avert the decline of the sugar industry and of the agricultural sector. On the contrary, political inconsistency, and scarcity of investments in efficiency and modernization, overwhelmed the socio-technical agricultural regime of Jamaica.

The extractive minerals sector: the Bauxite and aluminium industry

Since the 1950s, the bauxite and aluminium sector held Jamaica's most favorable development opportunities as only an abundant and newly-discovered natural resource of global demand can. In the 1950s and 1960s world consumption of aluminum grew at 9% a year, and during the first transitions period bauxite proved to be the island's leading source of revenues and to potentially place Jamaica on a sustainable development path until the end of the century.

As far as exhaustible natural resources are debated, the principles that should guide state interventions are standardized, almost mechanical: to invest the royalties of exploitation and use of the deposit in education and modernization of infrastructures, to form alternative sources of national income (i.e. economic diversification) and to instill the market with competitiveness, and thereby, to pare financial dependency in the sector and mitigate the influx of foreign currency.

An often-advised complimentary measure is to sterilize proceeds, in other words, to invest most of the revenues in designated sovereign funds and control the infusing rate of money into the economy, extending the flows of revenues over time. A practice that allows greater degrees of stability against landscape pressures.⁸¹

Considering the looming exhaustion of the country's bauxite and alumina reserves, and acknowledging the volatility of commodity markets, an additional economic caveat was that the Jamaican government should not be goaded by immediate economic concerns into leading hasty development policies of long-term implications (Former Senior Government Official, personal communication, 2017; Hughes, 1984).

Despite all that, government meddling with the design of the bauxite sector, specifically, a change of its economic underpinnings and regulations, coupled with

⁸¹ See Collier, 2003; 2008, and Mehlum et al., 2006.

landscape pressures such as the oil crisis of 1973, undermined the socio-technical regime.

At the landscape, in the early 1970s Jamaica lost its position as the world's leading bauxite producer. In 1968, Jamaica produced twice as much bauxite as Australia. In 1971 Australia had caught up. By 1974 the latter produced a third more than Jamaica (Stone and Wellisz, 1993). The increase use of plastics as aluminium substitutes destabilized the industry further, and another detrimental development to the sector was the sharp increase in the price of oil, a result of the 1973 oil embargo. Oil was a vital input in the aluminium production process in the Jamaican industry, which did not possess the flexibility to switch to coal (as Australia, for instance).⁸²

But the most damaging pressure on the bauxite and alumina sector was exerted on the part of Manley's government. Having failed to form an international cartel of bauxite and alumina producers, to curb supplies and raise the price of the commodity; producing states refused to bound production, Manley resorted to unilateral measures. In 1975, the Prime Minister imposed a bauxite production levy with the intent to increase government revenues from taxes.⁸³ It was considered his most controversial government intervention (Young, 1987).

A tax equal to 7.5% of the average realized price of aluminum ingot – the bar, or block of metal – was levied. The levy had wider socio-technical knock-on effects. In the short term, the levy summoned a six-fold increase in taxes and it eased the foreign currency constraint on the economy. In 1973, revenues from the bauxite sector stood at US\$27 million. In 1974, that figure stood at US\$180 million.

However, the levy also increased production costs by nearly US\$30 per ton of alumina (Stone and Wellisz, 1993). Jamaica, until recently one of the world's lowest-priced alumina producers, was now one of its highest (Professor of Economics, UWI Mona, personal communication, 2017). "The Manley Government drove a stake through the regime" (ibid). The bauxite sector declined. From a production of some 15 million tons of bauxite and some 3 million tons of alumina in 1974, the sector

⁸² According to World Bank estimates, "an increase of US\$10 per barrel of oil raised the cost of alumina production in Jamaica by US\$15 to US\$29, depending on the plant. Even more important, aluminum reduction is a fuel-intensive process, and increases in the price of fuel forced U.S. aluminum plants, the main buyers of Jamaican alumina, to relocate to energy-rich countries" (in Stone and Wellisz, 1993:182).

⁸³ See Government of Jamaica, 1974, The bauxite (production levy) act, Ministry of Justice, Government of Jamaica.

devolved to produce some 7.5 million tons of bauxite and some 2 million tons of alumina in 1983.

From the perspective of transitions theory, this socio-technical re-configuration was not so much technical as it was economic. In 1975, Manley established the Jamaican Bauxite Mining Company, a government holding corporation to take a 51% equity position in the operations of Kaiser and Reynolds, and a minority equity position in Alcan and Alcoa. This interfering crippled the sector additionally. Adversely, the proceeds of the levy were ill-managed and ill-invested. Hughes (1984:47) maintained that profits were used injudiciously, instead of investing them in infrastructure and education, in the modernization of agriculture and in diversifying the economy, most of the earnings from the levy were used to reduce the fiscal deficit.

Poor assets management was endemic. "Between 1974 and 1982 the Capital Development Fund (CDF)", a government vehicle formed to collect and invest the bauxite levy earnings, "received US\$1,495 million (nearly US\$1.5 Billion)". To serve the fiscal needs of the government (both Manley's government and Seaga's), "US\$1,074 million was transferred to the budget, leaving US\$420 million for investment". Eventually, "only US\$157 million went for productive investment", yet, these investments "did not contribute to the goal of creating alternative sources of income to the bauxite-alumina industry" (Stone and Wellisz, 1993:185).

In the late 1970s the IMF strong-armed the government to introduce austerity measures, and the economy "lost all the gains" of the 1960s and the 1970s. "The economy collapsed" (Former Senior Government Official, personal communication, 2017).

The sector did not recover under the Seaga government. Revenues from both the agricultural and plantations sector, and from the extractive minerals sector dwindled. In the early 1980s the government failed to meet the IMF balance of international payments standard (BOP). Seaga could remove the levy at once. No doubt, it would diminish government revenues in the short term. But it would draw down production costs. Instead, 1980s government chose to enhance production by modernizing some of the existing facilities with more borrowings. The Bauxite and Alumina Trading Company (BATCo), a government agency, was looking to tap into new export markets. The government predicted that with investments and new exportation destinations production will increase and would reach 18 million tons by 1984. But it

remained stagnant. Then, Seaga reduced the bauxite tax to 6%, and yet production continued to decline.

According to the Jamaica Bauxite Institute (2013), "Jamaica's share of world bauxite output has fallen from 18.1% in the 1970s to approximately 7.1% of total world production of 205 million tonnes in 2008. With over one-half of the country's alumina capacity still closed in 2012, and output hovering around the 10 million ton per annum mark, Jamaica's position in the world industry would have experienced further slippage".

Capital investments by bauxite and alumina companies working in Jamaica fluctuated over the years. In 1980, J\$2.8 million were put in land purchases and development, J\$6.7 million in building and construction, and J\$13.6 million in machinery and equipment. In 1987, J\$448 thousand were invested in land purchases and development, J\$5.5 million in building and construction, and J\$6.3 million in machinery and equipment. In 2000, investments went up to J\$24.2 million in land purchases and development, but subsided to J\$1.9 million in building and construction, and nearly doubled to J\$11.3 million in machinery and equipment. In 2005, investments soared to J\$10.9 million, J\$65.9 million and J\$52.8 million, in land purchases and development, in building and construction, and in machinery and equipment, respectively (Jamaica Bauxite Institute, 2017).

The ebbs and flows of investments did not translate into outputs and exports, which have overall weakened. In 1974, Jamaica exported 2.8 million tons of alumina and 8.1 million tons of crude bauxite. In 1980, Jamaica exported 2.3 million tons of alumina and 6 million tons of crude bauxite. In 1987, Jamaica exported 1.5 million tons of alumina and 3.7 million tons of crude bauxite. In the year 2000, investments in alumina production bore fruit, and Jamaica exported 3.6 million tons of alumina, but continued to decline in crude bauxite, with 2.1 million tons exported. In 2016, the downward slope extended. Jamaica exported 1.8 million tons of alumina and 3.4 million tons of crude bauxite (ibid).

19. *Recovery and concluding remarks*

An analysis of transition periods in Jamaica illustrates that in small development island states much larger than Nauru, macro-level pressures and top-down government policies explain the design, formation and change of socio-technical regimes.

"Socio economic development was always driven by government", an interviewee indicated. "The private sector in Jamaica isn't as strong as it should be, in comparison to our neighbors, and most look to government for concessions... yet a fair amount (of offices) are staffed by people without the least trace of adequate capacity. As important are the influences of the international organizations which helped to drive the regional and country policies... we don't have effective niches or hotspots of innovation in any real sense, which can challenge sectoral operations" (Professor of Sociology and Caribbean Social Issues, UWI Mona, and a Former Government Advisor, personal communication, 2017).

Sectoral transitions in pre-independence and post-independence Jamaica have been both technological, such as in the introduction of sugarcane farming or the Bayer Process (with its associated bauxite exploitation apparatus), and economic, such as in the bauxite levy and the economic experimentations with land management regimes or agricultural exportation.

Transitions, in other words, were government-driven and landscape-triggered, but on no occasion niche-initiated. As in the Nauruan case, of the four transition pathways typology, only the *transformation pathway* scenario can explain sectoral changes in Jamaica. Socio-technical sectors were configured, and re-configured, by government institutions. Niches or innovation networks in agriculture, in the plantations, in the extractive minerals industry, never evolved to challenge incumbent regimes. Pressures exerted from the landscape – the oil crisis, Marxism, the IMF – and from the state remained the principal forces driving changes. "Niches will not do the work", a Senior Government Official and Advisor to the Prime Minister accentuated, "bottom-up innovation is a property of well-developed states... in here (in Jamaica), only proper governance, and proper politicians will reform the country and restructure failing sectors" (personal communication, 2017).

The agricultural and plantation sector

Recently, they tried. In 2005⁸⁴, the government considered to shut down the sugar industry, to fit with the regional trend. Previous years saw Trinidad and Saint Kitts closing their sugar facilities. Advisors also recommended the move. Yet the Jamaican government chose to restructure the sector. It initiated the Jamaica Country Strategy (JCS) for the adjustment of the Sugar sector (Jamaica Country Strategy for the Adaptation of the Sugar Industry 2006-2015). At the time, the government owned 71% of the sector with positions in Frome, Monymusk, Bernard Lodge, Trelawny and Saint Thomas sugar estates (ibid). The main objective was to privatize the production and diversify the cultivation with other crops. A second goal was to enhance the environmental performance of the contaminating sector. A third goal was to improve the social sustainability aspect of the industry, with investing in Sugar Dependent Areas (SDA).

The strategy speaks in the language of transitions theory, which emphasizes the role of government institutions in transitions further. "The country strategy was the first ever national effort to address all the sustainability-related issues of the agricultural and plantations sector: the environmental, the social and the economic" (Senior Government Official, personal communication, 2017). New production measures were set and new interventions promulgated. The newly erected Sugar Area Development Programs (SADP) provided various social services at the estates. Investments were made into education and infrastructures to diversify the sector. Environmental permits were granted to limit deleterious environmental practices.

However, to make the transition a sustainable one, other critical measures were overlooked. "The externalities of sugarcane production expansion were not deliberated by the planners... the impacts of production expansion on energy consumption and water resources were similarly neglected" (ibid). In 2008, a Ministry of Agriculture and Fisheries inspection reported on frequent discharges of untreated sewage from sugar and rum production into rivers and on sugarcane burning; an often-practices solution for cane waste. The sector as a whole continued to exhibit "a total lack of compliance with environmental regulatory requirements for almost two decades" (ibid).

⁸⁴ Coincidentally, that was the year of marked intervention in Nauru. See Part 3, Nauru.

Policy analysts and policy experts indicate that the Jamaican government fared poorly to analyze and implement its strategies comprehensively. The agriculture and plantations system "still dominate all aspects of Jamaican life" (ibid), but without sound governance. "Jamaican civil servants are thinking in silos. We're not thinking comprehensively. We're not thinking holistically. This is the sort of thing that you will find in the field of agriculture, and mineral mining, and education, and in the field of scientific research" (Former Senior Advisor to the Seaga Government, personal communication, 2017),

Recovery, in the balance

Following on the Jamaica Country Strategy, four years later, another attempt was made to embark on a new and sustainable transitions period. In 2009, the country's most ambitious strategy yet was devised and published under the title *Vision 2030*. In its rhetoric, the plan is wide-ranging and progressive. It links the country's principal sectors of activity, and the Jamaican society as a whole, with a coherent interpretation of sustainable development and all the vital elements of adaptive policy making, such as a clear context of operations, specific and measurable development goals, distinct outcomes, and an implementation, monitoring and evaluation framework (Planning Institute of Jamaica, 2009). "Vision 2030 and thoughts of a real transition have kindled the imagination of the policy bureaucracy" (Senior Government Official, personal communication, 2017).

It puts forward a new national development paradigm. "Vision 2030 Jamaica introduces a new paradigm which redefines the strategic direction for Jamaica and puts us on a different path – a path that will lead to sustainable prosperity. The new paradigm will move from dependence on the lower forms of capital – our sun and sand... and exporting sub-soil assets and basic agricultural commodities... to development of the country's higher forms of capital – our cultural, human, knowledge and institutional capital stocks that will move us into higher stages of development" (2009:25).

But the question of sectoral and societal recovery hinges on more than just "fancy government strategies" (Economist and an Advisor to the Planning Institute of Jamaica, UWI Mona, personal communication, 2017). It depends, for instance, on institutional commitment. "It depends on preventing financial misappropriation" (ibid).

Policy inconsistencies in the past already resulted in failures of cooperativization, nationalization, government control, and privatization since the 1970s. Illadvised interventions have damaged the agricultural and extractive mineral sectors. Bauxite facilities as well as estates have tipped over and capsized. In turn, sectoral failures led to unsustainable economic and social transformations, and a neglect of the environment. Since the 1970s Jamaica has experienced decline.

Unsustainable transitions in Jamaica

What has prevented Jamaica from leading more sustainable societal and sectoral transitions? What lessons does its transition history broadcast? "Well, politics went wrong", a Senior Government Official stressed (personal communication, 2017). The political parties, the PNP and the JLP, expended a huge amount of the country's vitality and vigor in political squabbles that got worse and worse in the 1970s and 1980s, and did a lot to derail implementation of the development plan of the 1960s, and those which followed. "The governments of the 1960s extended a fair amount of state resources to look after its own voters, and putting down projects with clear political advantages" (History Professor, UWI Mona, personal communication, 2017). One of the first things that elected officials of the 1972 elections did was to launch a commission of inquiry into the corruption of the governments of the 1960s. The committee unearthed fraudulent, at times criminal, practices of the recent decade (the DaCosta Committee Report, 1973). "What contemporary scholars label nowadays as political tribalism which had its genesis at the 1960s is, in fact, as old as the 1940s' political parties" (Senior Advisor to the Government, personal communication, 2017). After independence, it degenerated further.

In addition, the country was "caught in a hurricane of development financing" (ibid) that has affected many other developing countries in the Global South, in South America and sub Saharan Africa and East Asia. It was a critical problem. Most of these countries, including Jamaica, arrived at independence as monocultures or mining states, depending on oil or copper or some other mineral, or on plantations of some sort. Jamaica had sugar, bananas, coconuts, bauxite and "its ambitions outstripped the local capacity" to deliver on the possibility of rapid development (ibid). Indeed, some geopolitical developments, far outside its sphere of control, injured it.

Impetuously, Jamaica entered into massive borrowing arrangements against its agricultural sector. Rather than progressing its vision, and due to impatient political leaders, Jamaica was sucked into a vortex of debts. Leaders ventured to drive development not by internal capitalization of assets, not by enhancing competitiveness, not by promoting socio-technical niches or networks of innovation, but by external resources, at the cost, and risks, of instable interest rates. This was not unique to Jamaica. It was a development path built on raw materials and commodities (Former Senior Employee of the Planning Institute of Jamaica, personal communication, 2017; Senior Government Official, personal communication, 2017; Former Advisor to the Seaga Government, personal communication, 2017). In this sense, it is similar to Nauru.

Map 8. Satellite image of Jamaica, contemporary. Source: National Geographic MapMaker Interactive (Open Source).



There was no way, from the economic base pre-independence, that the visionary development seen in the 1963-1968 plan could be carried off in a short span of time. But politicians raised expectations, discounting the gap between promise and possibility. These accounts have defined third world development for many years.

In the political theatre, unfulfilled promises and a socio-economic lift which did not take place, sponsored the opposition to Manley in the late 1970s. His "Better Must Come" slogan pushed him to spending more foreign money on inconsistent, short-

sighted development policies. After the 1970s, "Prime Minister Manley was fiercely adamant that he will not go to the international-level agencies, he insisted that Jamaica is not for sale", manifested in his famous slogan "we are not for sale". In the late 1970s he had little choice but to seek for financial aid abroad; not to invest in development but just so that the country could stay solvent. It was survival money (Former Advisor to Prime Minister Manley, personal communication, 2017).

A third unfavorable internal factor was the incapacity of the state to manage development and run projects scrupulously. A part of the corruption in the 1970s was found in the management of World Bank loans which were allocated to build scores of educational facilities and class rooms across the country. "It turned out that final expenses overshoot the initial budget by 100 percent. Part of it was because people pocketed money" (ibid). But the DaCosta commission report (Government of Jamaica, 1973) found that part of it was by dint of bad management. There was a handful of people in Jamaican planning authorities overseeing the construction and operations of 50 schools across the island, they simply could not do it. "This same behavior was noticeable in sugar estates and banana plantations and non-traditional agricultural sectors and what not" (ibid). "When these politicians came to ascendancy, they got rid of the more experienced civil servants. Manley wasn't any good, not him and neither Seaga. Manly made some genuinely bad choices with people to run his Ministries. And these guys rarely understood the difference between policy and management. And that is still a problem" (Former Advisor to Prime Minister Seaga, personal communication, 2017).

This same behavior was observable across the decades too. In 2008, a corruption assessment found the agricultural and plantations sector to be the most vulnerable to corruption and cronyism (USAID, 2008). The subtext of the DaCosta commission and of later reports is not about corruption, it is about the powerlessness of government to deliver on public promises. The reports say so repeatedly. That the administrative, managerial and technical capacities did not exist in the public service. This is evident in harmful and erratic interferences in the agricultural sector and to a larger degree in the mining sector.

Sectoral collapses, unsustainable debts, joblessness, poverty and partisan politics, damaged society. "Jamaica has underperformed its neighbors... the issue is an internal one, and very persistent... real progress remained out of reach... we have come up dry compared to similar societies, in similar settings, at the same time... we

administered our affairs poorly" (Senior Government Official, personal communication, 2017). Crime is critical predicament. "Our history of slavery had fostered a macho culture that can lead to violence against women and children. Slaves were not allowed to form family bonds and has, to a large degree, helped to establish a culture where certain men abandon their children. Hence, many grow up poor and, I would say that child sexual abuse is common. Fatherlessness has led to issues amongst boys and we are facing a situation among our males of underachievement and criminal behavior. Nowhere is this more apparent than in Jamaica. Jamaica has had a history of violence that began taking hold in the rest of the Caribbean in the past decades. As such, children grow up exposed to violence, become inured and perpetuate the violence themselves. Like the rest of the world, the main victims and perpetrators of crime are male youth. It is not uncommon for boys as young as eight to seek 'rite of passage' to manhood by killing someone. While most developing countries battle the lack of access for girls, we have the opposite problem; we have to advocated for our boys since our education system is filled by 70% females" (Professor of Sociology and Caribbean Social Issues, UWI Mona, personal communication, 2017).

Descriptions of domestic decline are abundant. In his inquiry into post-independence Jamaica, to the heart of ghettos and farmlands, Thomson (2009:6) was set to answer the question "what has Jamaica done with its independence?". Examining the degree to which people hold local institutions accountable to development outcomes, social and economic, since 1962, he conveyed a definitive answer: "Jamaica stumbled in the years following independence... it is a baneful place... and a failed nation... the burden of Jamaica's postcolonial political failure... lies not with the United States or with slavery or British imperialism, but with the Jamaican people themselves. A system of clientelism has evolved in the years since independence, in which patron-politicians provide their client-supporters with jobs, protection and a flow of money, as well as narcotics and firearms, in return for their loyalty... the failure of local politicians to use independence virtuously has become entangled with a culture of violence... for most Jamaicans, independence in 1962 brought only disappointment" (ibid:4-11).⁸⁵

⁸⁵ Thompson's reporting gained him a reputation of "a xenophobe and reckless author" by Jamaicans (History Professor, UWI Mona, personal communication, 2017). Nonetheless, the book substantiates its conclusions in three comprehensive field campaigns across the island's parishes, over several years. So, the critique is difficult to dispel.

"It is a failed nation", a Former Government Advisor stated, "a fiasco... it has been so since the late 1970's... (due to) government meddling, embezzlement, and scarcity of aptitude in managing the economy, agriculture, mining, tourism, everything" (Professor of Economics and Former Government Advisor, personal communication, 2017).

Following in his footsteps to the sugar dependent areas, this study too, observed languished owners and farmers, mourning the decline of the island's agriculture, the "ruinous state in general of Jamaica agriculture" on which Thompson reports (2009:49) and the loss of know-how. "It's our responsibility", a Farm Owner underscored, "we neglected future generations... all the good people left... we've lost the competence" (St Andrew Parish, personal communication, 2017). "We are a bankrupt country", a Former Senior Advisor to the Seaga Government lamented (personal communication, 2017), "without remittances we would be gone".

This loss of human capital to the benefit of other nations, is of the symbols of Jamaican societal decline (or unsustainable societal transition), and by ways of vicious cycles, it depleted the island from its other assets in a most practical sense.⁸⁶ In 1989, Jamaica's renowned educator, Errol Miller concluded the social developments of the 1950s and early 1960s in his *Educational Development in Independent Jamaica*. The fundamental transitions, he writes, has happened in the extent of the educational system, now, a more comprehensive and far-reaching system than it ever was under the colonial crown. Miller finds evidences that pedagogic standards improved since 1962. The post-independence expansion of the educational system has progressed in-lockstep with qualitative advances. It is a productive system that meets higher standards. However, Miller turns to curtail much of his own enthusiasm in the proceedings of the report. He indicates lingering gaps and chronic human capital deficiencies. In a real sense, he wrote, the values, attitudes, norms and notions that informed educational developments in Jamaica (after 1962) have been those that were articulated by the expatriate government of the early 1940s. Little critical thinking has taken place. This underpins Jamaica's weak drive for economic progress, eroded social cohesiveness, and it clarifies why,

⁸⁶ "We have many social problems", a Professor of Sociology maintained, "major amongst these are our high rates of crime and violence because the Caribbean lies along the drug transshipment route between South and North America. Our large body of water between islands are perfect to escape drug interdiction, high unemployment in general, a large unemployed youth population, make us ripe for complicity in the drug trade" (Professor of Sociology, UWI Mona, personal communication, 2017).

eventually, what has been achieved has not diverged enough from the aims that directed educational delivery in history.

With no talent, the management of the estates, of plantations, of other productive sectors, and the introduction of technologies and innovations, have diminished. "You cannot assume radical innovations in any sector to come into flower under such conditions, not least to challenge the way that sectors are organized" (professor and senior government advisor, University of Technology, Jamaica, personal communication, 2017).

A Maroon community spoke of "an unending decline of Jamaica, of agriculture, of economic affairs" (Maroon community focus group, Portland Parish, personal communication, 2017), and stressed that "Jamaica and its people, and its lands, will rise and fall together... the escape of qualified, entrepreneurial, self-motivated men... the loss of skill... it all resulted in the pollution of the environment, the depletion of resources... the corruption of the land... in crumbling factories, abandoned farmlands... (it resulted in) dishonesty, the lack of trust... (it) will continue to impair a wrecked island".

Are Jamaica's sectoral and societal transitions representative of other developing island states? Can observations elicited from Jamaica; the insignificance of niches, the rigidity of socio-technical sectors, the clout of government institutions, the bearings of landscape developments to local transitions, explain changes in other countries; in larger developing island states? Alternatively put, are the *transformation transitions pathways* of Nauru and Jamaica typical of larger developing islands?

The Jamaican experience helps to expand further the geographical, historical and social terrain of transitions theory. As in the case of Nauru, the transitions of Jamaica's extractive mineral sector and agricultural sector do not find the multi-level perspective unusable. Quite the opposite, the case study shows its relevance. Here too, the absence of niches assisted regimes to maintain their momentum, even as this motion was nocuous, socially and ecologically. Sectoral transitions in Jamaica, more economic than technological, require a modified transitions framework. One which interpret sustainable development in operational terms and incorporates some policy management principles.

A larger developing island state will help in validating the findings from Nauru and Jamaica, and should assist in identifying any necessary modifications in transitions theory.

Sri Lanka

20. *Historical background and conditions at independence*

Sri Lanka is the third postcolonial developing island state considered in this study. As Nauru, as Jamaica, modern Sri Lanka is a consequence of centuries of European expansionism, of British rule, of particular geography and climate, oppression and vassalage, religion and race. Paying tribute to these issues is a stepping stone to arrive at understanding the transitions of sectors, regimes and the Sri Lankan society in the 20th century. Only against this wide canvas of macro factors, can the niche-regime-landscape dynamics be analyzed and discussed.

Sri Lanka, or the Democratic Socialist Republic of Sri Lanka, is a developing island state in South Asia (7°00'N 81°00'E), some 50 kilometers south of India separated by the Gulf of Mannar and the Sethusamudram ("Sea of the Bridge"). It has a land area of 64,630 km², a water area of 980 km², a mountains terrain in the south and central interior and large coastal plains. The highest point on the island is Mount Pedro's Peak at 2,524 meters (Pidurutalagala), near the city of Nuwara Eliya and the tea country hills. Regionally, it is strategically located north of the main Indo-Pacific shipping routes (see maps 9 and 10 below).

Map 9. Location of Sri Lanka. Source: National Geographic MapMaker Interactive (Open Source).



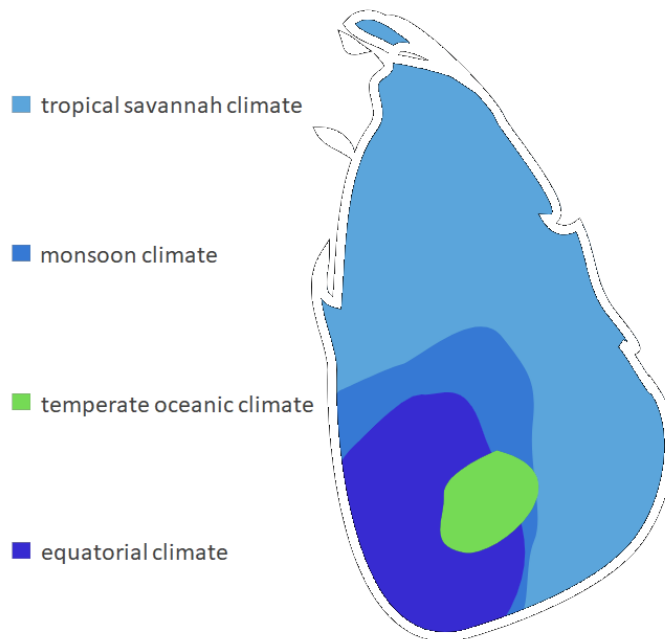
Its natural resources comprise of limestone, gems, some phosphate deposits, clay, and arable lands.

Map 10. Sri Lanka. Source: National Geographic MapMaker Interactive (Open Source).



According to the World Köppen Classification, the island has four major climatic regimes: tropical savannah climate in the north and north-east, monsoon climate in the central regions and central west, temperate oceanic climate in the highlands (the tea country hills), and an equatorial climate in the southern tip of the land (see map 11).

Map 11. Sri Lanka's climate regimes in the Köppen Classification. Source: Finlayson and McMahon, 2016.



Sri Lanka civilization is extremely old and the colonial history of the island is ancient and contentious. Originally, Sri Lanka was inhabited by the Yakkhas people. In the 6th century B.C.E., the Sinhalese, a folk from northern India, invaded the island, banished the indigenous people, established the Tambapanni kingdom, a Buddhist dynasty, and became the predecessors of modern Sinhalese. According to the Mahāvamsa (the Great Chronicle; Pali language), a compilation of antique records, a most important script in the Pali canon with a fundamental role in the formation of Sri Lanka's Buddhists and Sinhalese doctrine, and a text of excessive political influence, Sri Lanka was divinely bequeathed to the Sinhalese. The Mahavamsa, as Subramanian pointed (2015:185), is a text of several objectives, "one of them is to provide proof of... the enmity between the Sinhalese and the Tamils. Another issue is to supply the Buddhists with a moral imperative. Sri Lanka is, as decreed by noting less than the Buddha himself, the ultimate refuge of his faith, so any measure – even violence – is permissible in the protection of Buddhism". The text laid the foundations

and justifications for the forthcoming animosities between Sri Lanka's two ethnic camps: the Sinhalese and the Tamils.⁸⁷

Colonialism, agricultural transformation and the plantation economy

In the 14th century, the Pandya kingdom, a Tamil dynasty from India, invaded northern Sri Lanka to found a Tamil settlement. In the 16th century, the Portuguese assaulted the locals and conquered most of the western and northern areas of the island (known then as the Tamil Kingdom of Kotte and the Tamil Kingdom of Jaffna). The Portuguese named the island Ceilão. The Portuguese project was confined territorially to the coastal provinces, leaving the central Kandyan highlands with the Sinhalese kingdom. They traded indigenous non-plantation commodities including cinnamon, areca nut, pepper, cardamoms (a spice), and ivory. Their economic affairs had left little mark on the native modes of production, other than exposing the locals to foreign trade (De Silva, 1953; Wickramasinghe and Cameron, 2004).

In the 17th century, after 150 years, Portuguese Ceylon was attacked by a coalition of the Kingdom of Kandy, a Sinhalese stronghold at the center of the island, and the Dutch. In 1658 the Portuguese territories were ceded to the Dutch who renamed it Dutch Ceylon, and governed the land through the Dutch East India Company. The Company extended its economic reach in the island; expanded semiaquatic rice farming (paddy field cultivation), coconut agriculture and cinnamon production (De Silva, 1953; Jayawardena, 2000).

In 1796, after a defeat to the British colonial forces, Ceylon was abandoned by the Dutch and became a crown colony. The monarchy vanquished the last Kandyan

⁸⁷ The reason for the animosity between the Sinhalese and Tamils of Lanka remains an enigma. The Tamils of Sri Lanka (Damils) were courteous and non-violent, led by a kind and just king, who employed his powers to rule fairly to friends and foes. He visited at Buddhist monasteries, and feed communities of Buddhist monks (The Mahāvamsa, chapters XXII-XXIII). And yet tensions and antagonism festered with no apparent, documented reason. King Dutthagamini the Sinhalese finds his arch-rival in King Elara the Tamil; pledges to slain him, and makes a solemn promise to eradicate the Tamils. In the Mahavamsa, he is encouraged by a clan of enflamed Buddhists, and a supporting mother, to do so. Dutthagamini, it is critical to note, is not a historical figure solely. He is much present in modern day Sri Lanka. The government remembers him; it commemorates his legacy in naming roads, streets, schools, hotels and restaurants after his name. President Mahinda Rajapaksa, upon eliminating the LTTE, evoked his spirit from the heavens to celebrate his own triumphs, suggesting, that the slaughter of Tamils in the name of Buddha is a contemporary practice too, and a desirable one.

resistance in 1815 and ruled the entire island between 1815 and 1948. As a crown colony, Ceylon's socioeconomic structure was transitioned from a pre-capitalist feudal configuration to a capitalistic economy of various types and modes of agricultural production, and a prosperous tea plantation subsector (De Silva, 1953; Jayawardena, 1972; 2000).

Wickramasinghe and Cameron (2004) divided the British colonialism of Ceylon into two separate periods which they refer to as the mercantile period and plantation period. The mercantile period, which lasted until the middle of the 1830s, presented the trade of agricultural surpluses, mainly from cinnamon, under the British East India Trading Company.

The British East India Trading Company, a mercantilist monopoly, stifled any sort of local and independent entrepreneurial activity as well as private investments. By and large, economic pursuits in Ceylon rested on the traditional mode of agricultural output.

Landscape developments; the rise of the industrial age, the expansion of economic activities in Britain and the demand for raw materials and foodstuffs grown in plantations; coffee, tea, cocoa, sugar, bananas, transformed agricultural sectors in many crown colonies, including that of Ceylon (De Silva, 1982).

The new economic zeitgeist of laissez-faire advocated by proponents as Smith, Mill and Marshall, took hold of the public sphere in England and was manifested in the foreign policy of the Empire (Bandarage, 1983). In Ceylon, the Colebrook-Cameron Commission of Inquiry sought to re-configure every aspect of the colonial rule including the structure and orientation of the economy, the capital, land and labor (Jayawardena, 2000).

The commission arrested the practice of forced labor, introduced land listing, and levied new taxes on cinnamon and fish. The major transformation was in the plantations subsector, which relied heavily on state support and foreign-innovation. Ceylon's tea plantation, as Beckford noted (1972), were a particular economic method in which capital and techniques were imported from one state, labor was imported from another, and the hosting country provided land and meteorological conditions. When the sector was still nascent, Ceylon's lands were readily and freely available. "Planters had almost a free hand in the choice of location and extent of their plantations, or 'estates', as they were popularly known" (Wickramasinghe and

Cameron, 2004:6). Planters were British, and all too often, government officials which bargained for their vast estates at minimal costs in the island's most favorable locations – the Kandyan highlands (Bandarage, 1983; De Silva, 1972).

The diffusion of crops and equipment was made possible through the agency of the state, creating a new socio-technical agricultural regime that was tailored to the needs of the British and the circumstances of Ceylon.

The new plantations sub sector was labor intensive but the islanders were reluctant to join the estates. The Sinhalese socioeconomic structure was one in which all households, excluding the aristocratic caste and Buddhist monks, cultivated their own subsistence gardens. In contrast to South India, "there were no landless agricultural labor castes in Kandy" (Bandarage, 1983:174). Each household grew some rice and vegetables for its own consumption. These households, Pieris (1956) and Seneviratne (1978) argued, were satisfied with these conditions, and did not present with noteworthy radical agricultural innovations. In the coastal settlements, both Sinhalese and Tamils were engaged in a wide array of commercial activities in addition to paddy farming and fishing (specifically in the north and north east), and were generally uninterested in moving inland. So British Ceylon was short in labor.

In 1841, Judge Baynes in British Ceylon, wrote "Labor here is somewhat scarce and (at) high price and (is) not to be depended on" (in Tinker, 1974:70). A contemporary British writer named Steuart, noted that "in England the study of the statesmen is to find employment for the poor, while in Ceylon the difficulty is to find poor to employ. England has not sufficient land to produce food for its manufacturing people, while Ceylon has not sufficient laboring population to cultivate the soil for English capitalists" (in Pieris, 1952).

In 1855, Sir Henry Word, Governor of Ceylon, wrote "the attempt to induce the native population to take part in those improvements that have converted the jungle into thriving plantations upon which an enormous amount of British capital and enterprise has been expended, has so failed so entirely that the whole of the work of plantations is carried on by immigrants labor (from South India). No amount of wages, no hopes of prospective advantages, no desire to improve their conditions by imitating habits of their European neighbors, have acted as yet upon the Sinhalese mind, or roused the people from their apathy. With wants easily satisfied, and a fertile soil subdivided into small holdings, they can always command the absolute necessities of life and seem to look no further" (Sri Lanka National Archives, 1855).

To provide the plantations with sufficient labor, the British planters turned to the British East India Trading Company, which then turned to south India to seek for low-priced labor; a practice it has already exercised for the supply of labor for the cotton industry in England.

The Indian society was very conducive for such an arrangement. "In India, 'labor-hunting' was a term used in government reports... a recruiting agent and several sub-agents scoured the villages, drumming up hopes of a bright future and using every possible stratagem to increase their catch" (De Silva, 1982:237-239). The Ceylon crown colony provided ships, the planters provided the financial capital, and the South Indians of Tamil Nau provided the labor (Wesamperuma, 1986).

When they have arrived at the estate, Indian Tamils were shackled to the plantation and the highland village. The British planter used a middleman, or an overseer – a "Kagany" – for the transfer of salaries. The Kagany paid the estate Tamils at his own decision. "The Kangany... was the sole source of supply of labor to plantations in the early period of plantation development... he was the link and the wall between management and laborers... he was the patron to the gang of laborer he brought from South India" (Wickramasinghe and Cameron, 2004:7). He was the face and method of the system of control.⁸⁸

The immigrant labor, referred to in modern Sri Lanka as Upcountry Tamils, or Indian Tamils, had no means to form a free, not to mention unionized, labor force. The plantation communities arrived in family units, they were provided with free housing, free education, some basic healthcare services, sponsored nurseries, some food rations, temples and gardens. In addition, the Singhalese police (the Mudliyors) helped the estate owners to keep the Indian Tamils in the plantations (Jayawardena, 2000). They were, and still are, captive, moored to the system of wages and debts. De Silva (1983:331) noticed that, "plantations laborers not only produced crops but grew up, married, saved, consumed, quarreled, co-operated, and died in the plantation to which they were tied".

⁸⁸ The system of control of labor was multi-layered: when the South India Tamil immigrants arrived at the tea estates, they were clustered into sub-gangs under family heads, which was called a 'sub-kangany'. All the Tamil laborers in the sub-kangany gang belonged to the same Indian caste and broad kinship group (see De Silva, 1982; Hollup, 1994).

Under these circumstances, neither the planters nor the laborers had strong incentives to challenge the agricultural mode of production, the "way of doing things", or the socio-technical regime.

Innovations at the plantations, biological and technical, were grossly un-observed for the greater duration of the 19th and early 20th centuries, and what drove sectoral transitions, when they occurred, was the central colonial government.⁸⁹

Lal and Myint (1998:20) highlighted that "the rapid establishment and evolution of the plantation sector created a great demand for labor, which was provided by Indians who migrated into Sri Lanka... by the 1880s approximately 200,000 Indian Tamil estate workers and their families were settled in Sri Lanka. In the 1930s there were perhaps 400,000 Indian Tamils working the plantation sector. By independence in 1948, the Tamil Indian population was approximately 800,000, about 11 percent of the total population".

The British created a dominant and innovation-resistant design for the agricultural industry, which was maintained by the Sri Lankan government.

Beyond tea (during the 20th century Sri Lanka became the world's largest tea exporter), the plantation sub sector also included coconuts and rubber, the latter introduced to the island in the late 19th century (Bandara and Jayasuriya, 2007). While tea is labor intensive, requiring frequent care, rubber is considerably less labor intensive and coconuts demand even less attention. Lal and Myint (1998) stressed that the everything regarding the organization of the plantations was foreign, except the lands. Foreign capital, foreign entrepreneurs and foreign labor run the sub sector (Professor of Agricultural Economics, University of Peradeniya, personal communication, 2017).

Outside the plantations, the agricultural economy of Ceylon remained largely undisturbed. According to Wickramasinghe and Cameron (2004) in the 17th, 18th and 19th centuries, non-plantation agriculture survived as a separate mode of production. This system facilitated three main agricultural activities: paddy cultivation, chena farming (*Amorphophallus paeoniifolius*, also called the Elephant Foot Yam), and cinnamon which expanded rapidly and was destined for exportation (Jayawardena, 2000). These agricultural affairs were principally restricted for the Sinhalese.

⁸⁹ To this day, there is a group of Indian Tamils settled within the plantations. Despite stark differences in lifestyles, both Tamils speak the same language and practice the same religion.

Bandarage (1983:291) stated that "rather than becoming wage laborers on European plantations, the Kandyan peasantry adopted themselves to the new colonial political economy by taking up small holding cash crop production. This enabled them to maintain a certain distance and independence from the surplus appropriators present in the other modes of production".

Reflecting on the technological components of the non-plantation agricultural regime, Lal and Myint (1998:22) stated that "the village farmer raised paddy in quantities sufficient for his own needs. He may have had a coconut tree or two or possibly some rubber trees. His technology had changed only slightly over the years. Paddy yields in particular remained low and unchanged over long periods of time. The peasant economy, indeed their entire society, was dominated by paddy".

Independence, aggressions and skirmishes

At the north of Ceylon, during the 19th century, and by no wrong doing of their own, the minority Sri Lankan Tamils found themselves unfairly advantaged by the colonialists. Whereas in the south of Ceylon British administrators built schools and offered education in Sinhalese, in the north, where the Tamils were concentrated, American and Christian missionaries offered the local Tamils education in English. Since under the British rule, the language of administration and higher education remained English, the Tamils benefited from easier access to education and to the civil service. Tamils, many of whom are Hindus, Muslims or Christians, were always considered unwelcomed residents by the majority Sinhalese. They had "come to the island, in peace or during invasions, from kingdoms in South India", from Tamil Nadu (Subramanian, 2005:38). In the late 19th century, English speaking Tamils became Ceylon's favorite citizens. That favoritism intensified cultural and religious frictions.

During the 20th century, the Sinhalese gripe grew about the disproportionality large number of Tamils studying in the country's best universities and employment with the government. In 1926, S.W.R.D Bandaranaike, who in 1956 became Sri Lanka's fourth Prime Minister (and passed the discriminatory Sinhala Only Act) wrote: "the minorities looked with mistrust at one another. A hundred years ago, there were no such differences. They did not appear because the Englishman sat on the heads of Tamils, low-country Sinhalese and the Kandyan Sinhalese. The moment they began taking the government in to their own hands the differences that were lying dormant

smoldered forth. In a Federal Government, each Federal Unit had complete powers over themselves. In Ceylon, each province should have complete autonomy" (Uyangoda 1994:96). But under the British, Sinhalese criticism remained latent.

Ceylon gained independence in 1948. It will be renamed by the government to become Sri Lanka in 1972. With independence from the British, came the representative democracy, and with it, majoritarianism, the Sinhalese-Buddhist bigotry, and the Buddhification and Sinhalese chauvinistic undertakings. Ceylon's Sinhalese, making 70 percent of the population, found themselves in control of the island. A state of affairs in which a minority occupies both academia and the civil service was uneven, in their view, however based on merit, and therefore unfair to endure.

In 1956, the government passed the Official Language Act No. 33, also known as the Sinhala Only Act, establishing Sinhalese as the official language of governance as opposed to English, thereby disfavoring non-Sinhalese speaking people. In the 1950s and 1960s, Tamils were treated as peripheral, insignificant. Their access to public services was controlled and gradually narrowed. The language of domestic affairs changed to Sinhalese.

The 1970s were the high watermark of nationalism and partisanship. By 1971, Sinhalese nationalism grew fiercer. The government enacted the policy of Standardization for admissions to universities. The new scheme intended to enable disadvantaged students to attain education, but with little public investments in new colleges, a reform had to be made within existing schools and quotas. The policy set high qualifying marks for admission to universities for Tamil applicants, and low qualifying scores were applied for Sinhalese, since most of the Sinhalese lived in the underdeveloped countryside. In effect, Sinhalese students gained the seats of Tamils. For Tamils, the standardization policies, unwarranted and harmful, proved remarkably effective: in 1969 when Tamils comprised around 20% of the population, they formed 50% of the student body in Sri Lanka's medical colleges and 48% in its engineering colleges; by 1983, those numbers had dropped to 22% and 28%.⁹⁰

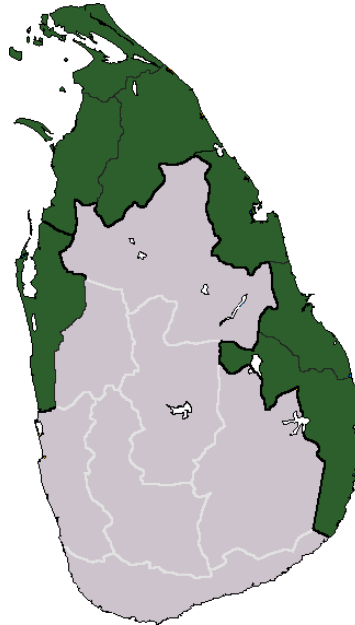
⁹⁰ In a revealing passage in Subramanian, (2005:213-214), Buddhist monks admit: "It is true we are racists. It is true we are religious fanatics". "This concept of (a) traditional homeland of the Tamil is a baseless concept", they added, "there is no traditional homeland here for the Tamil".

Historically, the Tamils hardly abused the political system for their own benefits, nor have they marginalized Sinhalese or Buddhists of public services. Nonetheless, instead of seeking peaceful and progressive affirmative action policies, once in power, Sinhalese politicians and their Buddhist endorsers chose an aggressive, discriminatory, and narrow-minded method of governance.

In 1972 the government ratified the new Sri Lankan Constitution. Buddhism was given the 'foremost place' among Sri Lanka's religions. A harsher language-based quota for university admissions was presented in the constitution, continuing to push Tamils out of the higher education system, and by a second-order effect, pressing entire families of highly-educated Tamils – medical doctors, engineers, legal and financial scholars – to emigrate, depleting the island of its human capital stock, and tearing the social capital fabric. The Tamils who could emigrate to England, to the United States or to Canada, did. Those who had to settle for other countries, developing countries, moved to India, to the Emirates of the Persian Gulf or to Nigeria. The Tamils who did not have the funds for the travel stayed in the North and the East of Sri Lanka, classified as second-rate citizens. Some Tamils, protested. Tamil political parties pushed for complete sovereignty instead of provincial autonomy (see map 12). Other Tamils, protested ferociously.

Dissident factions in the Jaffna area maintained that a sovereign Tamil state – an Eelam – "could never be wheedled out by political procedure and that it was far better demanded from behind the comforting stock of a gun" (Subramanian, 2005:39). In 1973, a Tamil radical cell led by the charismatic Velupillai Prabhakaran – a young Tamil from the Jaffna peninsula – emerged to put forth a determined, revolutionary, effort for a free Tamil state. During the early 1970s Prabhakaran's Liberation Tiger of Tamil Eelam (LTTE) found only a handful of eager recruits.

Map 12. Tamil Eelam Self-Declared State, in green. Source: Wikimedia Commons (open source).



In July 1983, known as Black July, the Sinhalese retaliated on an LTTE ambush where 13 soldiers were killed. 3,000 Tamil people were slaughtered by Sinhalese mobs, many of them burned alive, as the government stood idle. Tamil households, Tamil families, stores, factories, institutions, were looted and burned. Some 100,000 Tamils were dispossessed, became homeless and displaced. Amarasingam and Bass (2016:2) attended to that watershed moment. "Hundreds of Tamil businesses were burned, homes were destroyed, and many were beaten, shot or burned alive in their houses or vehicles. Many women were... raped or forced to exhibit themselves in front of heckling crowds of people... some 100,000 Tamils (were forced) into refugee camps after their homes, vehicles, shops and belongings were destroyed. Around 30,000 people became unemployed owing to damage to their places of work".

"After black July", Subramanian writes (2005:38), "(the LTTE) was flooded by young men and women wanting to fight... the Tigers grew into a fearsome terrorist organization. They ran arms and drugs, pooled in funds from a Tamil diaspora scattered across the planet, killed thousands of civilians, assassinated a president and a prime minister, and perfected the art of the suicide bomber. They kept their

own people, the Tamils, in-line by intimidation and murder". The whole of Sri Lanka descended into a vortex of violence and suspicion.⁹¹

Trust, a critical commodity in any society, was diminishing by the year. A brutal civil war "bent the very word 'regular' almost unrecognizably out of shape... A regular day (involved) keeping your children from being conscripted by the Tigers... or being wary about buses that might have bombs planted within then" (ibid). With fading mutual trust, Sri Lankan's wellbeing degenerated further. Tamils' wellbeing collapsed.

As the conflict went on, Sri Lanka saw more chaos and carnage. A complete and utter loss of general trust – perhaps beyond repair, and de-humanization of Tamils by Sinhalese. In the 21st century, in the definitive years of the LTTE, "Prabhakaran became the fulcrum of Eelam (and) the movement was no longer about what was best for Tamils but about what was dictated by his whims and delusions. He... refused to trust his closest colleagues, executing any Tiger who displayed even a tinge of insubordination" (ibid:240).

Towards the final confrontation in 2009, scores of displaced Tamils were trapped in fire zones, squeezed between a Sri Lankan army hammer and an LTTE anvil in the east. Serving as human cannon fodder. The Sri Lankan government contended that only 70,000 civilians were caught in the fighting area. In contrast, the United Nations estimated the figure to be closer to 350,000 (ibid:254). Although no fire zones (NFZs) have been declared by the government in the period from September 2008 until the end of the conflict in May 2009, tens of thousands of Tamils who sought refuge in the NFZs were victims of indiscriminate shelling, or, as many argue, intentional civilian targeting by the army.

The extrajudicial genocidal tactics of 2009 coupled with present-day surveillance and terror employed by the government security apparatus, prevented – and continue to prevent – the transition from wartime to postwar to realize fully. The society is engulfed in trauma and angst. Discrimination lingers on. Tamils' suspicions are warranted: activists are made to disappear regularly, journalists are muted and

⁹¹ The Buddhist clergy, the spiritual leaders of most Sinhalese, and prime sponsors of chauvinistic politics, established a radical wing too. Buddhist monks entered politics and some Buddhist statesmen pressed for a more merciless war, and fantasized of a purely Buddhist land.

criminal investigations are censored, silenced. Reporters are being taken from their homes, tortured for any number of hours, and dropped off at the office.

Postwar Sri Lanka is a "state that... instead of ushering in ethnic reconciliation, political equality and economic distribution, chose to systematically and purposefully create conditions for a further sharpening of ethnic divides and a deeper marginalization of Sri Lankan Tamils, Muslims and upcountry Tamils" (Amarasingam and Bass, 2016:223).

Amarasingam and Bass (2016:4) argued for a complete sway of government over social affairs. "Until his loss in the presidential elections of January 2015, postwar Sri Lanka was synonymous with Rajapaksa's Sri Lanka... with his extreme nepotism and corruption, attacks on the media and NGOs and erosion of government institutions that endured decades of ethnic conflict and war". Massive political capital, and economic capital, was ill-managed and poorly invested. A peace dividend, in the form of inclusive social and economic development, was never delivered by the state, neither in the conflict years, nor in their aftermath.

21. *Regimes and sectors of importance and consequences*

The history of Sri Lanka points at the central role of agriculture in its societal progress. Lal and Myint (1998) argued that the background most germane to the story of Sri Lankan socioeconomic development, or indeed underdevelopment, is that of the agricultural and plantation economy. In the 20th century, the sector constituted the largest employment category. The Sri Lankan economy was entrenched in paddy cultivation and tea, rubber and coconut plantations. Bandara and Jayasuriya (2007:4-5) noted that although "the shares of the agricultural sector in gross domestic product, employment and exports has declined progressively from the 1950s... the sector remains a major source of income and employment of a large proportion of the population, and a significant source of national export earnings". "Until the late 1960s", they added, "agricultural commodities accounted for more than 90 percent of Sri Lanka's exports".

Furthermore, Jayasinghe-Mudalige (2010) contended that agriculture had a specific intended role, or rather a typology of roles, in the case of Sri Lanka's societal transition, a typology suggested by Myint. According to the Myint hypothesis, as Sri Lanka went through structural transformation, there were four functions to be played by the work of the agriculture sector. These four functions include the provision of food security (i.e. annual production of food per capita), labor mobility (i.e. movement of agricultural laborers to other sectors), capital creation and accumulation (through domestic savings), and trade of surplus (in tea, coconuts, rubber, cinnamon, rice) for foreign exchange.

In postcolonial sovereign Sri Lanka, as in Jamaica, the literature, the policies and the informants and focus groups of this study⁹² pointed to agriculture as the single most consequential sector necessary for the understanding of societal transitions, of the leverage of imperialism over the local society and demographics, of ethnic discriminations, of the influence of state in transitions, and of the interplay of landscape forces, regimes and niches.

Requested to also recognize the years when the agricultural and plantations sector underwent significant transition, interviewees and focus group participants underscored 1977 as the year in which a change in the arrangement of the sector occurred; an economic change, not a technological one, but significant still. Hence,

⁹² More than 70 individuals surveyed for this purpose.

the period of 1948 to 1976 is viewed in this study as the first transitions phase. The time span of 1977 to 2009, when the fourth Eelam War, or the Sri Lankan Civil War has ended, is considered the second transitions period.

22. *The first transitions period: independence and experimentation*

In 1948, Sri Lanka had enjoyed a lively democracy, a high level of human development, well-functioning educational and healthcare systems and a comparatively prosperous open agricultural economy. De Silva (1981) viewed it as an oasis of stability in a region of disorder. Athukorala and Jayasuriya (1994) believed it was superbly positioned for brisk social development. Nevertheless, island politics had quickly succumbed to intolerance and xenophobia.

The agricultural and plantation sector, disenfranchisement and policy inconsistency

The Citizenship Act of 1947, presented by the elected government of Ceylon commanded the complete disenfranchisement of the 700,000 Indian Tamils working in the plantations. Rights to lands and rights of suffrage were revoked. The act was driven by a fear of the United National Party (UNP) that the Upcountry Tamils would flock to a communist banner and assume large portions of the parliament (De Mel and Pathmalal, 2009; Oberst, 1988). In 1949, the Citizenship Act was followed by the Ceylon Amendment Act, intended to exclude Upcountry Tamils from citizenship (Uyangoda, 1994).

After independence, the Ceylonese government intervened in the agricultural sector often, experimenting a wide array of economic regimes, moving from free-market policies between 1949 and 1959, to a more directive government control over production (i.e. dirigisme) and practicing an import substituting industrialization (ISI) agenda from 1960 to 1977, and then later reversing to export oriented economic policies and sectoral liberalization, after 1977.

At independence, three plantation crops, tea, coconuts and rubber, controlled Ceylon's exports. Rice and wheat were imported. Exportation of some crops fluctuated over the first transition phase, with, for instance, more than 75 percent of coconuts being locally processed and consumed in an edible form and in cooking oil form. Some 85 percent of tea and 60 percent of rubber, on the contrary, were exported (Bandara and Jayasuriya, 2007).

The tea and rubber sub sectors were owned by foreigners until 1974 when they were nationalized, but throughout the entire period, the share of large plantations in the economy declined steadily. Coconuts production was domestically owned and organized in large plantations until 1977, and rice paddies were always dominated by small farm holders.

Lal and Myint (1998:33-35) calculated that in 1950 "there were hundreds of thousands of paddy holdings, most of which were extremely small, with land yields, and labor productivity, that were very low compared with estate agriculture and compared with yields in other rice-producing countries". In the plantations sub sector, they have argued that tea cultivation was an "unusually labor-intensive activity", and, reflecting on productivity, efficiency, agricultural technology and innovation in both sub sectors, plantations and non-plantations, Lal and Myint noted that "the technology employed in paddy growing was ancient... (and) the slow and sporadic growth of total production and of yields of rubber and tea suggests that these activities were confronting major technological obstacles" (1998:62).

Inefficiency was rampant. Technology was outdated and production traditional.

Tea cultivation and processing in Sri Lanka involves five consecutive procedures, commanding meticulous attention. Tea planting employs a contour planting method, in which tea bushes are seeded in horizontal lines to suit the topography of the steeply land. Once established, plantations need constant care, regular trimming, to control the form of the plant, and the frequent use of fertilizers, employed by men of the estate, who spray the crops with chemicals. Of the body of the plant, only the tips of the branches, two leaves and a bud, which keep the flavor of tea, are plucked, manually, by the laborers, typically women of all ages.

To this day, Sri Lanka entertains menial plucking, as opposed to mechanical picking, in which female laborers from the estate ascend the tea mountains, dawn to midday, and afternoon to dusk, clipping buds to prevent bush twigs to dampen the quality of the harvest.

Efficiency is, therefore, a consequence of experience, not technology, and older women, often 50 years of age, are capable of plucking tea buds at an astonishing pace, to gather some 15 kilograms of tea leaves and buds per day, which they store on their backs in a large cloth basket.

The third phase of the process takes place in the tea factory, usually at the same estate, which receives the daily harvest. The factory at the estate is a two-storied or three-storied construct, where all the remaining procedures occur. Inspectors sort the harvest to remove twigs, shrubs and damaged leaves. Inspected harvest is elevated to the top floor for withering, where skilled workers remove the remaining leaves.

The fifth phase, after planting, plucking, sorting and withering, all carried out manually, is rolling and splitting the tea leaves and buds to catalyze the plant enzymes to oxidize. Here, machinery is employed for rotation. The leaves and buds are transferred to fermentation tables, first exposed to room temperature and later are heated inside furnaces. The control of temperature at this sixth phase is crucial; exposing the harvest to humidity or temperatures above the industry standard spoils the entire harvest. After fermentation, the tea receives its final color, and is transferred to the bottom floor for the last two processes, grading and packing. In the grading phase, workers sort tea particles according to size using large basic metal strainers. In the packing phase, still in the factory, tea varieties, of color and particle size, are packed in different sorts of packages, and are inspected once again to guarantee quality, after which they are transported to tea auction houses. Exportation is at the discretion of the Sri Lanka Tea Board, which employs further quality assurance measures, samples, randomly, shipments.

Investments in the entire agricultural apparatus were essential, but reportedly limited to large irrigation projects, fertilizers subsidies and paddy farming.

Government intervention was mandatory, but, observably, miss-managed, partisan, discriminatory and inconsistent.

At independence, agricultural exportation levies served as a critical source of revenues for the government; approximately 30 percent of all tax revenues throughout the 1950s. Tea, rubber and coconuts financed government expenditures on healthcare, education and food subsidies in the non-plantation sector.

Taxes also sponsored agricultural research programs, subsidies for fertilizers and irrigation projects and were intended to protect import-competing food farming, predominantly paddy cultivation. These measures were installed as part of the country's inward-oriented development strategy of the 1960s and early 1970s.

Counter-effective, instead of supporting the agricultural sector, these measures aggravated the burden on export crops and did little to modernize paddy farming (Bandara and Jayasuriya, 2007). Ceylon's version of inward-oriented development and self-sufficiency was, in effect, rice self-sufficiency (Athukorala and Jayasuriya, 1994). The most notable public expenditure was on irrigation. During the late 1960s and early 1970s, water was provided to farmers, mostly Sinhalese, at no cost. To maintain price stability, the government imposed import quotas and high taxes on staple foodstuff.

Paddy cultivation and the Mahaweli development scheme

Rice farming warrants a separate analysis. Bandara and Jayasuriya (2007:21) claimed that it is the most "sensitive political commodity" in Sri Lanka. The 1948 government was able to sponsor universal rice rations. Five years later, in 1953, an effort to curtail rice subsidies, and thereby to slash public spending, nearly triggered a social uprising, and following efforts in the 1950s and 1960s toppled governments and politicians alike.

Paddy farming is interlaced in the Sri Lankan culture and carries symbolism of Sinhalese supremacy. The Sinhalese civilization of the ancient kingdoms of Kandy rested on large irrigation systems and rice cultivation. It was a "hydraulic civilization" which garnered the admiration of scholars and officials. Tennent, a high-ranking British officer to Ceylon in the 19th century wrote (1860:424), "for upward of fifteen centuries these reservoirs, when duly attended to, successfully defied all the dangers to be apprehended by inundation... vast numbers of these tanks though utterly deserted, remain in this respect, almost uninjured to the present day". Tennent also saw the potential of the Mahaweli river as a future source of agricultural development. "It sweeps through the luxuriant solitudes, past wide expanses of rich but unproductive land, under the shade of forests whose timber and cabinet wood alone would form the wealth of an industrious people" (1860:423). One hundred years later the river will be manipulated for hydropower and irrigation under the Mahaweli development program.

Paddy cultivation evoked the golden age of Sri Lanka and thoughts of self-sufficiency, when the island was the rice basket of the region many centuries ago. "Rice self-sufficiency", Bandara and Jayasuriya remarked (2007:21), "has been a slogan that appealed to deep seated nationalist aspirations, particularly among the Sinhalese".

It has also influenced on land settlement programs and national development schemes which were introduced by the government during the first transitions period, and were intended to "restore the ancient glory of the Sinhalese" (ibid).

Not a sectoral transition, but rather an expansion of the current regime (the mode of production remained the same), the initiation of a new and massive irrigation system was a political vehicle as much as it was an agricultural one. The project was geared to favor the Sinhalese majority, as "the paddy society was almost entirely Sinhalese", Brunton noted (1992:82).

In 1961 the Mahaweli development scheme, which was perpetrated during the 1960s and 1970s, brought to Sri Lanka hydroelectric power and irrigation networks allowing the Sinhalese to spread from the center highlands to the "dry zone" at the center-north (see map 11, of Sri Lanka's climate regimes in the Köppen Classification, p.104), an area occupied by Sri Lankan Tamils.

Dissanayake, a government official responsible for the scheme during the 1980s wrote that the Mahaweli program signified "a return of the people to the ancient homeland... in the Rajarata" (1983:6). Rajarata is the name of the north central province. The former Director of Economic Research at the Central Bank of Sri Lanka, wrote of the scheme in 2004 (Sanderatne, 2004:211), "it gave the majority ethnic community the opportunity to resettle Sinhalese in the ancient historical capitals and ancient kingdoms and thereby confirm the area as a Sinhalese rather than a Tamil region. The land settlement issue has been a most controversial issue and was an underlying cause for the ethnic conflict". Moore (1985:96) stressed, "dry-zone development has been explicitly viewed as a means of increasing the Sinhalese population in the historic heartland of Sinhalese civilization... between 1946 and 1971 the Sinhalese proportion of the population of the five 'frontier' districts – Amparai, Batticaloa, Polonnaruwa, Trincomalee and Anuradhapura – increased from 33 to 51 percent... the main cause was the migration of Sinhalese settlers to new irrigation schemes".

To further assist Sinhalese farmers, and in addition to a free provision of water, the government dispensed fertilizers, subsidized seeds, and agricultural extension programs.

Reflecting on the regime, a Former Senior Government Official noted, "the agricultural sector was designed from above, organized from above, and challenged, when it was challenged, from above, at the discretion of the state" (personal communication, 2018).

In addition, technological advancements, agricultural intensification, sustainable sectoral transitions, were never the drivers of the country's most lavish development scheme. Instead, chauvinism motivated policy makers and chauvinism exhausted the country's resources. Accordingly, the transition of the sector was social and economic, and not technological.

Sectoral decline

At the plantations sub sector, foreign-owned estates were constantly in danger of nationalization by a center-left parliamentary coalition, which commanded the legislative between 1956 to 1965 and between 1970 and 1977, and eventually were nationalized during the 1970s. "The plantation sector was always identified as a colonial vestige. Something that should be discouraged in the long run, right? And the exportation of cash crops should be curtailed" (Professor of Agricultural Economics and Senior Political Advisor, personal communication, 2018).⁹³

In this first transitions period, and prior to nationalization, planters were heavily taxed by the government and laborers at the estates were rendered voteless and landless.

This composite of socio-technical landscape issue; increasing taxes, disenfranchisement, scant investments and ultimately nationalization, translated into

⁹³ The sector will experience a lot of inconsistency. "The ministry of plantations in the 1970s, a former economist from London, was a hardcore anti-colonial, anti-Imperialist. But he was also kind of pragmatic. By the time he initiated the nationalization scheme he began to re-think. He was a good friend of mine. He said something to the effect that, we were campaigning for the nationalization of plantations for a the longest of times, but now, when I'm sitting at this ministry, I'm beginning to realize this is not practical. It's not a wise decision. But that's what we promised... in 1977, after a decade or so, the new government handed over the entire sector to private companies for management" (Professor of Agricultural Economics, personal communication, 2018).

a steady decline of the plantation sector. "The sector became more and more smallholder-based... large foreign-owned firms passed into state ownership... the share of the plantations sector in the national economy had shrunk... and it became quite clear that new investment in replanting and factory modernization were essential if the decline of the sector was to be arrested" (Bandara and Jayasuriya, 2007:20).

Towards the end of the first transition phase, landscape factors afflicted further damages to the sector. From 1973, the agricultural sector was confronted with the oil crisis and the global fertilizer shortage. These predicaments have cut government sponsored agricultural inputs (fertilizers and machineries). At the height of the crisis, the government ordered some domestic restrictions on the movement of foodstuff between provinces, which incited the emergence of black markets.

Gunawardana and Somaratne (2000:18) helps to underscore the decisive role of the state in the sectoral transition: "the government supplied subsidized material inputs such as fertilizer, pesticides, tractors, improved seed and planting material... it carried out irrigation development and land settlement programs... a comprehensive network of extension services... subsidized institutional credit... crop insurance, marketing and agrarian service institutions... and guaranteed minimum prices for paddy and subsidiary food crops".

"The agricultural sector was completely state-controlled and regulated... private initiative was scant... entrepreneurial endeavors negligible... niches unobserved. There was no room for experimentation, or innovative happenings" (Senior Government Official, personal communication, 2018).

Sri Lanka's agricultural performance was unsatisfactory and has checked poverty mitigation, youth employment and wealth creation. A failing sector prevented progress from the wider society.⁹⁴ In the 1950s and 1960s agricultural yields per

⁹⁴ De Mel and Pathmalal (2009) calculated that "the period 1960-1977 saw Sri Lanka's growth performance stagnate to a great extent compared to other developing nations, particularly East Asian economies. Between 1960-1977 economic growth averaged 3.9 percent whilst between 1970 and 1977 growth averaged 3 percent... the ability of the Sri Lankan economy to create jobs was very limited in this period as a result of stagnant growth... the Central Bank's Consumer Finance survey of 1973 indicated that unemployment had reached 24% of the labor force in that year... the inability of the economy to create wealth and employment resulted in the exclusion of certain segments of society from economic activity and the benefits thereof. The youth in particular were excluded from economic activity as is evident in the abnormally high rates of youth unemployment in the country. In 1978 when total

capita were almost stagnate. In the 1970s landscape developments coupled with Tamil unrest against unfair state policies bred severe shortages of foodstuff. Thwarted with the notion of self-sufficiency and import substitution industrialization, the masses registered for a re-orientation of national development strategy. In 1977, a new government, helmed by a United National Party (UNP), will initiate the liberalization of the economy. Regrettably, it will also preach racism with greatest zeal and determination.

unemployment was 14.8 percent, youth (ages 19-25) unemployment had reached 31.1 percent".

23. *The second transitions period: liberalization and war*

1977, as a leading scholar and commentator on Sri Lankan politics, and former senior government advisor noted, was a catalytic moment that marked Sri Lanka's history and determined its development trajectory for the end of the century. The UNP was coming back to power on a promise of liberalization, "opening up the economy, as the president at that time said, changing the constitution" (Former Senior Government Advisor, personal communication, 2018). "Everyone embraced capitalism, as it were, a consensus came to take hold for many years. We are now all capitalists. Years later, in 1994, when the president comes into office, she will apologize for 1977... she will talk about a capitalism that needs to be fixed" (ibid).

The government introduced many such measures. Taxation of plantations crops was reduced in the late 1970s and removed in the 1990s. Sri Lanka's Export Development Board was founded to support agricultural trade. In the non-plantation sub sector, the state increased the floor prices of rice to enhance production, while at the same time the government continued to provide irrigation, farming extension assistance, and some research, though the latter was slashed in the following years. It had also lifted importation quotas and taxes of agricultural inputs and machinery (Bandara and Gunawardana, 1989; Cuthbertson and Athukorala, 1991; Gunawardana and Quilkey, 1993; Lakshman, 1994).⁹⁵ The state sought to bring employment opportunities, accelerate investments, improve competitiveness and stimulate growth (Athukorala and Jayasuriya, 1994; Rajapathirana, 1988).

Yet economic reforms in the agricultural sector have been incomplete and discriminating, and, all things considered, unsuccessful. Tax cuts and government spending failed to boost the cultivation of staples (paddy farming has expanded but in an insufficient rate). Inequality of incomes between the urban and rural population widened. Massive public investments in the irrigation and hydropower program, the Accelerated Mahaweli Development Program, which commanded a whole third of the

⁹⁵ One interviewee, a Professor of Agricultural Economics and Senior Political Advisor (personal communication, 2018) summarized the new economic strategy: "they (the government) came to introduce what was then known as the open economy. A neoliberal kind of economic strategy. It was lacking dexterity. They followed the model of these new industrialized countries, Indonesia, Malaysia, Taiwan. the Asian Tigers model. So they were trying to attract foreign capital. To promote exports of certain commodities. To create economic zones. It was very haphazard, very disorganized. They have exported labor in the form of female domestic servants to Middle Eastern countries for remittances. Hardly the development of human capital. These were some of the features of the New Economic order".

state capital expenditure in the late 1970s and 1980s was directed to favor one sect of the population (the majority Sinhalese).

The agricultural sector was designed by the state in such a way as to profit one group of Sri Lankans at the expense of another. "Any kind of agricultural innovation was completely stifled" (Professor of Agricultural Economics, personal communication, 2018). The Mahaweli scheme re-configured the agricultural sector into a discriminatory socio-technical regime, which undermined the cultural cohesion and destabilized the society. As it progressed, the scheme was stripped of its northern province projects (Bush 1999). The Tamils "would be deprived from what they felt was their due: land, equal opportunity for employment and education, and a proportional share of public investments (Tamil Activist and Former Senior Member of the LTTE, personal communication, 2018).

Bandara and Jayasuriya (2007:8, footnote 10) emphasized that the Tamil minority, constituting roughly a quarter of the total population in the 1980s, maintained antagonism over the Mahaweli Development plan. "An appeal for extending irrigation to the existing Tamil farming areas rejected... (and) the newly irrigated lands were settled largely with members of the majority Sinhalese community. This has been highlighted in numerous studies... a study by the OECD pointed out how the project exacerbated ethnic tensions", they quote the study, "the conspicuous absence of consideration of the project's possible negative impact on simmering tensions is striking – considering that it had glaring ethno-political implications... there was an ethnic overlay to the geographical areas which would benefit (or not) from the project... and the government decision to resettle displaced Sinhalese villagers in traditionally Tamil regions... the decision by the Jayawardene government to compress and accelerate the 30-year program into six years further exacerbated ethnic tensions".

Klingebiel (2001:10) pointed that Sri Lanka's "largest (development) scheme was launched (with) the aim to use at least 74 percent of the settled area – where Tamils previously formed the majority of the population – for Sinhalese. The Sinhalese settlement projects became one of the decisive motivating factors in the Tamils'

resistance". Peebles (1990:43) noted that "the choice of projects to be developed... reflects the focus on Sinhalese settlement".^{96,97}

1977 was also the year in which the LTTE was officially formed, together with other, radical and combative, Tamil youth organizations. The Mahaweli program and the Standardization Act – both belligerent and racial state interventions – hastened the conflict.

The republican constitution of 1978, which granted suffrage and citizenship rights for Indian Tamils (Upcountry Tamils), did little to appease the parties.⁹⁸ Simmering racial strains flared up into a civil war in 1983 (Black July, Historical background) that will consume the resources of the state for the following decades. Social and economic circumstances deteriorated, the economy lost its verve and momentum, and politicians lost focus and enthusiasm.

During the 1980s and until 1994, when general elections were held, Sri Lanka suffered from political instability and mishandling of the island economy by the state. Violence and terror suppressed investments in civil infrastructures and, specifically, in the agricultural sector (Professor of Economics, personal communication, 2018). Land settlements and agricultural expansion schemes were terminated. The share of agriculture in the gross domestic product and in employment contracted. Military expenditures pushed Sri Lanka into fiscal deficits and debt (Rahjapathirana, 1988).

In 1994, the newly elected United Front government described its intended agricultural agenda. "The agricultural development strategy... will aim at removing institutional and policy obstacles, which have retarded profitability and constrained investment in this sector" (Policy statement of the government of Sri Lanka,

⁹⁶ For further reading see Moore, 1985.

⁹⁷ At the socio-technical landscape, and adding to these crises, was the reluctance of the youth to become farmers and their resulting migration to cities. "When the education system was expanded the younger generation of the rural population had the opportunity to acquire better training. Their intention was never to become their parents. And education, as in many other circumstances, provided a vehicle for socioeconomic mobilization. They were not inclined to work in the agrarian sector. It was obsolete and retarded, with ancient machineries and little sophistication. It wasn't innovative. And there was little room for expansion anyway. But then also the urban economy was not growing, and the number of available jobs was limited. So, there was a big gap between the demand for new employment opportunities and the structural supply of the market... this situation increased the need for speedy economic growth, but the way to do that was unclear. There were many policy discussions but no viable option" (Professor of Agricultural Economics and Senior Political Advisor, personal communication, 2018).

⁹⁸ In the 1990s the government will bring primary schools at the estate under the national education system, and will expand healthcare services (De Mel and Pathmalal, 2009).

presented by the President of Sri Lanka, 9th February, 1996). But budgetary constraints prevented it from materializing the strategy.

As late as 1997, a comprehensive and sustainable technological transition of the agricultural sector (inclusive of rural populations) became an explicit priority of national policy. The Bureau of Investment initiated a scheme to encourage "technological advancement in agro-based industries in the rural sector... via private sector companies as joint ventures with farmer companies or as direct investments... the incentive provisions include duty free imports of seeds, planting material, required technology, and machinery, for example, refrigerated trucks for transportation of perishable products for export" (Gunawardana and Somaratne, 2000:24). Here too, the state assumed the role of technological niches in leading the intended transition.

No investments, no niches and no innovation: a civil war economy

None of these measures succeeded. The civil war mobilized the national budget and the need to increase government revenues to sponsor the military, and to offset the decline of foreign investments, led the government to tax the agricultural sector further. "The war exhausted our men, money and materials... these were lost decades for the island, for development, for sectoral advancements through investments" (Senior Government Official, personal communication, 2018).

An analysis of state-induced distortions to the agricultural sector (Bandara and Jayasuriya, 2007:13-16), showed that the tea industry "has been taxed by more than 30 percent up to the mid-1980s". The rubber industry "has been taxed by even more than the tea industry, by more than 50 percent up to the 1980s". "Coconut products (copra, oil and fiber)... a major export product category... was taxed to a similar degree to tea, up until the 1980s".

In terms of the multi-level perspective, taxation, compounded with economic decline and the costs of war, stifled innovation. The direct and indirect costs of the civil war were enormous. The direct costs encompass the devastation of manufactured capital and the destruction of human capital, mounting military spending, and damages to natural resources (De Mel and Pathmalal, 2009). Arunatilake et al (2001) calculated the public expenditure on the civil war between 1983 and 1996 to be LKR 288 Billion,

equivalent to 41% of 1996 GDP in present compound values (for further figures see De Mel and Pathmalal, 2009).

Furthermore, the northern and eastern provinces were a considerable source of fish and agricultural products. In the years leading to the war, the northeast region provided 64 percent of fish production in the country. "The loss of output due to military occupation of land and mining activities, adversely affected livelihoods in the north-east and also (the) availability of foodstuff in markets across the country" (ibid:49). Sarvananthan (2006) estimated the decline of agriculture outputs in the northeast region of Sri Lanka, as a share of national production.

Non-plantation agricultural product	1980 percentage of national agricultural production	2005 percentage of national agricultural production
Rice	33	30
Chilly	25	11
Red onion	62	23
Potato	13	0.6
Fish	64	34

De Mel and Pathmalal (2009) calculated the aggregated cost of damage to infrastructures, particularly irrigation systems and transportation networks, to stand at some LKR 56 Billion (roughly US\$ 1 billion).

Kelegama (2007) highlighted the intensive mining warfare as a persistent obstacle for social wellbeing and economic and agricultural development. The Ministry of Economic Development in Colombo (2010:2-3) stated that "two decades of conflict left many areas in the North and East of the country significantly contaminated by mines... laid by the Sri Lankan Security Forces and the Liberation Tigers of Tamil Elam... according to an estimation done by the Sri Lankan Army 1.6 million landmines have been laid in Sri Lanka... (and) approximately 552 km² is contaminated by mines (see map 13 below). Mining contamination affects 640 villages in the north and the east and mining was, and remains, "a major deterrent to economic activity, particularly agriculture" (De Mel and Pathmalal, 2009:50).

The combined indirect costs of the civil war were vast yet difficult to compute. Researchers mentioned four principal costs: reduced foreign direct investments and domestic investments attributable to insecurity, a loss of human capital owing to

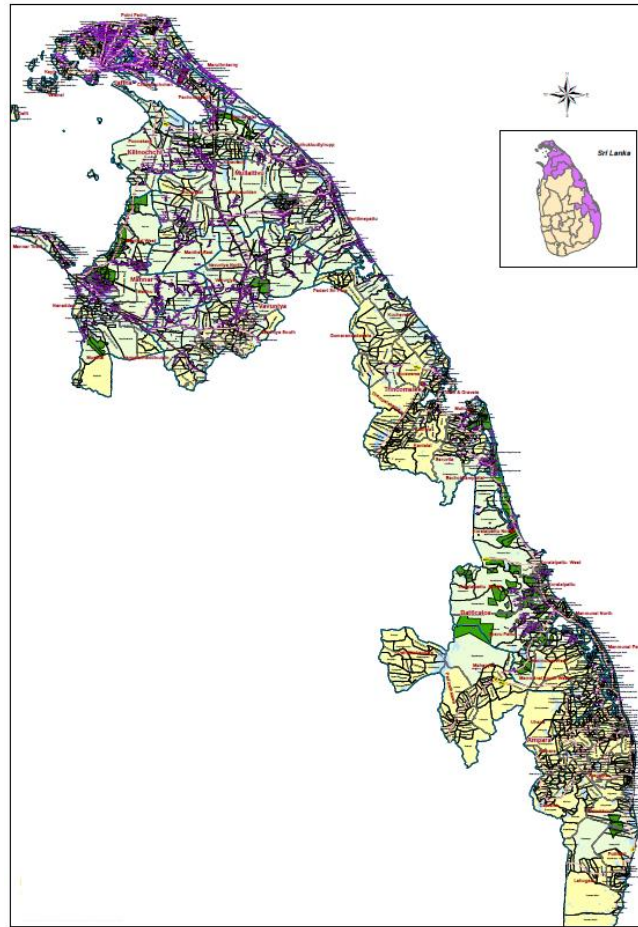
emigration of highly educated Sri Lankans (predominantly Tamils), increased taxation and its wide gamut of poisonous impacts on economic performance, and interruptions to social and economic development reforms (Institute of Policy Studies, 2003; Kelegama, 2006; 2007; Professor of Economics, Colombo University, personal communication, 2018; Professor of Economics, Peradeniya University, personal communication, 2018).

"The LTTE was a source of anxiety for investors... and the war brought the economy in the north and east to its knees" (Professor of Agricultural Economics, Peradeniya University, personal communication, 2018).

Throughout the second transition phase, from 1977 onward, the government of Sri Lanka fared poorly, over and over again, to maintain a budgetary surplus. Since 1990, annual public expenditure outstripped government revenues in every consecutive year. Sri Lanka's budget was bankrolled by borrowings which inevitably resulted in burgeoning public debt (Professor of Economics, Peradeniya University, personal communication, 2018). De Mel and Pathmalal (2009) showed that, for instance, in 2002, public debt as a percentage of gross domestic product stood at 105.4 percent. This was no financial climate for sectoral investments or innovation.

Map 13. Areas in the Northern and Eastern provinces affected by mines, 2013.

Source: National Mine Action Program, Progress Maps.



24. *Recovery and concluding remarks*

Considering the nonviolent transfer of authority from the British to the Sri Lankans in 1948, the developing, democratic, multi-ethnic and multi-religious island state was expected to progress. And yet, as soon as 1956, ethnic tensions swept the parliament. Prejudiced policies, in language, in suffrage, in education, in agriculture, destabilized the local social order from the 1950s to the 1970s.

In the late 1970s the government was trying to realize two contradictory goals: to liberalize and modernize the economy, encourage investments, champion higher education, embrace development, and at the same time, to favor one demographic group over another, and marginalize the Tamils. The second goal exceeded its objectives so effectively and thereafter, heaved the island into four gory phases of armed conflicts known as the Eelam Wars (1983 to 1987, 1990 to 1995, 1995 to 2002, 2006 and 2009). "There is no way you can separate the ethnic divide from the economic and agricultural issues", an interviewee noted, adding that "the government created this ethnicity-land-agriculture complex to its own defeat" (Professor of Economic History, personal communication, 2018).

When in 2009 the Sri Lankan army overpowered the LTTE, social-wide reconciliation and inclusive national reconstruction was promised. But the meaning of reconciliation in the Sri Lankan postwar context remains contested. With the removal of the notion of 'minorities' from government vocabulary a day after the war in 2009, Guruparan argued that the current reconciliation discourse is limited. It discards forms of institutional accountability, and fails to acknowledge "a legacy of massive human rights abuses". On the contrary. The 'reconciliation' narrative is preached by the state to achieve four pugnacious objectives: the consolidation of the Sinhalese' peace (a victor's peace) through a rhetoric of development; the normalization of militarization in the Tamil majority areas; the extension of a 'Buddhicization' of the north and east; and the continued criminalization of the politics of self-determination (in Amarasingam and Bass, 2016:17-22).⁹⁹

⁹⁹ In *Looking for Justice in all the Wrong Places: an International Mechanism or Multidimensional Domestic Strategy for Mass Human Rights Violations in Sri Lanka?*, Sujith Xavier contended that the UN recommendation to form a hybrid criminal tribunal for Sri Lanka will fail to produce expected results of indicting those accountable for human rights abuses. He also claims that such an initiative will "not heal the ruptures and cleavages among the different ethnic communities in Sri Lanka". Notwithstanding legal mechanisms, "a pro-

Of course, this abuse of sustainable development in programs such as "the northern spring" for the Tamil dominated northern province, arises from a flawed economic understanding, and erodes the general trust in the island, whatever remained of it. "The content of what is being done in the name of postwar development is deeply problematic", Guruparan noted, "it focuses on centrally planned hard infrastructure while ignoring the need to build economic capacity and capabilities for long-term rebuilding" (ibid:23).

Evidences speak of institutionally-led infringement of equal access rights to resources for development. "There have been no focused investments in the sectors of the economy that impact the livelihoods of the people directly... there are 4,241 multi-day boats in the country and northern province fishermen (Tamils) own just the five of them. Tamil fishermen suffer from both the encroachment of their traditional fishing areas by Sinhalese fisherman, supported by the Sri Lanka navy, and by fisherman crossing from the south Indian state of Tamil Nadu... accusations have been made by elected representatives that the Sri Lankan armed Forces have taken control of the community based fisherman cooperative societies that generally self-regulate fishing rights and access, and have set up their own societies" (ibid:23-24).

Sinhala Buddhicization, not sustainable development, guides all infrastructure constructions, settlement and land reforms, and employment policies. Practicing their ambitions for a unitary, Buddhist, developed state, the Sinhalese have striped Sri Lanka from its human capital, battered its social capital and by ways of cronyism and corruption and terror – squandered its economic assets. "With such policies, they might gain their pure-blooded state, but it will be a ruined state; deteriorated and technologically retarded" (Tamil Activist, Engineer, and Former Member of the LTTE, personal communication, 2018).

Reflecting on postwar Sri Lanka, Wickramasinghe concluded that in the postwar period the government confirmed its "true nature" – a "corrupt, dynastic, violent, vulgar entity". Sri Lanka's postwar problem, Wickramasinghe argued, are not only those of poor governance, political discrimination, lack of rule of law, economic underdevelopment, agricultural retardation and inefficiency, and rampant

nationalist agenda has shifted the focus away from the needs of the community, vis-à-vis education, healthcare and access to institutions, to one that is based on... discrimination" (Xavier, 2016:54-71).

authoritarianism, but also one of injustice towards minorities and communities – Tamils, Indian Tamils, Muslims – that have suffered horrendous pain, marginalization and displacement, for the past several decades (Wickramasinghe, 2016:222-223).¹⁰⁰

Unsustainable transitions in the agricultural and plantation sector

Within this contentious modern history, the story of the agricultural and plantations sector in Sri Lanka is one of unsuccessful transition attempts (1948 to 1977) followed by devastating ones (1977 to 2005 and onward), both provoking sectoral and societal decline.

The agricultural and plantations sector, as the International Monetary Fund (2005:5) stressed, is considered "to have contributed to the poor performance of the wider economy: in terms of sectoral contributions to growth, agriculture has been a continual drag... (and) the long-term average growth rate in agriculture has barely exceeded the rate of population growth, which has contributed to the persistence of poverty".

From a social perspective, the very design of the agricultural sector was unsustainable – discriminatory and unjust. From a technological perspective and from an economic one, sectoral transitions have been unsustainable and utterly unsuccessful. Drawing on World Bank (1995, 2003, 2004) data, Bandara and Jayasuriya (2007:5) noted that crop yields have "either stagnated or declined since the 1980s... (with) rubber, minor crops and subsidiary food crops, including income-elastic horticultural crops, falling quite significantly... overall, Sri Lanka's per capita food production has fallen by over 12 percent since 1980, compared with a rise of 48 percent in other developing countries on average". The research maintained that "policy distortions contributed to this relatively poor performance".

In the year 2000, Gunawardana and Somaratne summarized the systematic complications in the agricultural economy to include "low and stagnant yields, declining output, low intensity of use of irrigated lands, low farm family income and

¹⁰⁰ A notable Tamil author and journalist appreciated the challenge. "Good governance of national resources for the development of the Sri Lanka, remains the island's biggest hitch. With a depleted social capital, violated trust, migrated skilled labor, traumatized collective psyche, and a dwindled economy, this challenge is a formidable one" (personal communication, 2018).

employment... (in addition) development of properly functioning land and water (irrigated) markets with private property rights (acted as stumbling blocks against economic performance)". On agricultural technology shortcomings, the research argued that "despite more than three decades of the 'green revolution', food crop production technology in Sri Lanka is such that yield per unit of land of most food crops are below the achievements in some other countries in the south and south-east Asian region" (2000:35-38). "The reason underpinning the underperformance of the agricultural peasantry economy and of the plantations economy", a Professor of Agricultural Economics at Peradeniya University noted, "lies in the underinvestment in technology, in machinery, in training and skills, in innovation, those kinds of things. In turn, it invited inefficiencies and wastefulness and low productivity, in terms of agricultural output... more investments could have been made throughout the years" (focus group discussion, personal communication, 2018).

A fellow Professor and former Government Advisor continued, "the entire constellation of the plantation sector from the railroads through the machineries and the organization of labor and ownership was inherited by the British... and all the plantations, you know, were under the management of foreign companies and during the 1970s the government nationalized the plantation sector leaving only small plots of land for the cultivation by households, but nothing changed, you know... harvesting is made without good land management, no soil renovation, no replanting... no innovation too. That is one of the major hindrances as far as production is concerned" (ibid).

A third participant added, "then there is the labor issue. The price of labor in Sri Lanka is high. We cannot compete with African countries. That of course increases the cost of production. Another issue, apropos of labor, is the migration of the youth from the farm lands and the plantations to the cities. Young people do not take over the jobs left by the elders in those agricultural communities. They don't find the sector innovative enough, lucrative enough... The knowledge is then lost... and (you can) expect even lower levels of agricultural innovation and experimentation and science in plantations and in non-plantation production practices... so, those who are eventually carrying the plantation economy are not adding value... of course, that is engineered and governed by the states" (ibid).

Participant observations in plantations in the Kandy, Nuwara Eliya, and Uda Pussellawa areas, and in paddy farms in A'pura, Puttalam, Kurunegala, and Matle, attested to such claims.

A focus group discussion with estate managers in Rozella, west of Nuwara Eliya, shed further light on the issue. "Innovation and mechanization in the plantations... have been pursued only in pockets... but not nationally. In the Up Country, in the estates, mechanization... because of the steep terrain... the slopes... is difficult to introduce. You can make a nice plucking table but other than that the landscape demands special methods... of course, you can apply new things, new machines in the... value chain... there is much room for new applications, tools, for better means (of production)... but the biggest challenge in introducing machines are the unions... you see, for the mechanization you will have a lot of opposition from the labor unions, because machines will take over their jobs. But the state ought to intervene, right, to empower and extend ownership and dispense skills and new innovations" (personal communication, 2018).

From an environmental viewpoint, poor agricultural management makes for substandard ecological conditions. Soil erosion is conspicuous. Deforestation for paddy farming or plantation expansions is prevalent. Water pollution is also widespread. "Expenses by the government, allocation of budgets, you know, public spending on agriculture do not follow ecological sustainability principles" (ibid).

The story of the agricultural sector in Sri Lanka has also been one of state-led transitions. Scholarship acknowledges this. "Direct government intervention... (was a) necessity in a developing country such as Sri Lanka, where food crop production is mainly carried out by a large number of dispersed farmers working on small land holdings. It is doubtful whether even research and development subsidies will entice the private sector to undertake all research and development activities in such an economically risky environment" (Gunawardana and Somaratne, 2000:39). Jayasinghe-Mudalige (2010:10-11) stressed the importance of "providing continuous support and targeted incentives to the food and agriculture sector... there is an urgent need for establishing properly functioning economic and social institutions, both public and private".

Map 14. Satellite image of Sri Lanka, contemporary. Source: National Geographic MapMaker Interactive (Open Source).



Interviewees stressed this point. "With better or worse effects, mostly worse, the design of the agricultural system in Sri Lanka is a creation of the state" (Professor of Agriculture and Senior Government Advisor, personal communication, 2018).¹⁰¹ Nationalization bred unproductive management. Privatization of the sector, which came two decades later, was perpetrated with no proper policies, no monitoring, no measurement. "The role of the government doesn't end with the transfer of sectors between hands", a Professor of Agricultural Economics stated (personal communication, 2018).

"The problem of policymakers is that they don't understand the context in which they are operating. They are only interested in taxation, and they are moving between sectors, between the agricultural commodity sector, between the plantations, looking

¹⁰¹ Lal and Myint (1998:133) have picked up on this topic too. "Governments of both political parties had made statements from the time of independence implying that entrepreneurship was a bottleneck in the private sector and, therefore, the government must assume this role".

for what to tax (focus group discussion, Peradeniya University, personal communication, 2018).

"Policies do not inspire innovation. Policies do not inspire experimentation in methods to increasing production and so on... consider the farmers in the paddy fields or those under the coconut trees. The farmers are those who grow the much-needed food for the rest of us, but they are the poorest. We need to iron out all the problems in the supply chain and to make sure that the farmers and planters and laborers benefit from the system, and that is a critical, and too often-neglected, role of the government. That explains the underdeveloped sector, and the underdeveloped economy... No institution has helped shape those transitions more than the state" (focus group discussion, Peradeniya University, personal communication, 2018).

Driving transitions in Sri Lanka

The conclusions that surfaced from the analysis of sectoral and societal transitions in Nauru during the second half of the 20th century, have been transferable to the case of Jamaica, a much larger developing island state. These same lessons, of the clout of government institutions on transition processes, of the influences of landscape factors on domestic sectors, of the dearth of innovation networks and niches, are also germane to Sri Lanka. The *transformation transitions pathways* of Nauru and Jamaica is representative of Sri Lanka as well.

When Sri Lanka attempted to treat the topic of sustainable socio-economic development and sustainable transitions of its economy and agricultural sector, it was posed with the same systemic difficulties experienced in Nauru and Jamaica: the all-inclusiveness and inoperability of the notion sustainable development, and the lack of consistency and capacity to properly plan, execute and monitor government interventions and the introduction of sectoral schemes.¹⁰²

¹⁰² Outside the scope and time-frame of this study, in 2017, the country's Sustainable Development Act came into effect. An attempt to face development challenges across regions and sectors, the act, and the associated Ministry of Sustainable Development, Wildlife and Regional Development, already exhibit some of the structural problems well observed in Nauru and Jamaica. A key informant of this study, a former high ranking Government Official and a Former Senior Advisor to the President noted, "the act is too broad... elected politicians

Similarly to the other two case studies, the transitions of Sri Lanka's agricultural sector do not render the multi-level perspective inept. On the contrary, the analysis demonstrated the relevance of its units and levels of analysis, and the interplay of social elements with technological components, to the understanding of long-term development processes. What is more, it is the scarcity of niches that have allowed regimes to sustaining their detrimental thrust.

It appears that the analysis and management of sectoral transitions in postcolonial developing island states, of different geographies, cultures and demographics, require a modified transitions framework. One which acknowledges the role of the state, presents sustainable development in operational terms, and integrates some policy management principles.

that engage with the topic lack the conviction, drive and professionalism... an act with no implementing and overseeing ministry has no teeth, and the ministry was established with no vision and with no blueprints... but you have to understand the bigger picture... appreciate the context... parliamentary committees do not understand what they talk about when it comes to the sustainable development of Sri Lanka... Ministers are not interested in the broad political ramifications of development and are indifferent to meeting long-term goals... no one can act on sustainable development, it is too complicated... too many measures... too many goals... a lot of indicators and no capacity to measure... Sri Lanka does not have a policy rationale how to develop sustainability into a policy context... it is an utter and complete mess... there are no monitoring mechanisms... how can you promote policies, how can you establish their effectiveness with no monitoring mechanisms? How can you take stock of social or sectoral development?... this is extremely hard for the people to have so many layers of institutions, so many different goals to accomplish. The system as a whole, our way of policy-making, the national mindset, is completely fragmented" (personal communication, 2018).

Part IV Discussion

25. *Lost in transitions*

This study visited six sectors of national importance in three development theatres. Drawing on interviews, focus groups and participant observations, archival research and secondary sources, it set out to test the relevance and generalizability of the multi-level perspective for the analysis of sectoral and social transitions in developing island states, and in so doing, to expand the historical and geographical terrain of transitions theory – a theory that up until now, has been confined to the developed countries in which it originated.

The study found that when employed in the context of developing countries, specifically in postcolonial island states, the multi-level perspective is deficient. While the analytical framework is useful to some extent, it falls short to provide an inclusive explanation of what drives sectoral changes in developing island states and its epistemology is not fully-representative of sectoral and societal transitions in unindustrialized island societies.

The multi-level perspective does not adequately consider the role of government, or agency in transitions; it neglects to define the notion of sustainability in applicable, operational terms; it overemphasizes the role of niches and radical innovation networks in sectoral change processes while underemphasizing the rigidity of dominant socio-technical regimes; it offers neither a normative model nor a valid descriptive model of sectoral transformations, and therefore, subscribes no instrument for policy analysis and policy design.

This Part explains how the case studies expose sustainability transitions theory as a deficient and unrepresentative theory; it proceeds to call for further research to address these limitations.

Common patterns of (un)sustainable transitions in developing island states

The societal development paths of Nauru, Jamaica and Sri Lanka (in this Part, "Ceylon" and "Sri Lanka" are used interchangeably) emerged under enormous landscape pressures; a gradient of political and economic forces; globalization, industrialization, the strategies and policy interventions of colonial institutions, international demand for raw resources, cultural changes, and more, that were

exercised on the local societies for decades in the case of Nauru and for centuries in the case of Jamaica and Sri Lanka.

Under the heel of imperialism, these exogenous coercive forces – landscape factors – inexorably resulted in a violent transformation of local regimes and the design of new dominant socio-technical regimes whose fruits were vast plantations and extractive industries. Naturally, neither technologies nor the knowledge and skills necessary to operate the socio-technical dominant regimes were developed domestically in any of the cases.

In the first part of the 20th century, when landscape conditions were particularly favorable to support an export-oriented economy, Nauru, Jamaica and Sri Lanka had nationwide, outward looking, economic development. At the landscape level, an 18th century model of globalization was accelerating. Raw materials, labor and capital, flew into the developing island states from outside.

In Jamaica this took the form of the sugar-and-slave economy which transformed the island into a farming country, a monoculture that benefited from the island's extensive, watered, flat and fertile plains. As instruments of production, Africans were forcefully transplanted into this landscape brutally and unwaveringly for over two centuries. A network of institutions controlled by the British government, rather than management arising from companies, local communities or the spontaneous development of technological niches, moulded social and economic structures of the island, configured all sectors, oversaw the development of markets, the production methods, trading systems and behavior, imported and substituted human capital, and invested in the technological apparatus of exploitation of natural capital assets.

At the regime level, the agricultural sector rested in the hands of a small planter elite who benefited from a rich resource base, generous land grants and low taxes, which led to the formation of large estates with plentiful unutilized and uncultivated territories. Capital-intensive improvements were hindered by estate owners who had little incentive to challenge the regime.

In Sri Lanka, the British colonial forces transitioned the local economy from a pre-capitalist feudal design to a capitalistic economy, with various modes of agricultural production, and a prosperous plantation subsector to answer the demand for raw materials and foodstuffs, including tea, rubber and coconuts. Tea cultivation was a particular, labor intensive economic choice, for which capital and techniques were

imported from one state and labor from another, while the hosting country provided the land and climate. The diffusion of crops and equipment was made possible by the state, thereby creating a dominant socio-technical agricultural regime that was tailored to the needs of the British and the circumstances of Ceylon. Under these conditions, neither the planters nor the laborers had strong incentives to challenge the agricultural mode of production, or the "way of doing things". What summoned sectoral transitions, when they occurred, was the colonial government. In both Jamaica and Ceylon, the British introduced the modes and means of production in the agricultural and mining sectors, shipping their mechanical and biological innovations to their crown colonies.

The mining sector of Nauru tells a similar story. One of the highest grades of phosphate rock deposits ever discovered was found in the topside of Nauru. A finite natural resource, phosphate rocks are essential for plant nutrition, and the global need to intensify agricultural production in the 19th and 20th centuries prompted the colonialization of the small island. From 1920 until 1967, the British Phosphate Corporation operated the mining sites in Nauru and deployed excavation technology on the island to forge a new and dominant socio-technical regime.

The production apparatus was imported. None of the technologies, neither the skills to assemble them nor the managerial knowledge to operate them, were developed by the indigenous societies.

After independence, which came to Nauru in 1968, to Jamaica in 1962 and to Sri Lanka in 1948, those sectors of social significance saw little technological innovation, apart from Jamaica's bauxite and aluminium sector, which featured the Bayer process.

In all three economies, most sectors were state-established, apart from some sectoral pockets (e.g. paddy farming in Sri Lanka and subsistence agriculture in Jamaica), and in some instances, state run (the financial and extractive sectors in Nauru).

Interviewees agreed that to consider the possibility of niche actors in the financial sector in Nauru was nonsensical. Others added that to move away from the existing mining, agricultural and nutritional regimes in Nauru, deviate from rules, from the way of doing things, was not part of the local culture. "There are virtually no well-functioning niches – the way niches are defined here – in those sectors", a research

participant noted. "There is no network. No capacity, no technologies, and very little political will as well... this is because of historical, foreign factors, colonialism and so on, but also because there has been a great deal of money that has come into the government for extraction of resources" (Former Government Official, personal communication, 2017).

In Jamaica, the planters had no leisure for experiments. Banana agriculture in Jamaica saw little innovation, and the cultivation process remained traditional, manual and labor intensive. Across other plantations, and small non-plantation farms, farmers lacked titles to the land they cultivated. They were unable to mortgage properties, and therefore unable to get funding for modernization. As a consequence, small farms were generally unproductive owing to poor soil conditions and outdated technology.

In the Bauxite mining sector, only the availability of a foreign-developed specific processing technique, the Bayer process, made the exploitation of the resource possible. The introduction of the foreign process in the 1950s and 1960s was the sector's most notable technical innovation.

In Sri Lanka, the British forged a dominant and innovation-resistant design for the agricultural industry, which was maintained by the Sri Lankan government after independence. The Sri Lankan government intervened in the agricultural sector often, experimenting with a wide array of economic regimes; it moved from free-market policies to more directive government control over production, practising an import substituting industrialization agenda, and then later reversing this to export-oriented economic policies and sectoral liberalization.

Reflecting on productivity, efficiency, agricultural technology and innovation in both sub sectors, plantations and non-plantations (paddy farming), contemporary observers maintained that their technology was ancient and that their agricultural endeavors were confronting major technological obstacles. Inefficiency was rampant. Technology was outdated and production traditional. Investment in the entire agricultural apparatus was essential, but evidently limited to large irrigation projects, fertilizer subsidies and paddy farming. Government intervention was routine, but it was observably mismanaged, biased, discriminatory and inconsistent.

In terms of the multi-level perspective, the foremost interaction in the colonial period and postcolonial first transitions phase, across all sectors and in all case studies, was

between landscape changes and the regimes. In particular, the expansion of markets abroad created pressures on domestic industries to supply materials and foodstuffs. Niches in these sectors were not endemic to Nauru, Jamaica or Sri Lanka. Radically new agricultural, mining, nutritional and financial options, including sustainable ones, were never developed domestically.

In each of these development arenas, external landscape pressures, coupled with local government responses to landscape pressures, influenced the dynamics in the agricultural, mining, nutritional and financial regimes. These regime dynamics had wider socio-technical knock-on effects. The expansion of some sectors came at the expense of others. Cannibalization of resources, of land, labor, public spending and investment, curtailed economic diversification.

By dint of favorable landscape conditions, international trade opportunities, and the introduction of a few novel technologies in several sectors by the state (such as the Bayer process, and the expansion of excavation operations in Nauru), until the 1970s these regimes were generating many social benefits for their three countries, with the exception of the agricultural and nutritional regime in Nauru, which was de-aligned and which later collapsed under pressures from mining expansions.

Since the 1970s, when a second period of unsustainable transitions took place, the combination of detrimental external landscape changes (e.g. the oil crises of 1973 and 1979) and poor policy interventions and management (e.g. the bauxite levy) altered the dynamics in all the regimes, with damaging social wide knock-on effects.

In Nauru, the expansion of the mining sector and the removal of surface soil engendered a crisis of ecological degradation, creating problems in the technical and social aspects of the traditional agricultural economy. The de-alignment of the agricultural and nutritional regime was swift. Imported glucose-rich foodstuffs gave rise to new user preferences and nutritional practices; a new dominant regime had arrived, founded on imported materials.

The Nauru Phosphate Royalties Trust, which emerged as a radically new national financial system, was poorly managed. Eventually, mining was scaled back as phosphate reserves dwindled. The post-mining Nauru was a hollowed-out and desolate wasteland. The exhausted lands became uninhabitable for people, crops and anything else that might benefit sustainable life.

Transitions in the alignment and de-alignment (collapse) of sectors in Nauru showed that technological niches did not mature to challenge the socio-technical regime; on the contrary, it indicated that socio-technical regimes were designed by government (some of them inherited from colonial rule); and that the socio-technical landscape influenced the operation of the regimes.

The central point of the analysis was that transitions came about through the interaction and dynamics at the macro and meso levels, and with the direct intervention of government. It was also demonstrated that transitions can be detrimental to society.

In Jamaica, the second transitions period saw many external landscape changes that shaped dynamics in both the mining and agriculture regimes. In the 1970s government interventions in Jamaica became intrusive and ideological. Influenced by radical thinkers, and with a strong socialist predisposition, government policy grew more controversial and polarizing.

Marxist rhetoric, and the growing presence of Cuban political activists incited further fears among the Jamaican business milieu that the country was striding towards communism. In turn, panic within the private sector debilitated domestic markets, provoked hostility toward the middle and upper classes and destabilized the government. Capital began to flee, businesses closed, taxes were evaded and investments were shelved. A climate of anti-government hysteria paralyzed economic activity in the island. In addition, warnings of developing the Dutch Disease in the extractive minerals sector were dismissed, and by the 1970s the economy had grown increasingly reliant on the extractive mineral sector and the mining sector, which depressed the production of tradable crops.

The government continued its dirigiste approach. State institutions began to exert direct influence over the economy. The government extended existing programmes of acquiring idle lands for re-allocation to small farmers, and continued to sponsor the government agency to run the sugar industry. The state also leased government lands to small farmers, and extended its support to Jamaica's Agricultural Marketing Corporation. However, when it became obvious that these economic policies were too expensive to support from government revenue alone, the government entered into unsustainable internal and external borrowing arrangements.

A spate of socio-technical landscape developments, including a decline in global demand for bauxite, the 1973 oil crisis, the 1979 energy crisis, a general retrenchment in foreign investment and the flight of highly skilled laborers, wounded the economy. Jamaica lost its position as the world's leading bauxite producer. In addition, the increasing use of plastics as aluminium substitutes further destabilized the industry.

At the same time, the cultivation of crops for export slowed down. Most of the government's new schemes proved to be expensive, ill-conceived, and mismanaged. Nationalized enterprises began to incur losses. Farmers cooperatives ran up massive debts.

In another misconceived response, in 1975 the government introduced a new bauxite production levy with the intention of increasing tax revenue. The levy re-configured the workings of the regime and had wider socio-technical reverberations. In the short term, the levy imposed a six-fold increase in taxes. In the longer run, the new bauxite levy increased production costs and damaged the sector. From the perspective of transitions theory, those transitions were not so much technical as economic and organizational. The proceeds of the levy were then ill-invested and the profits squandered on reducing the fiscal deficit whereas they would have been better invested in infrastructure and the modernization of agriculture. Government meddling with the design of regimes, specifically, a change of their economic underpinning and regulation, coupled with landscape pressures, undermined all sectors of the economy and Jamaican society as a whole.

In Jamaica as in Nauru, macro-level pressures and top-down government policies explain the design, formation and change of socio-technical regimes. Transitions, in other words, were government-driven and landscape-triggered, but never niche-initiated. Socio-technical sectors were configured, and re-configured, by government institutions. Niches or innovation networks in agriculture, in the plantations, in the mining industry, never evolved to challenge prevailing regimes.

Pressures exerted from the landscape, such as the oil crisis, Marxism, and austerity measures, as well as from the government, remained the principal forces driving change. Bottom-up innovation is a property of well-developed states; in Jamaica, only proper governance is capable of reforming the country and restructuring its failing business sectors, in the view of the interviewees.

Similar trends were observed in Sri Lanka, where the two sub sectors of the agricultural regime, the plantation and the non-plantation economies, experienced heavy government intervention in the 1970s, with devastating social implications that would destabilize the state for the rest of the century. In the non-plantation sub sector, predominantly consisting of paddy farming, the state initiated a massive new irrigation system which was a political vehicle as much as it was an agricultural one. The Accelerated Mahaweli Development Programme, which represented a major public investment in irrigation and hydropower designed to complement the land settlement schemes and absorbing a third of state capital expenditure in the late 1970s and 1980s was directed at one section of the population. It enabled the majority Sinhalese to spread from the centre highlands to the "dry zone" in the central-north, an area occupied by Sri Lankan Tamils.

In effect, the Mahaweli scheme re-configured the agricultural sector into a discriminatory socio-technical regime. As it expanded in the 1970s, the scheme was stripped of the Tamil-oriented agricultural projects in the northern provinces, leaving the minority Tamils deprived by what they felt were their rights.

In the interim, landscape factors inflicted further damage to the agricultural sector. From 1973, the sector was confronted with the oil crisis and the global shortage of fertilizer, which cut such government sponsored inputs as fertilizers and machinery. At the height of the crisis, the government ordered restrictions on the movement of foodstuffs between provinces, which incited the emergence of black markets. In 1977, the Tamil militia, the Liberation Tigers of Tamil Eelam, was formed, together with other radical Tamil youth organizations. The Mahaweli programme and the Standardization Act (a marginalization policy in the educational system), fuelled already simmering racial tensions, which flared into a civil war in 1983 that would consume the resources of the state for the next decades.¹⁰³

Social and economic circumstances deteriorated, the economy lost its vigour, and the politicians lost focus. At the same time, the plantations, which were still foreign-owned, felt threatened by nationalization from the centre left parliament; they were indeed eventually nationalized in the 1970s. The plantation sector had always been

¹⁰³ A research participant (personal communication, 2018) noted, "In the North there weren't too many economic alternatives to agriculture, fishing and working with the state. These are entirely different areas from the rest of the country. Not too many industries, no technological niches in any case. When the government sector closed its doors, and with the Mahaweli Program at its height, grievance started to build up... and then came the militarized response".

identified as a vestige of the colonial era, something to be discouraged in the long run. Prior to nationalization, plantation owners had been heavily taxed by the government while the laborers were voteless and landless. This composite of increasing taxes, the disenfranchisement of workers (former Indian Tamil migrants), scant investment and finally, nationalization, resulted in the steady decline of the plantation sector.

When, in the late 1970s, a new government came to power on a promise of liberalization it introduced several measures to open up the economy. Taxation of plantation crops was reduced in the late 1970s and removed entirely in the 1990s. Sri Lanka's Export Development Board was founded to support agricultural trade. During the 1980s and 1990s, the Sri Lankan government was attempting to fulfil two contradictory goals: the first was to liberalize and modernize the economy, cultivate investment, sponsor higher education, and fuel development; the second was to favor one demographic group over another, and to marginalize the Tamils. The second goal was so swiftly achieved that the island was precipitated into the four phases of armed conflict known as the Eelam Wars.

During the lost decades, Sri Lanka suffered from political instability and state mishandling of the economy. The violence suppressed investment in civil infrastructures and, specifically, in the agricultural sector. The land settlement and agricultural expansion schemes were terminated. The direct and indirect costs of the civil war were enormous: it had exhausted both people, money and resources. The direct costs included the devastation of manufacturing sector capital and the destruction of human capital, at a time of increased military spending and damage to natural resources.

The indirect costs of the civil war were equally far-reaching. They included reduced foreign direct investment and domestic investment, the loss of human capital owing to the emigration of highly educated Sri Lankans (mainly Tamils), the wide impact of increased taxation on economic performance, and the interruptions of social and economic development reforms.

Throughout the second transition phase, from 1977 onward, the government of Sri Lanka failed to maintain a budgetary surplus. Since 1990, annual public expenditure has outstripped government revenues in every consecutive year. Sri Lanka's budget has been bankrolled by borrowings which inevitably translate into burgeoning public debt.

The story of the agricultural and plantation sectors in Sri Lanka during this difficult period of modern history has been one of unsuccessful transition ventures (1948 to 1977) followed by disastrous ones (1977 to 2005 and onward). In terms of the multi-level perspective, and from a social perspective too, the agricultural sector was unsustainable: it was discriminatory and unjust, by design. From both the technological and economic perspectives, the sectoral transitions have been unsustainable and unsuccessful. The main reasons underpinning the underperformance of both the agricultural worker economy and of the plantations economy is the underinvestment in technology, machinery, training and skills, and innovation; this has resulted in inefficiency, wastefulness and low productivity in agricultural output. An interview added, "in terms of technological sophistication, in effect, the entire sector is retarded... so they don't have technological innovation, niches, networks... In terms of cultivation, harvest, post-harvest, processing, storage, you know, these are areas don't see radical innovation" (Tea Estate Manager, personal communication, 2018)

As interviewees noted, across the board the plantation sector, the railroads, the machinery, and the organization of labor and ownership were inherited from the British, and all the plantations remained under the management of foreign companies until the 1970s. Nationalization brought little relief. The cultivation of rice, tea and coconuts, by and large, continued despite the lack of good land management, the absence of attention to the quality of the soil, and no replanting.

From an environmental viewpoint, poor agricultural management had resulted in substandard ecological conditions. Soil erosion was in evidence. Deforestation for paddy farming or to expand plantations was prevalent. Water pollution was also widespread. For most of the past four decades, agricultural policies had avoided innovation, experimentation in methods to increasing production and so forth

The evidence gathered in these studies converges on several important points. First, the socio-technical regimes were government-initiated, government-installed, and in some cases, government-supervised and managed. State institutions challenged and replaced socio-technical regimes across the board: in industry, in trade, in economic affairs, in education, in subsistence and commercial agriculture, in mineral extraction, and in the local dietary arrangements. These transitions, technological as well as economic, were triggered by landscape pressures that were mitigated or exacerbated by the state.

Second, socio-technical regimes were re-designed and re-configured, or rather transitioned, by the interplay of landscape factors, internal regime dynamics and state intervention. Third, the radical technological innovations which led to the transitions had been foreign-invented and imported into the developing island theatre by the colonial or postcolonial state. Fourth, local technological niches in the three case studies never matured to challenge or displace an incumbent dominant regime, although landscape factors did create windows of opportunity.

On the scarcity of technological niches and radical innovations

In all case studies and sectors, the lack of domestically-originated innovation (endogenous innovation or organic technological innovation, as some interviewees referred to it), and the absence of technological niches, entrepreneurs or enterprises, emerged as a persistent problem.

In all three countries, past and present government officials, participants in group discussions and key informants in this study held the opinion that few entrepreneurial start-ups had ever existed in the agricultural, nutritional, extractive minerals or financial sectors. This view was often repeated by academics.

The frequently documented explanation was that colonial domination had suppressed local learning and experimentation. Capital markets were underdeveloped. Informal modes of education were unable to provide indigenous people with the necessary scientific and engineering knowledge to pursue alternative modes of production in each sector, not least to challenge technologically-sophisticated, dominant and state-supported regimes. Furthermore, native Nauruans, Jamaicans and Sri Lankans were risk-averse and altogether unaccustomed to borrowing capital to broaden their business. In some sectors, for instance paddy farming, the locals had practised the same economic activities for centuries.

Entrepreneurship of the kind that has propelled sectoral transitions in developed states has been scarce in these developing island states, both the small and the large. In many sectors, ignorance was widespread and information about means of production, methods and the desired end product, was lacking. Work in mining or in a phosphate or bauxite factory, or on a tea, coconut, rubber, sugar or banana plantation, or a paddy farm, did not provide the islander with the scientific,

managerial and organizational skills needed to engage in the development of radical innovation (or, for that matter, any innovative or entrepreneurial activity) to challenge a dominant regime. Furthermore, government policies were partial and inconsistent, and in Jamaica and Sri Lanka there was the added factor of ethnic tensions.

Interviewees from Nauru or Sri Lanka stressed the cultural conditions that held back entrepreneurial undertakings. They noted that Nauruan and Sri Lankan societies were not set up to produce individuals with an entrepreneurial disposition and drive (only some Jamaican interviewees registered to this explanation). The issues of cultural risk aversion and conformity to social traditions were cited several times. The very notion of "doing things differently" was referred to as seditious and unwelcome. "Our society lacks the economic sticks and carrots designed to encourage innovation," a Senior Government Official in Jamaica noted (personal communication, 2017).

In all three cases, interviewees stated that uneducated, unskilled, unemployed, landless or otherwise disenfranchised laborers, farmers or workers in any sector do not create the cadre from which innovators, entrepreneurs and niche actors and new businesses emerge, yet these were the bedrock of the agricultural, mining and financial sectors in Nauru, Jamaica and Sri Lanka in the second half of the 20th century.

Together, these case studies call for further research on the applicability of Sustainability Transitions and the MLP in the context of developing island states, and other developing countries.

26. *Lessons learnt and directions for future research*

When study subjects engaged directly with the multi-level approach to evaluate the merits, generalizability and transferability of transitions knowledge to the developing context (using schematizations – see Part 1 and Appendix 1), they identified the absence of niches as a cause for unsustainable sectoral transitions; or, to the contrary, they identified their absence as a factor of no consequence in the dynamics of local transitions ("no one would challenge a dominant regime. No one could exploit windows of opportunity to de-align and re-align a regime", Senior Government Official, personal communication, 2017).

Of the complete sample of 180 research participants, 96 individuals who held positions with local governments and were involved with the operations of the six sectors rejected the multi-level perspective's epistemology and hypotheses, suggesting the model overstates the role of niches in sectoral change processes while understating the rigidity of dominant socio-technical regimes.

The case study analysis and narrative development of the three case countries and six sectors supports such statements, showing how the niche-concept is not useful to understanding the emergence of dominant regimes in developing island states, to the introduction of innovations or to regime changes.

Considering the influence of state institutions on local transitions, study subjects pointed to a "missing level" of analysis in the multi-level perspective, "somewhere between the landscape and the regime... since government institutions can resist some landscape pressures, can respond to them by re-designing a certain sector or regime, or not interfere and leave a sector exposed and vulnerable to landscape changes", (focus group discussion, personal communication, 2017). While this point deviates from the middle-range theory, it was reiterated in interviews throughout the research.

A development specialist elaborated on this point. "Across Oceania, starting in the 1960s, before decolonization and immediately after, and this is probably true for the Caribbean Basin, and many other parts of the world, nation states focused on the kinds of activities and industries – those large national sectors you refer to as socio-technical regimes – that they thought would bring their societies into a kind of modernity... often, governments focused on agricultural activities, cultivating all sorts of crops that local people would make money from and foreigners are interested in...

cash crops... or, mining out minerals if they had some at their disposal... leaders supported that... budgets were allocated. These were the underpinnings of development, or transition dynamics of sectors and so on. And so you know, when you think about transitions you really have to place the government, and agency, in a very central place in your analysis – instead of technological niches" (Professor of Sustainable Development, personal communication, 2017).

The lack of agency in the Sustainability Transitions theory was equally recorded by academics who participated in the research.

One more point was also restated during the field studies, this time centering on the usefulness of transitions theory and the multi-level perspective, in its current form, for policy making: the conceptual vagueness of the notion of sustainability (see Part 1). Rather than accept any one definition of sustainability or sustainable development, transition scholars (Geels (2010); Garud et al. (2012) and Marakrd et al. (2012)) consider the concept open to interpretation.

However, the interviewees and focus groups participants found this inconclusiveness obstructive to development efforts in developing states, and a deterring element in the multi-level perspective. "If the notion of sustainability is at the heart of the theory (i.e. sustainability transitions theory)... if it guides theorists to help governments foster more sustainable policies, it must not remain context dependent and indistinct... you cannot ignore it... it's the elephant in the room, isn't it... well, you have to discuss it" (Professor of Economics, Columbia University, personal communication, 2017).

"What are the conditions required for sectoral transitions to be sustainable over a long period of time? How do you evaluate the sustainability of a transition", an interviewee asked. "Does the transition from one mode of production to another more 'innovative' or 'radically innovative' mode of production, in energy, in mining, in transportation, in agriculture, is sustainable? Sectoral sustainable? Socially sustainable? By what measures?" (Professor of Economics, Sciences Po, personal communication, 2017).

A former senior government official (personal communication, 2018) noted, "no one speaks the language of sustainability and that is not by mistake. It is an obscure language... and this multi-level perspective provides no assistance".

A focus group of development professionals, agricultural economists and political advisors expanded on this point, rejecting the theory as both a normative construct and a descriptive model for policy making. "So, I have a longstanding struggle with this idea of sustainability, or sustainable development, or this new notion of sustainability transitions... because I think there is a fundamental flaw in thinking that you can move forward with the kind of structures that are embedded with the idea of development. So the whole idea of development is based on a kind of Westernized Enlightenment obsession with progress and perfectibility and moving forward, and advanced modes of production, and that sort of thing... niches and technical regimes and sectoral transformations and so on... these are no different... they have a similar odour...

The focus group continued, "moving forward is always a kind of a technological utopian dream, a normative destination that is also configured around what is seen as optimal both socially and economically and sometimes, although rarely, environmentally, by people in dominant countries, foreign countries – this is the case with this new framework here (pointing at Sustainability Transitions). And so, if that is your goal, that kind of optimization of a particular regime or sector, without some sort of a miraculous technological fix, there will be no real sustainability, you know... the resources will be depleted... the soil will be eroded eventually.

"That is a persistent difficulty in thinking about development the way it is being promoted... but here (referring to Sustainability Transitions), the concept remains undefined... unspecified... that is suspicious, how can that be applied empirically? How can we put this descriptive framework, or analytical tool, in work?

Participants added, "sustainable for whom, sustainable for the dominant social structures, for the regime? Sustainable for the folks who work in specific industries, in the plantations, in the paddies? Or sustainable for local communities in terms of their indigenous culture?

"What are the social-wide implications of a more sustainable socio-technical sector? How is that connected life-styles? Shouldn't we consider that technological progress or transformation of sectors doesn't actually develop jobs? There are many potential contradictions here and this model (the MLP) doesn't reconcile these difficulties.

"So do you involve communities in deciding what is a sustainable regime? Otherwise, who gets to decide? The government? ... I think such deliberative community

projects are infinitely more successful than any kind of large development efforts of a single sector... take the Mahaweli Program as an example... I'm incredibly cynical about this notion of sustainable development.

"So, say I would like to put your multi-level perspective tool to assess the sustainability of development plans? How can I do that? This framework is incompatible for processes of policy making" (focus group discussion, agricultural economists and political advisors, personal communication, 2018)

Without a clear definition of sustainability, sectoral transitions are harder to assess and compare to other alternative configurations, in terms of performance, social-wide knock-on effects and environmental influences.

Furthermore, sectoral transitions may achieve short-term sustainability targets confined to their regime boundaries, such as job creation or efficient use of materials (decline in the ecological footprint per unit of production), but fail to achieve long-term social-wide and ecological sustainability goals; all well-observed in Nauru, Jamaica and Sri Lanka.

To allow room for such constraints to be properly evaluated, and potentially reconciled, requires modification of the theory beyond the multi-level perspective in the context of developing island states, and beyond the scope of this research.

Directions for future research

The analysis component of the thesis carried out an investigation into selected theoretical and practical gaps in Sustainability Transitions theory. The purpose of this inquiry was to appreciate the generalizability and applicability of the theory's central tenets: whether or not its universal propositions are justified. Whether or not its epistemology, its theoretical scope, its causation mechanisms, are valid outside the theory's origin-context in developed countries.

The findings of this inquiry – that the explanatory power of the multi-level perspective is limited, that it fails to describe multi-decadal processes of substantial societal changes and re-configuration of sectors in developing island states – bring this strand of literature into question and demand further research.

Specifically, these limitations yield three directions for future research. First, there is an obligation to expand further the empirical territory of the theory. This could be achieved by replicating the research design of this thesis in other cases, attempting to reproduce findings. In this fashion, future study could examine the agreement between the results presented in this analysis component and other measurements gathered in other developing countries. If similar observations to those elaborated here are noticed, further adjustments of sustainability transitions analytical tools ought to be proposed.

To this end, Coenen et al. (2012) noted that "transition analyses have often neglected where transitions take place, and the spatial configurations and dynamics of the networks within which transitions evolve... A more explicit spatial perspective on sustainability transitions... (should) provide a contextualization on the limited territorial sensitivity of existing literature... and (should) acknowledge and investigate diversity in transition processes, which follows from a 'natural' variety in institutional conditions, networks, actor strategies and resources across space".

More recently, Köhler et al. (2019) stressed a need to "address more explicitly the geographical dimension of historical and emerging transition processes", which should have implications, so they argued, "on the conceptual level of the transition approaches... by addressing the differentiation of regime, niche, and innovation system structures in particular regions of the world". The scholars added that future inquiries into transitions in developing states would have "strong empirical implications in that transition processes happening in developing countries that have not received, to this point, adequate attention in the literature, and their inclusion may require further conceptual work" (ibid).

A second avenue of potential research on the multi-level perspective should lead to an improved understanding and conceptualization of the role of government institutions, agency and policy in transitions processes. As this research illustrated, socio-technical regimes in developing states were government-initiated, government-installed, and in several cases, government-supervised. State institutions challenged and re-configured socio-technical regimes in industry, in trade, in subsistence and commercial agriculture and in mineral extraction. These transitions, technological as well as economic, were triggered by landscape pressures that were mitigated or exacerbated by the state.

To become fully-representative, the multi-level perspective should consider, and account for circumstances in which socio-technical regimes are designed and configured by the interplay of landscape factors, internal regime dynamics and state intervention. As Köhler et al. (2019) observed, "at a more operational level, further research is required to better understand and specify the long-term effects of specific policies on sustainable transitions in order to develop and implement of new policy frameworks to make transition activities carried out at different levels more effective".

Finally, as states occasionally in this work, a third line of future examinations should reconcile between different notions of sustainability and proceed to adopt a distinct, operational and measurable interpretation of the notion, rather than practice a pluralistic approach for the concept.

Part V Summary

There is a global sustainable development challenge, with a policy commitment and an institutional intent to transition states, societies and sectors to perform better, environmentally, socially, economically and technologically. Out of this need, emerged a corpus of specialized and sophisticated literature which seeks to take a comprehensive and integrated approach to study large-scale, multi-decadal, processes of substantial social and technological developments, in response to socioeconomic, technological and environmental challenges. This new strand of literature is known as sustainability transitions.

The main motivation of this study has been to apply sustainability transitions theory to new frontiers; to extend the geographical and historical terrain of the theory; to explore and ultimately counsel on long-term sectoral transitions in postcolonial developing island states, and thereby, to evaluate the merits, generalizability and transferability of sustainability transitions concepts, frameworks and models, and chiefly – the multi-level perspective.

The multi-level perspective is considered the most significant contribution to sustainability transitions scholarship. The multi-level perspective is constructed of three inter-linked levels: landscapes, regimes and niches. Regimes, or sectors, are at the core of this sustainability transitions model. They are formed when institutions and technologies in a certain sector of society merge, stabilize and gain momentum to become the dominant form of delivering specific services to society.

In theory, regimes or sectors will change by responding to both bottom-up pressure from niches, and to top-down pressures from the landscape. Niches are networks of innovation which comprise entrepreneurs and entrepreneurial ventures, research, development and demonstration laboratories and facilities, which support novelties and develop radical innovations that deviate from the existing regimes. They are considered the most essential source of changes in socio-technical regimes.

The socio-technical landscape is the wider external framework, which has influence on regime and niche dynamics. The landscape constitutes demographic trends, political ideologies, cultural values, and macro-economic patterns.

Yet, irrespective of its novelty and relatively narrow empirical foundations, the literature is making general propositions on the nature and dynamics of societal change and the way to deliver sustainable transitions.

There predispositions of the multi-level perspective in particular warrant further research. First, a focus on niche-driven bottom-up transitions. One cadre of scholars within the literature proposes that a bottom-up movement of radical technological solutions, and niche actors, and small firms, drive transitions. Second, a relative neglect of the role of government and government institutions in transitions. Third, a Western bias in the construction of the theory and in its study objects and locations.

In an effort to rectify the first bias, scholars proposed a typology of four transition pathways. In this pathways classification, each pathway scenario allocates different weight to different elements, at different analytical levels, in driving socio-technical system transitions. In the first pathway, the *transformation pathway* scenario, changes at the landscape wield pressures on the stability and integrity of the socio-technical regime. In this scenario, niches are not mature and innovation networks are not fully-developed. As a result of top-down pressures, dominant socio-technical regimes – sectors, industries – attune their structures and transform. Of the four transitions pathways, only this scenario deems most appropriate to describe processes of sectoral and societal changes in postcolonial developing island states.

To amend the second bias, on the role of government in transitions processes, scholars emphasized the need for further research on the political and governance context in which regimes and sectors transform, and on the interplay of government institutions with the landscape-regime-niche structure.

On the third bias, that the multi-level perspective was created and promulgated by the Dutch school of transition studies, and that as a literature it tended to focus on developed and industrialized states, researchers complained that the multi-level perspective is heavily flavored by the context in which it was conceived.

In Northern Europe scholars argued that with regards to sustainable transitions of sectors and industries, states function as the rule setter; sometimes, they intervene in the market to nationalize sectors or liberalize sectors, and let transitions happen naturally, organically, free, in a level playing field.

But this is not representative of other circumstances. It was recently proffered that the multi-level perspective may be less suitable for other contexts, namely, developing countries, and therefore needs modification.

These underdiscussed issues, the role of government institutions in transitions and transition processes in underdeveloped states, were the focus of this study.

This research introduced the multi-level perspective in the context of developing island states and small island developing states. This study employed primary data and secondary data collection strategies. One hundred and eighty (180) individuals were surveyed to gather in-depth responses regarding the transferability of transitions theory and the multi-level perspective from the developed to the underdeveloped context, as well as the notable sectoral transitions in Nauru, Jamaica and Sri Lanka; their drivers and dynamics.

In total, six sectors in three states were surveyed: the mining regime, financial regime and agricultural and dietary regime in Nauru, the mining regime and agricultural and plantations regime in Jamaica, and the agricultural and plantations regime in Sri Lanka.

Developing island states represent a particular case of sustainable development in view of their unique vulnerabilities. Remote and tropical, developing island states are relatively insular. Their insularity makes them economically disadvantaged. They tend to have limited natural resources and limited human and economic resources. Their small domestic markets suffer from restricted diversification and insufficient competition. Their economies hinge on international trade. They are extremely dependent upon few dominant activities and are strained by inadequate capacities in the public and private sectors. Competition over arable lands coupled with population growth is a common concern for many developing island states, and a threat to the sustainability of subsistence and commercial agriculture. Other environmental problems that most developing islands share are threats to biodiversity, degradation of coastal environments, and environmental pollution.

In terms of the multi-level perspective, the settings of postcolonial developing island states limited the evolution and involvement of niche-actors and niche-innovations in driving societal, sectoral and industrial transitions. Technology and knowledge were, and are, imported from the developed world. Regimes were more change-resistant.

Of the four transition pathways typology, the *transformation pathway*, better reflects transitions dynamics, but only to a limited extent.

This study found omnipresent governments, entrenched in every facet of the island's social and economic affairs, to be the only domestic actor capable of responding effectively to landscape pressures and to introducing new technologies and techniques, and of challenging existing regimes.

These research results cast doubts over the applicability of the theory. Local investigations of the multi-level perspective's epistemology and hypotheses with communities of knowledge, from Nauru, Jamaica and Sri Lanka, exemplified how the theory is not fully-representative of sectoral and societal transitions in unindustrialized island societies. The theory neglects the role of governments in regime transformations, it understates the rigidity of dominant socio-technical sectors and it overstates the role of niches and radical innovation networks in sectoral change processes. Research participants rejected the theory as it lends neither a normative nor a valid descriptive device to apply in policy making.

An additional limitation in the multi-level perspective was identified in the course of this work: an operational ambiguity of the notion of sustainable development. The choice not to interpret "sustainability" in a specific manner in transitions theory is obstructive.

Without an explicit definition of sustainability, sectoral transitions are harder to assess and compare to other alternative arrangements, in terms of performance, social-wide knock-on effects and environmental influences.

Furthermore, it was shown that regime transitions may achieve short-term sustainability targets confined to their boundaries, and yet fail to achieve long-term social-wide and ecological sustainability goals, as they deplete a country of its resources.

If the multi-level perspective were to better serve the sustainable development needs of local institutions in postcolonial, unindustrialized, developing island states, it will need to be supplemented with a more tangible and working conceptualization of sustainability. This should also be the case if the theory wishes to be relevant for use by government institutions. These findings merit future research.

Policy implications and the incompatibility of the MLP for policy design

The question of how to sustain socioeconomic development is arguably one of the utmost intellectually, ideologically and administratively challenging dilemmas of our times. Certainly, the need to avoid social and economic decline is a pressing concern facing 21st century governments in capital-constrained, competition-driven and fragile environments.

As states and societies struggle to transition their sectors (understood in this work as "socio-technical systems", see Part 1) onto a sustainable development path – of more inclusive growth, decoupled from environmental degradation – contemporary social science literature, and science and technology studies propose new and comprehensive theories, normative and descriptive templates that seek to advance our understanding of the nature and properties of socio-technical systems, the sources of inertia in these systems, and mainly, the circumstances under which these socio-technical systems transform from one configuration into another, and the processes through which such transitions transpire.

One such contemporary theory, Sustainability Transitions, has emerged to propose analytical frameworks and instruments of increasing sophistication to examine and guide long-term sectoral transformations.

In recent years, the theory and the multi-level perspective – an analytical model which stands out as the most rigorous framework of thought on the topic of Sustainability Transitions, gained a considerable foothold in various policy arenas. It is practiced by national and supra-national organizations as a policy-analysis and policy-guiding instrument (e.g. the United Nations Division for Sustainable Development¹⁰⁴, the United Nations Industrial Development Organization¹⁰⁵, the European Union¹⁰⁶), and it is applied to yield insight and advice on a wide-range of sectoral transitions in an increasing number of countries (e.g. Nigeria¹⁰⁷; also see Part 1).

And yet, the multi-level perspective suffers from several scientific shortcomings.

¹⁰⁴ See: Sagar and Majumdar, 2014.

¹⁰⁵ See: Pontoni and Bruschi, 2018.

¹⁰⁶ See: EU FP7 project PATHWAYS, Grant Agreement No.603942.

¹⁰⁷ See: Osunmuyiwa et al., 2018.

The theory evolved in European circumstances. It hinges on certain modes of interaction between institutions in socio-technical systems (i.e. sectors) typical of the West. Sustainability Transitions, in other words, has an origin-context, and by taking the theory out of this origin-context and applying it to postcolonial developing island states, this study illustrated that it does not offer a valid and workable explanation in these settings.

Parts III and IV of this work presented a powerful catalogue of incompatibilities of the MLP for analyzing and guiding policy processes in developing countries.

As the research demonstrated, governments, not niche actors, were the dominant and decisive actors in sustainability transitions in developing island states.

Governments planned, designed and operated large socio-technical systems, regimes and sectors, introduced (imposed) technologies, taxes and incentives, responded to landscape developments and pressures, developed and used (exploited) national resources, and in so doing determined societal development pathways and outcomes. Niches did not contribute to de-alignment or re-alignment processes at the regime level. The MLP is unable to register these dynamics.

Furthermore, the MLP does not offer a space in which the sustainability of socio-technical systems can be questioned, studied and assessed. In the context of developing island states, taking a societal-wide perspective, the MLP fails to answer the question: what makes regimes sustainable?

From a policy perspective, past and present policy-makers – participants of this research – dismissed the MLP as an inadequate, or inappropriate instrument for self-reflection and improvement purposes. The multi-level perspective failed to provide them with a coherent conceptual schematization – neither normative nor descriptive – of national sustainability transitions in developing island states. Particularly, this research posits that future studies of the MLP ought to notice the state-regime interface as these dynamics shape socio-technical transition pathways in developing countries.

Moreover, the MLP did not illustrate how institutional interventions in the administration of socio-technical sectors have spilled over to interrelated sub-systems (it indicates potential knock-on effects but falls short to describe spillover mechanisms). It did not indicate unsustainable development pathways and proved

incapable of signaling ways in which regime dominance is formed in the three case countries.

For public administration purposes, institutions will need a more accurate and prescriptive process for the governance of socio-technical systems. Complementary frameworks to the MLP are therefore necessary. Until then, employing the MLP in policy should be considered with caution.

For the governments of Nauru, Jamaica and Sri Lanka, and possibly for other developing states, the MLP was proved insufficient to lend insights on how to re-design those state-led socio-technical dominant systems upon which national sustainable development hinges.

Theoretical limitations of the MLP and policy implications for developed countries: the case of Israel

It is worth noting that efforts to expand transitions theory to include new analyses of historical socio-technical transformations, or natural experiments, using narrative development and the case study method in a qualitative research design (similar to those of Geels, 2005a and Geels 2005b), have been an enduring academic endeavor, with ever more empirical studies commissioned in recent years.

However, sample expansions do not imply a greater degree of socio-cultural diversity within the sample, and therefore, the inclusiveness of the sustainability transitions corpus may remain limited, and consequently uncontested but also, disadvantageously, universally unrepresentative of various forms of sectoral and societal transitions.

Indeed, when analyses are confined to circumstances comparable to those in which sustainability transitions emerged (see *Chapter 3. Critique on the 'Dutch school of transition studies'*), they tend to yield similar observations – and accounts – in terms of causes and consequences of transitions, as well as of economic structures, factors and functions.

Such has been the case with Israel, a developed, industrialized, member country of the Organization for Economic Co-operation and Development, well-integrated into the global marketplace, independent of most concerns typical to small island

developing states, with well-functioning socio-technical niches and radical innovation actors and networks, which span across all socially and economically significant sectors: agriculture, water, energy, transportation, construction, finance, industry, information and communications.

The country falls a distance away from the scope of this Analytical Component and it is for these abovementioned reasons that Israel is irrelevant to serve the motivation of expanding the socio-cultural terrain of transitions theory and the multi-level perspective in particular. In other words, for the purposes of this study, Israel merits little justification to explore its sectoral socio-technical transitions.

Consequently, it was not considered a case country in the Analysis Component (see: case justifications in *Chapter 7. Learning from case studies*). It does, nevertheless, feature in the Policy Portfolio segment of this thesis, yet in a distinctly different body of scholarship, for the purposes of a distinctly different investigation, to which transitions theory and the multi-level perspective are inadequate to contribute (see: Policy Portfolio, *Introduction*).

Evidently, the few attempts to apply the multi-level perspective to Israeli circumstances have resulted in observations already registered in the sustainability transitions literature. Hophmayer-Tokich (2010) analyzed the transition of the wastewater treatment sector, Teschner et al., (2012) studied transitions in Israeli water and energy regimes while Teschner and Paavola (2013) examined transitions in Israel's electricity sector. Other studies (see: Cohen and Naor, 2017) looked at the automotive sector. Some analyses (see: Gleick, 2018) have gone on a tangent to explore the conditions – understanding what drives changes in perceptions, management, and use of natural resources – that eventually lead to a transition, citing Israel's water sector.

In a similar fashion to studies conducted in other developed countries, those attempts demonstrated how the multi-level perspective ignores agency. Specifically, how government interventions played a part in motivating transitions (e.g. "earlier policies... resulted in socially-induced scarcity, degradation of environmental assets and loss of adaptive capacity to respond to future challenges", Teschner et al., 2012:457, and how "fragile government support for sustainability policy in Israel (led to) a failed transition of transportation industry from internal combustion engine to electric vehicle", 2017:595), how current approaches to technological re-configurations of sectors resulted in a more sustainable design (in the case of waste-

water treatment sector), and why future research should not play down the role of institutions in transitions (e.g. "although literature acknowledged the role of actors such as front-runners in influencing transition pathways... most studies have overlooked the role of... power in transitions... socio-technical transitions (should be) tested against their policy and political contexts... to recognize the 'dark side' of transitions arenas, the role of power and political dynamics in socio-technical transitions and in the attempts to steer or manage them", Teschner and Paavola, 2013:448-449).

A literature review external to the sustainability transitions collection (e.g. Nelson, 1993; Breznitz, 2006; Breznitz, 2007; Avidor, 2011; Nowak, 2011) illustrates the pivotal role of the state in sectoral transformations, not only in supporting the re-alignment and re-configuration of dominant regimes, but also in creating the conducive environments for nurturing strategic niches (i.e. "protected spaces", highlighted in Geels, 2011).

Several Israeli government mechanisms stand out in this regard including research, development and demonstration funding for applied research, for attaining proof of concept and commercial feasibility, for technological transfer from academia to industry; funding for incubators and innovation hubs; funding for consortiums of industrial companies and research institutions; and support for international industrial research, development and demonstration collaborations (Kaufmann and Yinon, 1996; Lach, 2000; Moss, 2011; Breznitz and Ornston, 2013; Authority, I.I., 2017).

Such observations evoke the findings of Mazzucato in *The Entrepreneurial State* on state institutions as drivers of sectoral re-configurations – an argument well-established in institutional economics and in development economics (see: North, 1990; Rodrik, 2000; Rodrik et al., 2004, and footnote 33). And yet, state-regimes and state-niches interactions are unregistered by the multi-level perspective, notwithstanding their contribution to sectoral transitions, and transitions in the society at large.

These observations, as stated above, support an already substantiated agenda to acknowledge and incorporate policy, and politics, into the transitions analysis (see: Scoones et al., 2015 and Avelino et al., 2016, and *Chapter 3. Critique*).

Analyses of Israeli sectors do not extend the empirical boundaries of the theory beyond the "developed frontier", and they did not engage with research subjects to

inspect transitions epistemology (see *Chapter 8. Data collection strategy and methods*).

Equally, the prevailing observation in sustainability transitions studies that socio-technical niches are the locus of innovation is pertinent to the Israeli context, where networks of innovation, entrepreneurs and entrepreneurial ventures contested and eventually replaced incumbent dominant socio-technical regimes. This adds little novelty to the theory.

Does all this license a consideration of sustainability transitions and the multi-level perspective in policy analysis and policy design processes in the Israeli government? This remains at the discretion of bureaucrats. Nonetheless, results of the examination carried out in this Analytical Component warrant a profound re-evaluation of the theoretical underpinnings of the multi-level perspective, before policy applications are pursued and practiced in developed countries as much as in developing ones.

Funding

The author takes pleasure in thanking University College London, Department of Science, Technology, Engineering and Public Policy (UCL STEaPP) for funding under the "STePP Pump Priming" field research grant and under the "Doctoral Research Funding" grant. The author would also like to acknowledge the support of Mr Joseph Markowitz and Mr Ethan Goldman.

Appendix 1. Questions guide

Preface

Thank you for engaging with this doctoral research project, entitled "Managing Sustainability Transitions: The Role of Government Institutions in Driving the Development of Island States".

This questions guide contains information about the study, its scope, its approach, and the interview process. Before you commit to taking part, it is important you read these guiding principles carefully.

If you find a topic unclear or if you wish to be provided with further details, please contact the researcher in advance of the interview. After you read the questions guide, and when the interview will be initiated, you will be asked to sign a consent form (a separate sheet) allowing the researcher to record and analyse the information you provide, while maintaining your anonymity (unless you agree to attach your name with your contribution). Your initial consent to support this research notwithstanding, you are entitled to contact the researcher at any time during the research process – and before information from your interview enters the public domain – and remove your contribution.¹⁰⁸

Purpose

This project studies large-scale, multi-decadal, social and environmental transitions in island states. It focuses on transitions, or changes, of dominant sectors (defined here as "socio-technical regimes"; the unit of analysis).

The study is primarily concerned with the role government institutions play in driving sectoral transitions, from one configuration to another, more sustainable configuration.

¹⁰⁸ Information gathered and analysed for the purposes of this study is treated as strictly confidential and handled in accordance with the provisions of the Data Protection Act 1998. A significant part of the interviewee body refused to sign the consent form – to not be attached with their records and testimonies, but agreed to be interviewed nevertheless. In accordance with supervisors, their opinions are included in this study.

Ultimately, the research intends to support evidence-based policies for sustainable development transitions in developing island states.

Analytical and methodological background¹⁰⁹

A socio-technical regime is a system. It is a collection of interdependent actors, institutional and sectoral, social rules and technological practices, knowledge, and artifacts, organized in a given manner to yield particular social services. It is an analytical concept. Regimes are formed when institutions and technologies in a certain sector of society coalesce, stabilize and gain momentum to become the dominant form of delivering certain services to society, while at the same time – resist external changes to their configuration. This configuration, or 'the way of doing things', defines the potential paths of development for the sector.

When a regime gains momentum it becomes more stable and it exhibits lock-in dynamics: the replication of structures, self-reinforcing behaviors and an increasing resistance to other arrangements and configurations. Under these conditions, the regime's path of development will be steady.

But socio-technical regimes do change, and transition processes of sectors and industries are frequently initiated in the micro-level of niches or in the macro-level of landscapes, with various degrees of success (see diagrams 1-3 below).

Niches are networks of innovation. They comprise entrepreneurs and entrepreneurial ventures along with others elements and actors of the innovation 'ecosystem': research, development laboratories, small businesses and the investor community which "support novelties" and work on "radical innovations that deviate from existing regimes". "Niches are locations where it is possible to deviate from the rules in the existing regime".

Niches are considered the most important source of change of socio-technical regimes. A successful niche "can challenge the dominance of a regime". It can pose and, at times, maintain challenges to incumbent socio-technical regimes. It can displace it.

¹⁰⁹ The questions guide was distributed to subjects prior to the interview, or the group discussion. A description of the research purpose and background was conducted in person with the subject, at the beginning of each discussion.

Bottom-up niche-driven transition will occur if niche-actors are able to direct precise research, development and demonstration activities, to garner attention and resources, to build social networks and partner with influential actors, to learn and improve their technical platforms and organizational operations, to deploy and commercialize their alternative system design and to command more resources.

Socio-technical transitions can also be initiated from the top-down at the landscape level.

In broad terms, the socio-technical landscape is the wider external framework, or settings, which influence on regime and niche dynamics. The landscape constitutes "the technical and material backdrop that sustains society (and it) includes demographic trends, political ideologies, societal values, and macro-economic patterns". As opposed to niches and regimes, it changes slowly. Institutions can engage with transitions directly at landscape level (and at the regime level). Such interventions usually take the form of introducing or redefining sectoral policies and the development of new mechanisms which influence existing regimes.

Diagram 1. Multi-level perspective on socio-technical transitions (adapted from Geels, 2002:1263).

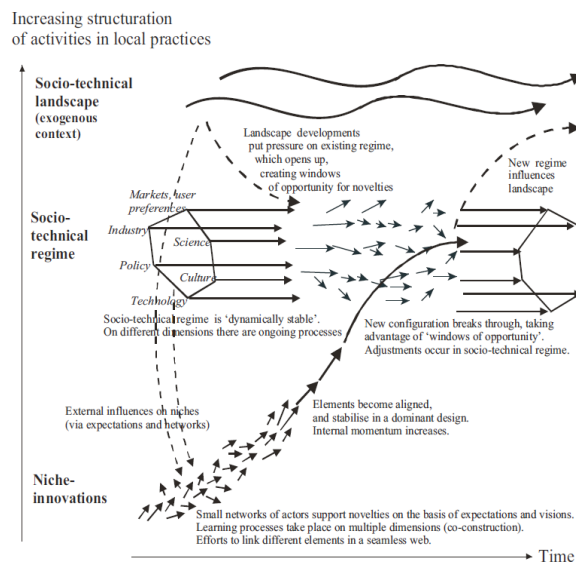


Diagram 2. Alignment of ongoing processes in a socio-technical regime (Adapted from Geels, 2004:912).

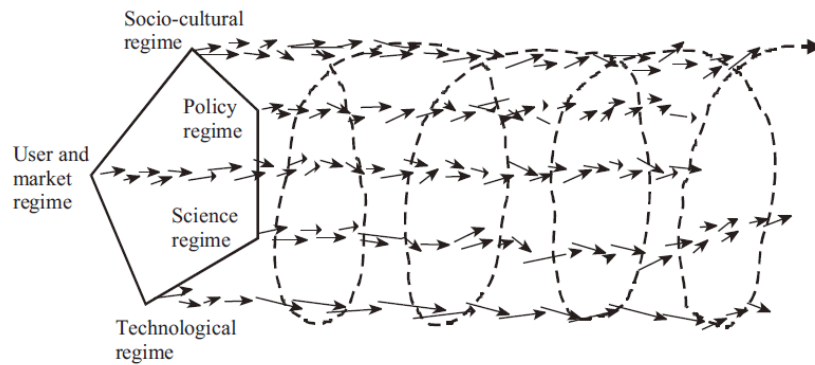
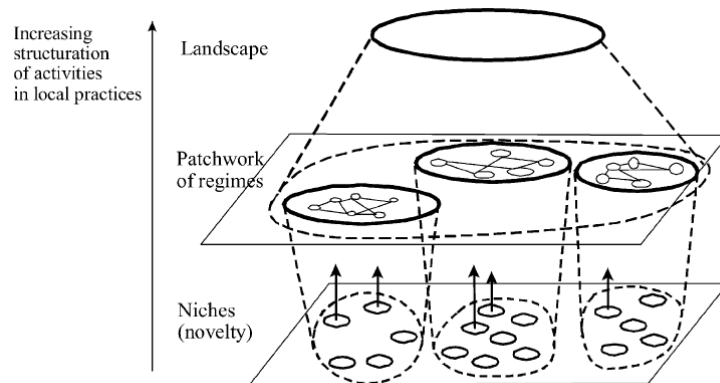


Diagram 3. Multiple levels as a nested hierarchy (Adapted from Geels, 2004:913).



Scope of the inquiry

This research explores the relationships between government institutions and socio-technical regimes (sectors, industries), and the dynamics that underpin regime changes over time, from one configuration of elements to another, more sustainable configuration (or less-sustainable).

It also attempts to reflect on the central tenets of "transitions theory" and the "multi-level perspective", and to evaluate with the interviewee the merits, generalizability and transferability of the multi-level perspective as a sustainable development framework; a policy analysis and policy design instrument.

As aforementioned, the research intends to support evidence-based policies for sustainable development transitions in developing island states.

Questions guide¹¹⁰

Please review the multi-level perspective diagrams. Please think of domestic sectors, in any societal and economic domain, which contributed the most to national development (or underdevelopment) since the independence of the country.

On transitions theory and the multi-level perspective in developing island states

1. To what extent does the multi-level perspective reflect the social structure and transitions dynamics in the country?
2. Agree or disagree: in your country, and to the best of your knowledge in developing island states, niche-actors and innovation networks (technological entrepreneurs, start-ups, research and development laboratories, demonstration projects, actors exploring radical innovations that deviate from existing regime), play a significant part in driving societal and sectoral transitions (please elaborate)?
3. Agree or disagree: dominant, domestic socio-technical regimes – a sector, an industry, a system or a mode of production and consumption of goods and services – have been change-resistant to disturbance "from below" (using the multi-level perspective diagrams) (please elaborate)?
4. What actors, at what level (micro-meso-macro) traditionally introduced new knowledge and practices, new modes of production, new technologies and techniques, new rules and norms, and created or challenged existing regimes (using the multi-level perspective diagrams) (please elaborate)?
5. How are the concepts of "development", "sustainability", "national resources", "landscapes", "regimes", "niches", and "innovation" understood in the country? In the local culture and language? Is there a level of analysis or a unit of analysis in the multi-level perspective you consider irrelevant or unclear?

¹¹⁰ The research attempts to confirm, to correct or to nullify a set of assumptions, presented here as questions. Note that not all interviewees were able to answer all the questions.

6. How would you describe the relations between local government institutions, socio-technical regimes (or socio-technical systems), niche-actors, national resources, and the notion of "sustainable development"?

Analyzing specific societal and sectoral transitions in the country

7. Since independence, what sectors – in any environmental, societal and economic domain – contributed the most to national development?

8. When were these sectors founded? How did they emerge? What social purposes were they meant to serve? Did they replace existing regimes? Did they undergo any significant transitions since their installation (re-configuration)?

9. Can you identify the mechanism and policies behind their formations? Behind their transformations?

10. Can you identify the intent that was driving their development (to improve the governance of national resources, or more recently, to advance the SDGs)?

11. With regards to the multi-generational cycle of development and decline, or the "boom and bust" of sectors and markets, can you highlight inflection points, or critical government decisions, that set a sector, a regime, a system, or the society at large, on a specific development path (or decline)?

For example, creating mineral extractive industries, changing land ownership regimes, enacting educational access rights, investing in health, privatizing specific companies, managing national debt, investing in modernization in a specific industry or sector?

12. Can you describe the relations between these sectors and the national resources base (natural, economic and human resources)? Or, in what ways and means government decisions alter the conditions, or distribution, of assets in society?

13. With regards to initiating and driving sectoral transitions, can you compare the importance of government institutions with that of small and medium sized firms, research and development laboratories, subsidized demonstration projects, small market niches, entrepreneurs, start-ups, spinoffs, firms working on radical innovations that deviate from existing regimes?

14. With regards to initiating and driving sectoral transitions, can you compare the importance of government institutions with that of non-governmental organizations and civil society organizations?

15. In the same topic, can you compare the importance of government institutions with that of external, foreign organizations, foreign governments, multi nationals?

Linking the multi-level perspective with adaptive policy management practices in the country

Please review the adaptive policy management diagram (diagram 4 below).

16. Can you identify the key actors and stakeholders involved in sectoral transitions? Who was involved in decision making processes? What were their motivations (economic development, social progress, ecological concerns, rent-seeking and corrupt behaviors)? What was their rational?

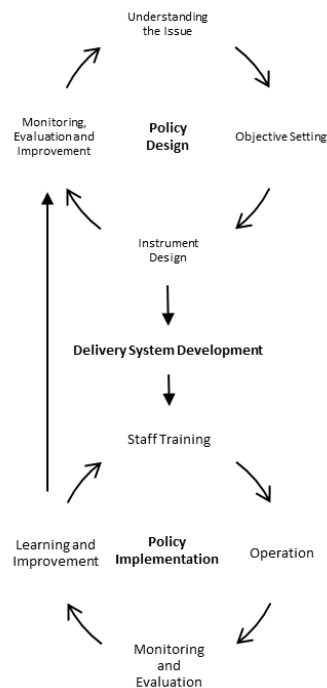
17. If government institutions formed the dominant sectors in the country, and on the topic of knowledge, practices and analytical frameworks employed for designing strategies and interventions to re-configuring sectors: what scientific concepts, models, frameworks or principals were used (if any)? What measuring or monitoring systems were deployed?

18. Were systems, sectors and other dominant regimes well understood by decision-makers and officials before interventions were exercised? How did decision-makers understand sustainable development? Were critical resources and assets identified?

19. On the implementation of policies: was the policy delivery staff (in the government or the sector) well-educated? well-trained? Were there monitoring and evaluation measures? Were there any learning and improvement mechanisms? Were technical or technological systems deployed? What scientific and technical advice was applied?¹¹¹

¹¹¹ During the discussion, each subject was handed the *Policy Design and Implementation as an Iterative Cycle*.

Diagram 4. Policy Design and Implementation as an Iterative Cycle (adapted from Swanson et al., 2006).



20. How do you find the idea of adaptive policy design and implementation? How useful do you find the adaptive policy management framework?

Linking the multi-level perspective with the capital theory approach to sustainability¹¹²

This research suggests the capital theory approach to sustainability as an operational sustainable development framework (see diagram 5 below).

The capital approach argues that any government has a "portfolio of national assets" at its disposal. This portfolio of national assets is comprised of natural capital assets, for instance minerals, lands, water resources, energy sources, economic capital assets, such as built infrastructures (i.e. manufactured capital), sovereign funds and foreign exchange reserves, human capital assets, such as healthy and educated "stock" of population, and social capital intangible assets, for instance, general trust, trust in institutions and social networks.

¹¹² All interviewees and research subjects of this study answered these questions.

The capital stock is a metaphor which helps policy makers think of national assets as inventories that change over time, depending on government policies and socio-technical regimes (i.e. sectors) which execute these policies.

The government can choose to deplete a certain stock (over-exploit), to invest in order to increase a certain stock, or to limit the access to a stock by not allowing the population to own lands, not allowing the population to gain education and skills, and so forth.

Some assets can be manufactured or substituted, e.g. fossil energy sources can be replaced by solar panels, water can be desalinated, and some cannot (health, trust).

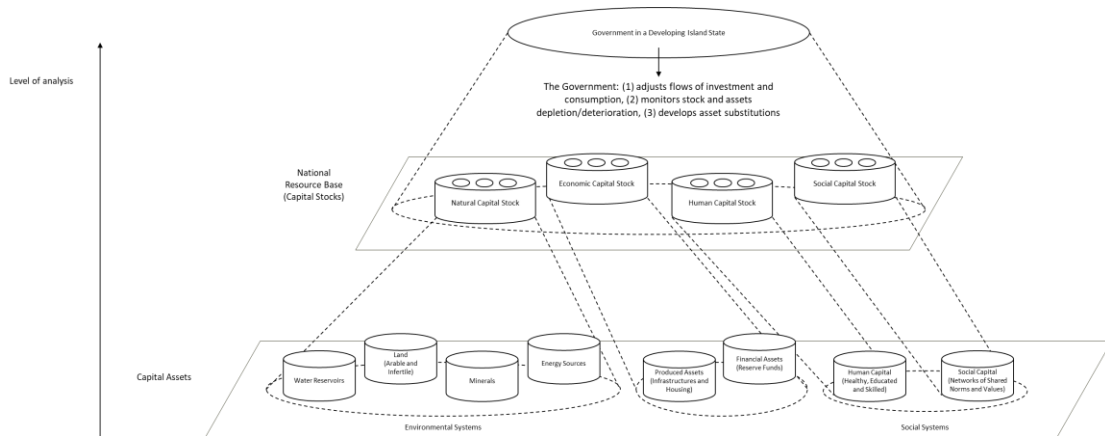
It is easy to think of these national capital stocks (natural, economic, human and social) as the "factors of production" of wellbeing, progress and sustainable development.

Questions

21. Do you find the capital theory convincing? Useful for policy analysis and policy-making? Applicable to measure sustainable development outcomes over time?

22. Have you observed any similar system of measurements employed by institutions (e.g. system of environmental and economic accounting)? Were there any frameworks in place to highlight the mutual influences between different capital stocks, for instance, understanding the influence of human capital on economic capital, or natural capital on social capital?

Diagram 5. Roles of institutions in the management of a society's resource base (capital stocks): (1) adjusting flows of investment in, and consumption of, capital stocks and assets, (2) monitoring stock and assets depletion/deterioration, (3) developing asset substitutions.



Roleplay simulation: the interviewee as decision-maker¹¹³

23. Take a moment to pause. Reflecting on the discussion, if you were given the office of the Prime Minister or President for the time span of the 1960s until the early 2000s, what would you do in a different way? How would you prioritize policy interventions? How would you manage sectors, industries and national resources?

¹¹³ This set of questions was not circulated in advance, rather it was presented at the end of each interview. All interviewees and research subjects of this study answered this question.

Appendix 2. List of interviews

List of interviews.

#	Organisation	Participant	Year
1	Japan International Cooperation Agency	Senior Advisor	2017
2	Japan International Cooperation Agency JICA	Senior Advisor	2017
3	Japan International Cooperation Agency JICA	Senior Advisor	2017
4	The World Bank Group Japan	Senior Advisor	2017
5	The World Bank Group Japan	Development Specialist	2017
6	The World Bank Group Philippines	Senior Advisor	2017
7	Center for Disaster Preparedness Philippines	Senior Administrator	2017
8	Republic of Nauru	Former Politician	2017
9	Pacific Island Forum Group	Former Member	2017
10	Government of Nauru	Senior Official	2017
11	Government of Nauru	Official	2017
12	Government of Nauru	Official	2017
13	Foreign Government, Ministry of Foreign Affairs	Diplomat to Nauru	2017
14	Foreign Government, Ministry of Foreign Affairs	Former Diplomat to Nauru	2017
15	United Nations Development Program	Former Specialist to Nauru	2017
16	United Nations Development Program	Former Specialist to Nauru	2017
17	Foreign Government, Ministry of Foreign Affairs	Pacific Specialist	2017
18	Foreign Government, Ministry of Foreign Affairs	Pacific Specialist	2017
19	Organization for Economic Co-operation and Development OECD	Senior Economist	2017
20	Organization for Economic Co-operation and Development OECD	Senior Economist	2017
21	Organization for Economic Co-operation and Development OECD	Senior Economist	2017

#	Organisation	Participant	Year
22	Organization for Economic Co-operation and Development OECD	Senior Economist	2017
23	Organization for Economic Co-operation and Development OECD	Senior Economist	2016
24	Statistics Canada	Former Senior Official	2016
25	Columbia University in the City of New York	Professor of Economics	2017
26	Columbia University in the City of New York	Professor of Economics	2017
27	Columbia University in the City of New York	Professor of Economics	2017
28	Columbia University in the City of New York	Professor of Economics	2017
29	Columbia University in the City of New York	Professor of Sustainable Development	2017
30	Columbia University in the City of New York	Professor of Sustainable Development	2017
31	Columbia University in the City of New York	Professor of Journalism	2017
32	Columbia University in the City of New York	Professor of Environmental Law	2017
33	Columbia University in the City of New York	Professor of Anthropology	2017
34	Sciences Po Paris	Professor of Economics	2017
35	International Monetary Fund	Former Senior Official	2017
36	Harvard University	Professor of Economics	2017
37	University of Oxford	Professor of Economic History	2017
38	Israel Academy of Sciences and Humanities	Senior Fellow, Political Economist	2017
39	Israel Academy of Sciences and Humanities	Senior Fellow, Political Economist	2017
40	Israel Academy of Sciences and Humanities	Senior Fellow, Political Economist	2017
41	Israel Academy of Sciences and Humanities	Senior Fellow, Geographer	2017
42	Israel Academy of Sciences and Humanities	Senior Fellow, Macro-economist	2017
43	Israel Academy of Sciences and Humanities	Senior Fellow, Macro-economist	2017
44	National Economic Council, Government of Israel	Senior Economist, Macro-economist	2017
45	National Economic Council, Government of Israel	Senior Economist, Macro-economist	2017

#	Organisation	Participant	Year
46	National Economic Council, Government of Israel	Senior Economist, Wellbeing Specialist	2017
47	National Economic Council, Government of Israel	Senior Economist, Wellbeing Specialist	2017
48	Central Bank of Israel	Former Director	2017
49	Central Bank of Israel	Senior Economist, Economic and Human Capital Specialist	2017
50	Central Bank of Israel	Senior Economist, Economic and Human Capital Specialist	2017
51	Island First	Member	2017
52	Jamaica Social Investment Fund JSIF	Senior Official	2017
53	Prime Minister's Office, Jamaica	Official	2017
54	Ministry of Industry, Commerce, Agriculture and Fisheries, Jamaica	Senior Official	2017
55	Ministry of Industry, Commerce, Agriculture and Fisheries, Jamaica	Senior Official	2017
56	Ministry of Economic Growth and Job Creation, Jamaica	Former Senior Official	2017
57	Ministry of Health, Jamaica	Senior Official	2017
58	Ministry of Agriculture and Fisheries, Jamaica	Senior Official	2017
59	Ministry of Water and Housing, Jamaica	Former Senior Official	2017
60	Ministry of Public Utilities and Transport, Jamaica	Former Senior Official	2017
61	Ministry of Land and Environment, Jamaica	Former Senior Official	2017
62	Jamaica National Heritage Trust	Senior Advisor	2017
63	Planning Institute of Jamaica	Senior Official	2017
64	Planning Institute of Jamaica	Former Senior Official	2017
65	Planning Institute of Jamaica	Official	2017

#	Organisation	Participant	Year
66	Planning Institute of Jamaica	Official	2017
67	Rural Agricultural Development Authority, Jamaica	Former Senior Official	2017
68	Urban Development Corporation, Jamaica	Former Senior Official	2017
69	National Housing Development Corporation, Jamaica	Former Senior Official	2017
70	National Housing Trust, Jamaica	Former Senior Official	2017
71	Water Resources Authority, Jamaica	Former Senior Official	2017
72	Land Taxation Relief Board, Jamaica	Former Senior Official	2017
73	Caribbean Agricultural Research Development Institute, Jamaica	Former Senior Official	2017
74	Sugar Industry Authority, Jamaica	Former Senior Official	2017
75	Sugar Company of Jamaica, Jamaica	Former Senior Official	2017
76	Banana Board, Jamaica	Former Senior Official	2017
77	Banana Export Company, Jamaica	Former Senior Official	2017
78	Institute of Jamaica	Former Official	2017
79	University of the West Indies at Mona	Professor of History	2017
80	University of the West Indies at Mona, Institute of Social and Economic Studies	Professor of Economics	2017
81	University of the West Indies at Mona, Institute of Social and Economic studies	Professor of Economics	2017
82	University of the West Indies at Mona, Institute of Social and Economic studies	Professor of Economics	2017
83	University of the West Indies at Mona	Professor of Sociology	2017
84	University of the West Indies at Mona	Professor of Political Science	2017
85	Government of Jamaica	Former Senior Advisor to Prime Minister Manley	2017
86	Government of Jamaica	Former Senior Advisor to Prime Minister Seaga	2017

#	Organisation	Participant	Year
87	University of Technology Jamaica	University Professor	2017
88	Jamaica Bauxite Institute	Former Senior Official	2017
89	Agricultural Farm	Owner	2017
90	Maroon Community in Portland Parish	Member	2017
91	Maroon Community in Portland Parish	Member	2017
92	Maroon Community in Portland Parish	Member	2017
93	Maroon Community in Portland Parish	Member	2017
94	Maroon Community in Portland Parish	Member	2017
95	Rastafarian Community in Trench Town	Member	2017
96	Rastafarian Community in Trench Town	Member	2017
97	Rastafarian Community in Trench Town	Member	2017
98	Rastafarian Community in Trench Town	Member	2017
100	Rastafarian Community in Trench Town	Member	2017
101	Christian Community in Kingston	Member	2017
102	Christian Community in Kingston	Member	2017
103	Christian Community in Kingston	Member	2017
104	Christian Community in Kingston	Member	2017
105	Liberation Tigers of Tamil Eelam	Former Member	2017
106	Liberation Tigers of Tamil Eelam	Former Member	2017
107	Liberation Tigers of Tamil Eelam	Former Member	2017
108	Liberation Tigers of Tamil Eelam	Former Member	2017
109	Provisional Transnational Government of Tamil Eelam	Prime Minister	2017
110	Ilankai Tamil Sangam	Tamil Activist	2017
111	Ilankai Tamil Sangam	Tamil Activist	2017
112	Ilankai Tamil Sangam	Tamil Activist	2017
113	Ilankai Tamil Sangam	Tamil Activist	2017
114	Ilankai Tamil Sangam	Tamil Activist	2017

#	Organisation	Participant	Year
115	Ilankai Tamil Sangam	Tamil Activist	2017
116	Sri Lanka: The Struggle for Peace in the Aftermath of War	Author	2017
117	This Divided Island: Stories from the Sri Lankan Civil War	Author	2017
118	Tamil Refugee and Activist	Tamil Refugee and Activist	2017
119	Tamil Refugee and Activist	Tamil Refugee and Activist	2017
120	Colombo University, Sri Lanka	Professor of Economics	2018
121	Colombo University, Sri Lanka	Professor of Economics	2018
122	Colombo University, Sri Lanka	Professor of Economics	2018
123	Centre for Policy Alternatives, Sri Lanka	Executive Director	2018
124	Center for the Study of Developing Societies (CSDS), New Delhi	Former Professor of Political Science	2018
125	Ministry of Agriculture, Sri Lanka	Senior Advisor	2018
126	Ministry of Sustainable Development and Wildlife, Sri Lanka	Former Senior Official	2018
127	Ministry of National Heritage, Sri Lanka	Senior Advisor	2018
128	Sri Lanka Institute of Management, Sri Lanka	Former Vice President	2018
129	Sri Lanka Institute of Marketing, Sri Lanka	Former Board Member	2018
130	Sri Lanka Agricultural Economics Association, Sri Lanka	Former President	2018
131	University of Peradeniya, Sri Lanka	Professor of Agricultural Economics	2018
132	University of Peradeniya, Sri Lanka	Professor of Agricultural Economics	2018
133	University of Peradeniya, Sri Lanka	Professor of Agricultural Economics	2018
134	The X Group Sri Lanka	Member	2018
135	Mining Sector in Sri Lanka	Former Director	2018
136	Sustainable Agriculture Sector in Sri Lanka	Director	2018
137	National Science Foundation Sri Lanka	Former Committee Chairman	2018
138	Tea Estate in Kandy Area, Sri Lanka	Manager	2018
139	Tea Estate in Nuwara Eliya Area, Sri Lanka	Factory Manager	2018

#	Organisation	Participant	Year
140	Tea Estate in Nuwara Eliya Area, Sri Lanka	Factory Floor Manager	2018
141	Tea Estate in Central Province, Sri Lanka	Manager	2018
142	Tea Estate in Central Province, Sri Lanka	Plantation Worker	2018
143	Tea Estate in Central Province, Sri Lanka	Plantation Worker	2018
144	Tea Estate in Central Province, Sri Lanka	Plantation Worker	2018
145	Tea Estate in Central Province, Sri Lanka	Plantation Worker	2018
146	Tea Estate Primary School in Central Province, Sri Lanka	Principal	2018
147	Tea Estate Primary School in Central Province, Sri Lanka	Teacher	2018
148	Tea Estate Primary School in Central Province, Sri Lanka	Teacher	2018
149	Tea Estate Primary School in Central Province, Sri Lanka	Teacher	2018
150	Agriculture (non-plantation) Sector in Sri Lanka, Sri Lanka	Large Firm Owner	2018
151	Fishing Sector in Sri Lanka	Large Exporter	2018
152	Nallur Kandaswamy Temple in Jaffna, Sri Lanka	Monk	2018
153	Nallur Kandaswamy Temple in Jaffna, Sri Lanka	Monk	2018
154	Agriculture Sector in Sri Lanka	Agricultural Scholar and Expert	2018
155	Asian Development Bank	Former Senior Consultant	2018
156	International Labor Organization	Senior Consultant	2018
157	ACTED Agency for Technical Cooperation and Development	Former Senior Advisor	2018
158	UCLA	Professor of Geography	2018
159	University of Cambridge	Professor of Economics	2018
160	University of Cambridge	Doctor of Science and Technology Policy	2018
161	University of Cambridge	Extreme Risks and the Global Environment Expert	2018
162	University of Cambridge	Doctor of Health, Regulation and Governance	2018
163	University of Cambridge	Doctor of Philosophy	2018

#	Organisation	Participant	Year
164	University of Cambridge	Doctor of Ecology and Conservation Biology	2018
165	University of Cambridge	Doctor of Culture and Science	2018
166	University of Cambridge	Ecosystem Services and Governance Expert	2018
167	University of Cambridge	Professor of Ecology and Conservation Biology	2018
168	University of Cambridge	Professor of Archaeology	2018
169	University of Cambridge	Sustainable Development Specialist	2018
170	University of Cambridge	Doctor of Human Biology	2018
171	University of Cambridge	Social Risks Expert	2018
172	University of Cambridge	Expert of Science and Policy, and Biological Sciences	2018
173	University of Cambridge	Expert of Ecology, Conservation, and Government Interventions	2018
174	University of Cambridge	Ecology and Conservation Specialist	2018
175	University of Cambridge	Ecology and Conservation Specialist	2018
176	University of Cambridge	Ecology and Conservation Specialist	2018
177	University of Cambridge	Ecology and Conservation Specialist	2018
178	University of Oxford, Future of Humanity Institute	Professor	2018
179	The HALO Trust Sri Lanka	Program Officer	2018
180	The HALO Trust Sri Lanka	Program Officer	2018

In total, 180 individuals were surveyed in Japan (Tokyo and Sendai), in the Philippines (Quezon City and Metro Manila), in Sri Lanka (Colombo, Negombo, Kilinochchi, Jaffna, Kandy, Nuwara Eliya, Hatton, Rozella, Binoya and with representatives from Batticaloa and Galle), in the United States (Brooklyn, Manhattan, New Jersey), in Canada (Ontario), in Jamaica (St Andrew, St Catherine, St Thomas and Portland Parishes and with representatives from Westmorland

Parish), in France (Paris), in the United Kingdom (Cambridge and London), in Israel (Jerusalem and Tel Aviv).

Data collection took place from October 2016, when the author was in a civil servant position, and August 2018.

Primary data were collected through: (a) participant observations in a wide array of locations, including farms, plantations, factories, urban ghettos, religious and ethnic gatherings, temples and churches, conferences, workshops, libraries, airports and minefields, (b) focus group discussions with scholars, teachers, economists and peasants, and (c) semi-structured interviews with scholars, experts and key informants; individuals involved, currently or previously, with policy analysis and policy design and implementation in national and international theaters, pertinent to the research topics, including government institutions of Nauru, Jamaica and Sri Lanka, the United Nations, the World Bank, Asian Development Bank, Caribbean Development Bank, the Organization for Economic Co-operation and Development, Japan International Cooperation Agency, and the International Monetary Fund.

The sample of interviewees was selected using a snowball sampling technique. The data were validated through interviews, focus group discussions and secondary sources.

In this study, seniority, as in Senior Government Official or Senior Advisor, is used to retain an interviewee's anonymity, and refers to individuals who occupy one of the following capacities: Minister, Secretary, Permanent Secretary, Deputy Secretary, Under Secretary, Chief of Staff, Director and Head of Agency, or Executive Assistants and Advisors to one of the above; all with a "commissioned status" (commissioned by their overseer), or an "elected status" (elected by board members or by the public).

In the course of field work, a number of community associations, which did not belong to the initial study sample, invited the researcher to visit and observe their meetings. Data gathered through participant observations and semi-structured interviews were documented immediately in the field.

Diagrams of concepts, perspectives, models and processes (the multi-level perspective, the capital theory approach to sustainability, adaptive policy-making), were reviewed and analyzed with interviewees, during field work. Insights gained

through participant observation also helped the researcher to simplify the analysis process.

Most interviews were held either at participants' organisations, institutions, homes or communities. A small number of interviews were held online.

The sample included a selection of local experts with a profound understanding on the subjects of this study. They included international, national and local organisations, academia, and non-for-profits. All participants worked directly on development related issues. In all cases participation and correspondence were voluntary.

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You Say You Want an Evolution?

The Gradual Nature of Policy Change: Developing a System of National Wellbeing Indicators in Times of Civic Unrest

DPA Policy Portfolio; second component of the DPA thesis

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Preface to DPA policy portfolio analytical report

The phenomenon of policy change is widely investigated, and a broad range of theories of the nature of policy change exists in political science literature. This critical analysis report aims to contribute to the discussion with empiric evidences. It draws on the personal accounts of a civil servant and it argues that four prominent ideas – gradualism, advocacy coalition framework, policy learning and policy diffusion – should be deemed most appropriate to describe processes of policy change. Following a review of these four theories, this critical analysis report proceeds to analyze Israel's policy program to develop a system of national wellbeing indicators. The development of a system of national wellbeing indicators was a four-year undertaking (2012-2016) intended to complement the system of national accounts and thereby improve national decision-making processes with rich, comprehensive and timely information on the state of progress in the country. It was galvanized by Israel's social justice protests (2011) and bolstered by the Trajtenberg Committee – a commission appointed by the Israeli Prime Minister (2011) to examine Israel's socioeconomic challenges. The policy program was administered at the Prime Minister's Office, benefited from a collaboration with the OECD, and contribute to by a cabal of officials, scholars and statisticians. It was ratified in two government resolutions, covered in national media and presented abroad, in the UN, the EU, the OECD, the governments of Germany and Finland. Thus, the program offers a sufficiently extended, sufficiently significant, sufficiently complex process to infer from on the nature of policy change; in terms of time, resources, attention and stakeholders' involvement. The critical analysis report renders a meticulous account of the evolution of the system of national wellbeing indicators – as of 2018 in its fourth modified edition – against a backdrop of the social protests, its subsequent conceptualization in the Ministry of Environment, its transferal to the National Economic Council at the Prime Minister's Office, its elaboration and assemblage, its outcomes and influences, and its lacunae and shortcomings. What emerges from the critical analysis is an image of a "pendulum of policy making": swinging right and left, back and forth, between progress and regressions, coalitions and oppositions, advancements and failures and, ultimately, paints a portrait of the incremental, protracted, frail, nature of policy change.

Introduction

Investigation into the Nature of Policy Change

1. Investigation into the nature of policy change

This critical analysis attempts to contribute to public policy literature by proposing a hypothesis of the general nature of policy change, and then, by providing it with empiric observations. It asks, in other words, what can we learn from a specific, particular, policy process on the general nature of policy change? – if, indeed, such learning is possible.

The paper is organized around two questions. First, it asks what is the general nature of policy change; can some theoretical approaches be deemed more applicable for its description and analysis? To this question, the paper provides an answer early into the introduction. Then, it asks whether evidences from a particular policy process support a specific theory, or a host of theories, of policy change?

To conduct the two inquiries, this paper draws on literature and on the personal accounts of a civil servant, the author, in a selected, evolving case study. The first investigation, on the general nature of policy change, is succinct. It is less of an inquiry and more of a proposition. It covers some notable works in the area of policy change and argues that four frameworks, when combined, can best explain policy changes. The second investigation, into a selected case study, is extensive – it comprises most of this document. It aims to support the theory of policy change with empirical evidences.

The area of the policy process is "systems of national statistics" and how they evolve and are considered in the national policy making structure. Specifically, the policy process in question is the development of a "system of national wellbeing indicators" in Israel between 2012 and 2016. The purpose of the analysis of the process is to examine what its underlying motivations, methods and dynamics can indicate on the gradual, incremental, general nature of policy change.

2. Structure of the critical analysis

The critical analysis report is divided into an introduction, three parts and a summary, and it is constructed as follows. The remainder of the introduction examines four theories on the general nature of policy change: Gradualism, Advocacy Coalition Framework, Policy Learning and Policy Diffusion. It then highlights the need for empirical evidences to support theory and weighs, briefly, the advantages and disadvantages of learning from case studies. It moves to present the area of the selected policy process: the system of national wellbeing indicators, and next, it presents the role of the author with regards to the entire policy process, from the events that incited activity in 2011 to fruition in 2016 and 2017.

The first Part, entitled *Implosion*, describes the origins of the policy change, at the social justice movement. It takes stock of the political events in the country and employs the tenets and jargon of the four frameworks of policy change from the introduction, to demonstrate that they can be applied to explain particular policy processes.

The Pendulum of Policy Making is the second Part of the report. It is a careful documentation of the policy making process, which migrated in 2012 from the civil society to the central government. It illustrates the pertinence of the theories of policy change for the analysis of Israel's four-year, multi-participant, national program to design wellbeing indicators. With the first Part, it constitutes most of the case study. The Part integrates descriptions of procedures, initiatives and policy coalitions with personal reflections of the author. The third Part, *How's Life in Israel?*, presents a synopsis of findings from the system of national wellbeing metrics. It continues to discuss the accompanying media campaign and a major shortcoming of the policy program, all attesting to the main arguments of the analytical report. It is followed by concluding remarks.

3. *The nature of policy change*

A pantheon of articles has been devoted to the subject of policy change, and several theories of public policy were proposed to articulate its nature, across various policy areas: education, health and finance, to name just a few.

Elementary ideas of policy change

One traditional school of thought, discussed the levels and hierarchies at which policy change is occurring: the individuals, their rank, and their associated authorities, where change stems from and where it is administered. This *Top-Down School* of policy change views senior strategists, senior policy creators and chief policy implementers as the primary actors in the policy process. Accordingly, Top-Down scholars study the persons and circumstances of policy making; the structures, the commitments, the clarity of intents and the objectives of actors and coalitions (Sabatier and Mazmanian, 1979; Matland, 1995; Sabatier, 2005)

A second, competing approach, the *Bottom-Up School*, studies larger networks of actors, across different levels of the organizational hierarchy, where the delivery of public services takes place. Theorists belonging to this school argue that the strategies and targets of local and regional actors affect both the planning and the execution of nation-wide policies and reforms (Elmore, 1979; Barrett and Fudge, 1981; Hjern and Hull, 1982; Hanf, 1982).

Advanced ideas of policy change

More recent works prescribed a Joint Framework, in which both Top-Down and Bottom-Up actors interact in the emergence of policy needs and ideas, their articulation and formation by means of negotiations and conflict mediation across different policy areas (Elmore, 1985; Goggin et al, 1990; Sabatier and Jenkins-Smith, 1999; Suggett, 2011).

Another distinct body of literature is dedicated to the topics of identity, agency and rationale of policy makers. A research into policy networks submits that reforms are

taking place by a cluster, or a network, or a complex of both leaders and employees of organizations. They are "connected to each other by resource dependencies and distinguished from other clusters by breaks in the structure of resource dependencies" (Rhodes and Marsh, 1992:182). Actors are motivated to negotiate meaning, construct identities and attain scarce resources – by promoting specific policies (Dowding, 1995; Thatcher, 1998; John, 2003).

A derivative of these ideas is the multi-level governance theory of Hooghe and Marks (2001; 2003). The two thinkers maintain that actors involved in reforms are associated with different jurisdictions and institutions. These institutions determine their motivations and influence their – biased – preferences with regards to policy outcomes.

More on actors' incentives and impetuses, the suite of rational choice theories famously postulates that policy makers act in a rational, calculated, economical, unyielding manner, based on rigid preferences, with fully disclosed information on policy options, their probability of existences, and their costs and benefits, available at all times. Individual actors will act consistently to reach a collective political result, not necessarily optimal (Bardach, 1977; Hall and Taylor, 1996). The theory, however, met with resistance and was profoundly criticized, in both economic and in public policy literatures for a limited ability to reflect, or predict, actual events and actor conducts (Green and Shapiro, 1993; O'Toole, 1995; Foley, 2003; Fernandez-Huerta, 2008).

While the questions of "where", "by whom" and "why" a policy change is introduced and implemented are well-treated in public policy research, the question of "when" a policy change transpires is less clear. The punctuated equilibrium model is one attempt to attend to the matter. The theory suggests that actors, or policy entrepreneurs, make two strategic choices with regards to the presentation of a policy.

First, they pick a venue: an institutional location where decisions are made relating to a certain social or economic or political subject, and a specific population can be mobilized in accordance (Baumgartner and Jones, 1991). When a venue changes, the framing of a policy changes too, to match its new environment.

Second, actors choose the policy rhetoric: the phrasing of the political or social challenge, its symbolic meaning, the analysis of its causes, and finally, a proposed

solution. The same policy initiative can, and will, be presented both in a negative (i.e. a discourse of alarmism and hyperboles) and a positive (i.e. a discourse of opportunities) vernacular, before different audiences, at different platforms, at different occasions (Baumgartner and Jones, 1991).

One more tenet of the punctuated equilibrium theory is that once a policy initiative receives attention it shall spread quickly and become irreversible (Baumgartner and Jones, 1991). This, of course, is difficult to observe. How much attention is 'enough attention' remains unaddressed.

Overall, the issue of timing is hard to pin down. As noted by Cerna (2013:4), "methodologically, it is often difficult to determine the points in time when (policy) change occurs, or the make-up of (policy) coalitions and (policy) networks".

Ideas from other disciplines: the multi-level perspective for public policy analysis

Although it originated in a domain external to political sciences and evolved largely uninformed by public policy literature (see: Analytical Component, *Chapter 1. Sustainability transitions and other development approaches* and *Chapter 2. The multi-level perspective*), the multi-level perspective was examined here as a theory of policy change – the Policy Portfolio considered whether or not the MLP model could offer a valid explanation of the phenomenon of policy transformation.

The multi-level perspective is a Sustainability Transitions model and as such, it aims to explain changes of socio-technical systems, sectors or industries, from one stable state into another.

The multi-level perspective is a hierarchical model constructed of three intertwined levels: the macro-level, referred to as the "socio-technical landscape", the meso-level, referred to as the "socio-technical regime" or the "patchwork of socio-technical regimes", and the micro-level – where "socio-technical niches" evolve.

A transition, as described by the multi-level perspective occurs *at* the meso-level, *at* the socio-technical regime. In other words, the phenomenon of 'transition' in 'sustainability transitions' refers to a change *of* the regime: the socio-technical sector or the industry.

Furthermore, a transition entails three processes at the three levels: first, niche-innovations – a constellation of scientific and technological research, development and demonstration ventures, and the actors driving these "radical innovations" – build up internal momentum. Then, changes at the landscape level create pressure on the socio-technical regime. Finally, destabilization of the regime creates windows of opportunity for niche-innovations to replace it (see: Analytical Component, *Chapter 2. The multi-level perspective*).

According to the literature (Kemp et al., 1998; Schot and Geels, 2008), transitions transpire in a bottom-up, niche-driven dynamics when niche-actors at the micro-level direct precise research, development and demonstration activities to garner initial capital, build networks, improve their technical platforms and organizational operations, deploy and commercialize alternative socio-technical system design and thereafter command greater resources.

At first inspection, the multi-level perspective has some attractive properties that may be deemed it appropriate for gauging the nature of policy changes and explaining their mechanisms and actor interactions. It incorporates strands of thought from each of the elementary approaches to policy change – emphasizing bottom-up change dynamics while opening a space for top-down pressures – as well as ideas which appear to underpin the more sophisticated policy change frameworks – primarily the hierarchical structure of the multi-level governance theory, the windows of change underpinning the punctuated equilibrium theory, and the dialectic relations between actors at different levels of policy processes that are implied by Sabatier and Jenkins-Smith's Joint Framework and by Baumgartner and Jones's punctuated equilibrium framework.

However, a closer investigation of the multi-level perspective – which lies at the foci of the Analysis Component – reveals its many misfits to serve as an analytical instrument of public policy, let alone for the particular exercise of explaining policy changes.

First and foremost, its ontology – the system of concepts and categories in the area of socio-technical systems (e.g. levels of analysis, units of analysis, modes and mechanisms of interaction) – fails to overlap with the properties of concepts and categories in the area public policy.

The interpretation of "regimes" and "niches", however pluralistic, remains too rigid to define actors and networks of policy. The concept of a "niche", for instance, does not reflect a social movement (if anything, social movements are considered landscape phenomena, originating "above the regime").

Alternatively put, the definition of the theoretical structures and units of analysis in the MLP prevents a very liberal understanding of regimes and niches which could then be applied for actors and networks of policy design.

Furthermore, and perhaps equally critical, the multi-level perspective ignores agency, neglects the role of state institutions and underemphasizes policies and politics in processes of change (see elaboration in Analytical Component, *Chapter 3. Critique*).

Under these conditions, we must not treat the theory as an epistemic authority on matters of public policy, civil society dynamics, policy advocacy coalitions, policy changes and policy reforms – that this Policy Portfolio analyzes.

In other words, how can the multi-level perspective capture the phenomenon of policy change if it disregards agency and politics? We should therefore refrain from imposing the transitions model on processes it never intended to explain.

Lastly, the transition literature is myopic in its characterization of change drivers, which tend to focus on the technical-technological aspects of systems, as is portrayed in Kemp et al. (1998), Geels (2004), Geels (2005a), Geels (2005b) and Schot and Geels (2008), among others.

The policy processes that is described in this segment of the thesis – the development of well-being indicators as a policy program – is a not so much a socio-technical transition, rather it is of an incremental procedure. Evidently, it may not be a transition at all (see *Summary: You Say You Want an Evolution?*).

As the Analytical Component demonstrated, the multi-level perspective is an idea that at its best is tangential to processes of societal change, and ought to be refined. These critical caveats prevent the multi-level perspective from lending useful insights to this investigation carried out in this Policy Portfolio.

Towards a comprehensive theory of policy change

Considering the succinct review of diverse ideas, each examines a particular element of policy change; actors, identities, agencies and rationales, this repost attempts to assume a question of a higher-order. Synthesizing and applying the information in literature, it asks what can be said of the *general nature* of policy change? – a change affected, but not predetermined, by the 'where', the 'whom' and the 'when' of policy-making.

Regardless of agents and timing and venues and image of policy making, and levels of hierarchy, is policy change linear or circular? Is it revolutionary or evolutionary? Is it punctuated? Does it exhibit any patterns at all? Can we make a stride towards a comprehensive theory of policy change?

This paper argues it does. Within a vast landscape of political science literature, several theories cropped up and garnered attention, approvals and occasionally critiques, from scholars. This critical analysis report engages with four of these theories, which, drawing on the personal experience of the author, are estimated to be most valid to describe both the general nature of policy change, and by means of deduction, particular processes of policy making.

Four subsequent frameworks are reviewed: gradualism, advocacy coalition framework, policy learning and policy diffusion.

4. *Gradualism*

The thought of policy making as a gradual process, was suggested by Charles Lindblom at 1959. He presented his theory of evolutionary policy making in the 1959 article "The Science Of 'Muddling Through'" and in his subsequent 1979 paper "Still Muddling, Not yet through". Both papers drew on his notes as a political scientist, studying behaviors of policy reformers and officials in the field of welfare policy, trying to impose some rigor on intuitions about politics and people in government.

Policy reforms, he detected, if at all successful, were the outcome of small, incremental changes over time. Even in areas of vast complexities, requiring meticulous strategic planning and careful execution, policy makers employ a gradual, simplistic, short-sighted approach. Instead of a top-down, or a bottom-up approach, or rational choice models, or bounded rationality policy making frameworks, incrementalism hypothesized that policy makers, at whatever level of the organization, do not occupy themselves with strategic planning. Rather, they navigate, instinctively, capriciously, indiscriminately, between immediate problems as they appear (Lindblom, 1959; 1979; Lindblom and Dahl , 1976).

Time is neither wasted on strategy nor on strategic implementation. A "fire-fighting" attitude by which policy makers muddle through urgent policy matters is the common exercise. The result is a sub-optimal, undesirable method of allocating attention and public resources to solve social problems.

In this view, incrementalism theory and "The Science of Muddling Through" can be interpreted as a warning cry for policy makers. Muddling through policy making meant that "means and ends are not distinct, means-ends analysis is limited, (policy) analysis is drastically limited, important possible outcomes are neglected, important alternative potential policies are neglected, important affected values are neglected, and... (the process) eliminates reliance on theory" (Lindblom, 1959:81).

Furthermore, once practitioners lead an incremental policy-making style it is difficult to present them with incentives to alter their demeanors and re-consider a methodical, logical, process.

They are shackled by their past experiences and knowledge. They also have many outstanding issues to attend to. Many fires to extinguish. Lindblom adds, "the administrator often feels that the outside expert or academic problem-solver is

sometimes not helpful... (the muddling through idea) explains why an administrator often feels more confident when 'flying by the seat of his pants' than when following the advice of theorists. Theorists often ask the administrator to go the long way round to the solution of his problems, in effect ask him to follow the best canons of the scientific method, when the administrator (thinks) that the best available theory will work less well than... incremental (process). It would be foolish to push this explanation too far, for sometimes practical decision-makers are pursuing neither a theoretical approach nor successive comparisons, nor any other systematic method" (Lindblom, 1959:87).

If the nature of policy change is gradual, lengthy, based on previous practice, un-methodical and adaptive – Lindblom grants that the approach allows flexibility – then it is consequently susceptible to disruptions, open to shocks, driven by practical considerations, mediated by pragmatic brokers and suffering from feedback effects and delays.

An interminable, convoluted, incremental process invites these sorts of phenomena. Yet, the muddling through theory merely hints to their existence. While the question on the merits of this approach to policy making rises at the end of Lindblom's work, it remains little discussed.¹¹⁴

From this stem a need to complement gradualism with additional ideas on the general nature of policy change. Ideas which elaborate on how networks, actors and programs evolve in a "muddling through" policy environment. Three such frameworks are presented henceforth.

¹¹⁴ In his later work Lindblom ties incrementalism with a "democratic incapacity to act with vigour" (Lindblom, 1979:522) and he associates assertive and resolute policy making with authoritarian regimes, providing an inkling of criticism on gradualism, but also offsetting it with examples. "One last question about incremental politics: Is it true... that democracies are for the most part committed to change by no more than incremental moves while authoritarian governments can move with bigger steps?", He then answers. "It seems clear that authoritarian systems themselves ordinarily move by increments. On the other hand, authoritarian systems are at least occasionally capable – apparently more often than in democratic systems – of such non-incremental change as the abrupt collectivization of agriculture in the Soviet Union and the Great Leap Forward and the Cultural Revolution in China (as well as the Holocaust and the recent destruction of Cambodia's cities and much of its population)" (Lindblom, 1979:521-525). So, if incrementalism prevents genocides but inhibits accelerated social progress, is it necessarily undesirable? Lindblom circumvents the question. As this paper studies policy changes in democratic settings, these comparisons lie outside its scope. It should be noted, though, that even with this comparison, Lindblom remains critical of incrementalism.

5. *Advocacy coalition framework*

Advocacy Coalition Framework (ACF) describes policy changes as an outcome of continuous, circular, cause-and-effect interactions between actors, ideas, interests, and scarce resources.

First, policy actors cluster into policy networks, with their peers, around certain causes, interests, or beliefs: a low accessibility to healthcare services, poor education, or high housing prices, for instance, which should be rectified.

These policy networks are called coalitions. Networks, or coalitions, cluster into larger policy sub-systems. Inside the policy sub-system coalitions endeavor to advocate for their opinions. Coalitions and individual policy actors exchange ideas of reforms and learn from one-another of policy options (Sabatier, 1988; Sabatier and Jenkins-Smith, 1991).

Sabatier states that policy actors arrive from a wide array of institutions, public and private, serving in various positions, and together, they outline the principles, the expectations and the strategies of the coalition. They will also coordinate its activities (Sabatier, 1988).

Coalitions are assisted by pragmatic policy-brokers to mediate between narrow-interest tactics, and to avoid acute conflicts (Sabatier, 1988). When successful, coalitions affect policy makers to initiate policy programs which, in turn, transform an even-larger, external, socioeconomic system. At that point, resources will be re-allocated.

The huddling of actors into coalitions, and coalitions into sub-systems, is dynamic. Policy actors – a category not limited to government officials, as mentioned above – change coalitions in response to external disruptions and to re-distribution of assets, to advocate for different causes over time. They learn, and adapt (Sabatier, 1988; Sabatier and Jenkins-Smith, 1993).

If no overarching farsighted strategy is put in place, and if the policy sub-system refuses to prioritize values, interests and resources in a coherent, comprehensive and consistent manner, new socioeconomic constraints will surface, new coalitions will form, and new decisions will set new programs with new policy impacts.

Occasionally, this happens at the expense of older policy installments before they have met their targets (Sabatier, 1988; Sabatier and Jenkins-Smith, 1993).

In other words, when actors learn of their changing environment, coalitions shift and policy may halt. The process of policy change is frail. Intermittencies in public policy is one feature of ACF.

Learning, as a facilitator and a mechanism of policy change in advocacy coalitions, is another important tenet of the ACF (John, 2003; Sabatier, 2005). But two supplementary policy change theories provide a more complete explanation of the notion of "learning" in policy making than that described by ACF.

6. Policy learning

When policy coalitions alter their causes, their views or their interests; when they modify their strategies or activities, it is through the mechanism of learning. Learning allows policy actors to become aware both to socioeconomic constraints and to policy programs elaborated by other coalitions (Sabatier, 1988).

The literature on policy learning is broad and refers to various "learning modes", including, but not limited to, political learning (Hecklo, 1974), lesson drawing (Rose, 1991), social learning (Hall, 1993) and policy-oriented learning (Sabatier and Jenkins-Smith, 1993).

Bennett and Howlett (1992) point to the fact that each learning theory recognizes different procedures for acquiring knowledge, different learning-subjects, different learning networks, and different cause-and-effect dynamics between policy actors, policy coalitions, policy formation and policy reforms, across different social domains.

Supporting this argument, Cerna (2013:7) notes that in policy-oriented learning, for example, "the agent of learning is the policy network (the coalition), while learning is less about organizations than about ideas and values. In addition, learning is considered a process by which networks learn from past experiences, and thus is mostly about techniques and methods in order to improve policy".

Significantly, Cerna observes that policy learning is a central idea in the field of policy making: "it highlights that countries, regions and systems can change policies by learning from others and hence shifting their beliefs" (2013:7). Learning by degrees of imitation, or in a sociology jargon – institutional isomorphism¹¹⁵ – drives policy making across networks, coalitions and sectors. Bennett and Howlett (1992) acknowledge that too. Policy actors, they claim, can glean knowledge of structure of other policy organizations. They can learn of developments in discrete policy areas. Or they can learn from specific policy programs and initiatives.

¹¹⁵ According to DiMaggio and Powell, isomorphism refers to similarity of organizations in motivations, structures, strategies, processes and functions (see: DiMaggio P. and Powell, 1983, *The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality*, *American Sociological Review*, 48(2), 147–160.). The literature recognizes four types of isomorphism and one in particular is relevant to policy learning: imitative isomorphism. Imitative isomorphism is a process in which models, frameworks and organizational structures viewed as successful are copied.

Yet, the question on how learning, and what type of learning, influence on policy design and implementation is unresolved in the policy learning literature (Cerna, 2013). The operationalization and measurement of the notion of learning – the acquisition mechanisms of knowledge and skills through teaching, reflection, mimicry or practice – find an answer in an adjacent, complimentary, theoretical framework.

7. *Policy diffusion*

It is helpful to think of policy diffusion theory as an extension of policy learning theory. It accepts all the general premises of policy learning, regarding the spread of policy initiatives, administrative arrangements, and specialized institutions from one government to another (Dolowitz and Marsh, 1996; Shipan and Volden, 2008), and elaborates on the specifics of learning in the policy-making environment.

The framework of policy diffusion lists four mechanisms of the dissemination of knowledge. First, policy actors and coalitions learn by reflecting on policy initiatives in other governments and adopting the successful ones, sometimes with mild adjustments to local context. States, in this mechanism, are perceived as "laboratories of democracy" (Shipan and Volden, 2008:841, drawing on Brandeis, 1932).

Second, policy makers learn by noticing changes in the market system and analyzing their respective economic outcomes. This mechanism of learning is called economic competition, and it argues that when policy makers witness positive economic spillovers across industries, sectors and jurisdiction, they are likely to change their own strategic calculus and implement the reforms of other governments (Shipan and Volden, 2008). This type of diffusion deals primarily with economic reforms.

Imitation is a third, prevalent, vehicle of policy learning. Policy actors, policy activists, analysts, scholars and officials, embrace the social causes and motivations of others and copy their strategies and actions (Shipan and Volden, 2008).

Unlike the former voluntary learning and imitating methods, Shipan and Volden (2008) mention a fourth one – coercion. When governments are bound by legal and supranational obligations; trade agreements, legal conventions or membership in international institutions (the OECD, the United Nations), they can be pressed by other governments to adopt a certain policy, or shelve another. Shipan and Volden (2008:843) stress that "different conditions of each mechanism across countries, systems and cities exist".

8. A need for empirical evidence

Reviewing these four frameworks of policy change, Cerna (2013:16-17) indicated several things. "Lessons from literature", he notes, "suggest that theories became more sophisticated over the years, and have built upon earlier ones... sometimes, scholars are creating new theories or renaming old ones, instead of building upon and ameliorating existing theories". He moves to explain why some ideas should be weighed together. "Researchers (are) trying to come with more theories of policy change, (but) it might not be desirable to create (them). Therefore, it seems reasonable to mix and match convincing elements of the theories, depending on the policy area and context" (ibid).

Following his suggestion, this critical analysis considers the central tenets in all four theories described above, and employs this catalogue for the analysis of a case study.

In this vein, it appears that policy change is an incremental process, gradual and protracted. It is led by shifting coalitions of heterogeneous policy actors – activists, bureaucrats, elected politicians. These coalitions, or networks, are affected by- and influence on- larger socioeconomic conditions. These are circular relations. Actors and networks learn of socioeconomic constraints and, if successful, change the allocation of resources in response. A new equilibrium (dynamic equilibrium) will give rise to other actors, clustering into vying coalitions, advocating for an alternative distribution of organizational or social resources. In all cases, the initiation of policy change will be facilitated by policy learning mechanisms. Policy actors will observe one-another, imitate each other's organizational structure and procedures and programs, and participate in a wider diffusion of policy-related knowledge to affect other policy actors, in other social domains and across borders. Policy processes will be exposed to many disruptions, and therefore, be exposed to halts.

This is the theoretical outcome of a melding of these four frameworks together.

But to what extent do these ideas reflect the true nature of policy processes, from initiation, through design and to implementation? – there is a recognized need to answer this question.

Indeed, many scholars in the field underscored a need to provide theories with empirical observations. A meta-analysis of theories and topics in policy change,

conducted by the Organization for Economic Co-operation and Development, maintained that literature in the field "remains mostly theoretical and would benefit from additional empirical research" (OECD, 2013:3).

9. *Learning from case studies*

This paper asks what can be learnt from a particular policy process on the general nature of policy change? The question relies on the implicit assumption that in the field of public administration, case studies can be used in inductive reasoning.

To answer the question, the critical analysis applies the concepts of gradualism, advocacy coalition framework, policy learning and policy diffusion, to analyze a process of governmental reform.

Using a case study to conduct empirical research is a long standing methodological approach for the appraisal of complex systems transitions – such as national policy reforms (Bolton and Hannon, 2016). It is also an advantageous one.

Case studies are designed to answer "'how' or 'why' questions" (Yin, 2009:2), and they are especially valuable when the focus of the study is on "a contemporary phenomenon within a real-life context" (ibid). This paper adheres to this principle. Furthermore, as a methodological approach, case studies have a longstanding tradition as means of developing rigorous theories, and as means of establishing or nullifying them (Flyvbjerg, 2006).

In terms of data, this study draws mainly on the personal accounts of a civil servant and former civic activist – the author of this study – between 2011 and 2018.

The case study method is not without limitations. Although conclusions that will eventually be presented on the general nature of policy change attempt to be applicable to various policy areas, in various countries, the findings of this paper are specific to the Israeli case. Therefore, they may be difficult to generalize. Given these considerations, it is best to describe this critical analysis as an exploratory endeavor; an effort which aspires to investigate policy processes and policy changes in the area of systems of national wellbeing indicators.

10. The case of developing a system of national wellbeing indicators

The case study analysis featured in the report begins with a descriptive account of the 2011 Israeli Social Justice Protests, also referred to as the *Housing Protest*, the *Tents Protest*, the *Cost of Living Protest*, the *Middle-Class Protest* and the *Social Protest*. It is considered the original catalyst of the development of the system of national wellbeing indicators, and its most important cornerstone.

That series of events lasted between 14 July 2011 and 29 October 2011 and swept through all major cities in Israel, bringing with it a torrent of campaigners and demonstrators, in the hundreds of thousands, coming from all socioeconomic strata, ages and religions. Activists rallied against a swell in the cost of living, a shortage in housing and a systemic weakening of public services including health, education and transportation.

They demanded to alleviate the hardships of the middle and lower classes, to topple down a capitalist government and to reform a dysfunctional neo-liberal social order, all at once. A cocktail of causes, motivations, and tactics – sit-ins, demonstration camps occupations and civil disobedience – alongside extremes such as self-immolations, made up Israel's largest-ever public discontent enterprise, aimed to restructure the political economy of classes, resource distribution and access to opportunities.

From a policy learning and policy diffusion perspectives, the movement imitated the structure and strategies of the global Occupy Movement ("we are the 99 percent"). It was also viewed as a local derivative of a regional *Arab Spring*, or *Arab Uprising*. Social media, in this respect, served as the platform which enabled the spread of ideas.

Socially – a defining moment, publicly – a spectacle, from a political viewpoint – the social justice movement has resulted in several institutional responses of which a successful outcome is difficult to define. Seven years on, housing prices refuse to dwindle, inequality in educational and occupational opportunities lingers, transportation bottlenecks continue to despair commuters at ever greater rates.

The *Trajtenberg Committee* appointed by the government in 2011 to confer and advise on solutions to Israel's socioeconomic adversities, was dismantled soon after

it submitted its recommendations, with no implementation taskforce established to guarantee execution. Instead of pushing the Committee's propositions through the cabinet unscathed, a tactic of gradual implementation was eventually assumed: each proposition was deliberated in separate, and a great deal of proposals was sidestepped.

It was left for observers to infer that changes in policy making processes, irrespective of the warmest of society-wide endorsements, are exposed to delays, disruptions, patronage and hijacking. They are incremental, gradual and swept with hesitations. A myriad of actors, stakeholders and coalitions, holding a myriad of perspectives, promoting many competing values and beliefs, interrupted the policy formulation and implementation effort.

But some recommendations were eventually picked-up by the government in 2012. A larger civic plea for comprehensive wellbeing reforms developed into narrower policy initiatives and programs. How this came to be also testifies to the nature of policy change and is reviewed in further details in the first Part of this report.

The need to complement the system of national accounts and economic performance measures with a set of wellbeing indicators was mentioned in the *Trajtenberg Committee Report* and in other policy documents. This is the policy process at the heart of this paper, and it occupies most of it.

The development of a system of national wellbeing indicators was a four-year task, operating between 2012 and 2016. It intended to place the two notions of "wellbeing" and "sustainable wellbeing" at the heart of the national statistical agenda.

Balancing the system of national accounts with other social and environmental metrics – health, education, employment, work-life balance, safety, environmental quality, subjective wellbeing – should help the government foster better, more inclusive and farseeing development strategies.

The policy initiative was catalyzed and galvanized by Israel's social justice protests and bolstered by the *Trajtenberg Committee*. The effort was administered at the Prime Minister's Office, benefited from a collaboration with the Organization for Economic Cooperation and Development (OECD), and contributed-to by several hundred government officials, academic scholars and statisticians. The system of indicators was ratified in two government resolutions, covered in national media and

presented abroad, in the United Nations, the European Union, the OECD, and the governments of Germany and Finland.

As a case study, the policy process offers a sufficiently extended, sufficiently significant, sufficiently complex undertaking to infer from on the nature of policy change; in terms of time, resources, attention and stakeholders' involvement.

This report contains a thorough account of the evolution of the system of national wellbeing indicators – as of 2018 in its fourth revised edition – against a backdrop of the social protests, its subsequent conceptualization in the Ministry of Environment, its transferal to the National Economic Council at the Prime Minister's Office, its development, its results and impacts, and its lacunae and shortcomings.

11. The role of the author in the complete policy process

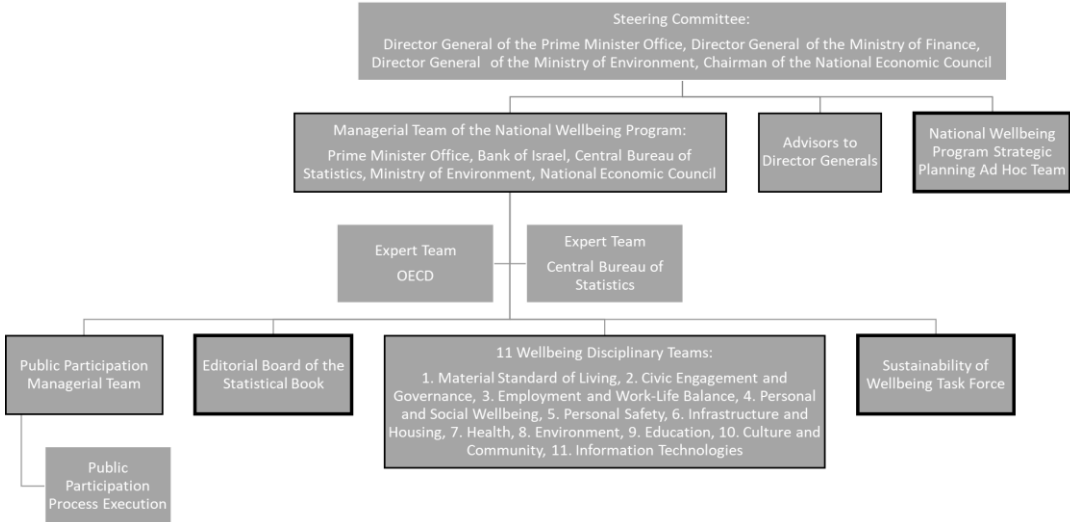
This paper is based on the written descriptions of past events and the work of the author, together with a few policy documents. The critical analysis report should therefore be read as a primary source: a sum of records and reflections, critiques and actions with regards to the policy process delineated above.

Accepting the premise that it is possible to learn from a particular policy process on the general nature of policy change, the author makes an empirical generalization from his own ten-year experience working in government, politics, strategic consulting and research.

12. Developing a system of national wellbeing indicators: organizational structure and the role of the author

The structure of Israel’s national program to develop indicators of wellbeing, resilience, and sustainability. Otherwise known as, the System of National Wellbeing Indicators. A thick border indicates forums or groups of which the author was the leading member, a thin border indicates forums or groups of which the author was a member.

Organizational structure of the Policy Program and the role of the author.



Part I Implosion

Implosion: An instance of something collapsing violently inwards;

A sudden failure or collapse of an organization or system

- Oxford Dictionaries

13. *Sweat and sorority in Rothschild Boulevard*

Two hundred and twenty-two years after the French Revolution, to the day, Rothschild Boulevard in Tel Aviv – a symbol of urban affluence – witnessed the rise of the Israeli social justice movement. At the beginning, in just a few illegal tents, pitched next to Habima Square, home to Habima Theatre – the national theatre of Israel, where the cost of a ticket is too expensive for most.

A new age-cohort of self-organized civil activists, took their dissatisfaction with public services, in education, in health, in housing, to the streets. Not before long it had become a movement in the hundreds of thousands challenging realities as prosaic as a price of a cottage cheese to circumstances as intricate as the power structure in society. 14 July 2011 has gone down in Israeli history as a watershed moment: a turning point at which a frustrated middle class mustered together to petition for an alternative re-distribution of national resources.

The rise of the social justice movement, a coalition of policy actors in the civil society and in academia, took politicians and civil servants by surprise. Long engulfed by security threats, the summer of 2011 has been a peaceful one; bearing in mind the 2006 *Israel–Hezbollah War*, the 2006 *Operation Summer Rains*, retaliating the kidnapping of Corporal Gilad Shalit by Hamas, and 2008's *Operation Cast Lead*, aimed to stop armaments smuggling into the Gaza strip and Palestinian rocket fire into Israel (Yonah and Spivak, 2012).

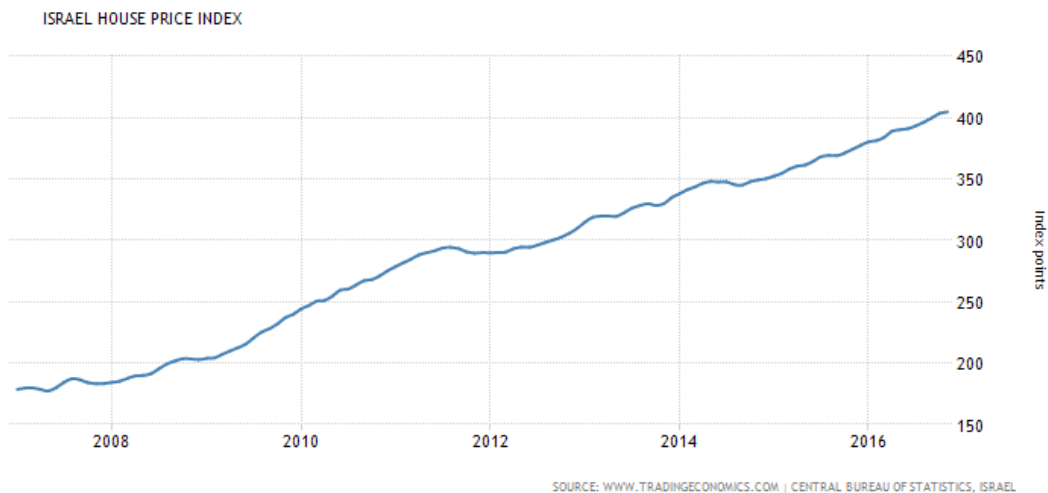
Economically, in the aftershock of the global financial meltdown, Israel remained relatively uninfluenced by the collapse of the subprime mortgage market. It has also remained comparatively unaffected by the Eurozone debt crisis. "A villa in the jungle", as commonly referred to by local politicians, Israel survived both financial mayhems, security threats and the 2011 tumbling down of Hosni Mubarak's Egypt. At a first glance, the social justice movement awakened at a least likely of times.

A closer look, however, tells a different story. The attention of the local leadership was primed by international affairs; terrorism and geopolitical threats. Officials and elected politicians ignored an internal social rupture, while at the same time, Israelis grew critical of a profound systemic failure in the provision of public services and government spending, inflicting arduous burdens on their lives.

A wide swathe of the Israeli population: secular Jews, Arab-Israelis, Haredi Jews and agnostics, questioned the logic of a social structure which benefited the wealthy at the expense of all others. They focused on the rise in the cost of living and the extent to which it was an outcome of a misguided policy making.

Since 2007, Israel experienced a steady upsurge in the price of housing. Until 2005, the government was heavily involved in the regulation of the housing sector, keeping housing costs to a decade-long low. From 2005 to 2011 things changed drastically. Apartment rental prices increased 34% on average, and 49% in the greater Tel Aviv area. According to estimations of the Ministry of Housing and Construction in 2010, 129 average monthly salaries were required for the purchase of an apartment, much costlier than in OECD countries (see figure below).

Israel House Price Index (Central Bureau of Statistics and Trading Economics, 2017).



The unaffordability of housing and housing services, coupled with a poor quality of public services, in some instances sheer retrogression, in health, education, transportation and welfare amenities, further fueled a disillusioned, disgruntled public (see figure below).

Government Spending to GDP (Central Bureau of Statistics and Trading Economics, 2017).



As information spread about the causes of the movement, the advocacy coalition grew. Disenchanted young mothers, for instance, learnt that the prices of basic foodstuff, among other necessities, suffered inflation (see figure below) and that they are compelled to participate in the workforce to earn their households a second income.

Since the consumer price index outstripped the growth in wages (see figure below), this participation rewarded their households with insignificant economic benefits. Many households were trapped in abject poverty.

Israel Consumer Price Index (Central Bureau of Statistics and Trading Economics, 2017).



Israel Food Prices Inflation (Central Bureau of Statistics and Trading Economics, 2017).



Millennials from all strata of society were of the impression the state does not apply itself to cater for their needs; vocational as well as material. Some have opted to leave the country igniting a discussion on the drain of brains and talent and skills.

Fundamental to all of these sentiments was an idea of a governmental cop out, if not total betrayal. Complete segments of the Israeli society held a neo-liberal-oriented administration responsible for eroding the traditional Zionist egalitarian socioeconomic narrative. An alternative set of beliefs and expectations emerged among the members of the advocacy coalition – the heart of the social justice movement.

The social contract in light of which the state of Israel was constituted gave prominence to solidarity and hope, to sweat and self-sufficiency. An unwritten charter featuring a flat, classless, ideal society. The Kibbutz – a collective agricultural community, not the city, was the socio-economic backbone of a fledgling country. Nonetheless, in the turn of the millennium it appeared that privatization, crony-capitalism, monopolistic enterprises, and urban agglomerations tainted that social contract to disuse.

Corruption, not mission, infested many public agencies and political offices. In 2004, late Prime Minister Ariel Sharon was allegedly involved in criminal financial misconduct. In 2009 Avraham Hirschson, then Minister of Finance, was indicted and later convicted of breach of trust, theft, forgery of corporate documents and money laundering. In 2010 Moshe Katsav, the eighth President was convicted of rape and obstruction of justice. In 2009, Prime Minister Ehud Olmert resigned from office to face trial, and then imprisonment for breach of trust and bribery.

In a display of particular satire, Tzachi Hanegbi, a former Minister of Justice was convicted of perjury and moral turpitude in 2010 (as of 2017 he is Minister in the Prime Minister's Office, in charge of National Security and Foreign Affairs).

Israelis were promised the marvels of a free and just market but wake up into a universe where 19 families control the economy, tycoons are convicted in securities frauds, and a chairperson of the principal national bank is sentenced to prison due to counts of fraud, receipt of property through subterfuge and breaches of banking governance standards.

Israelis heard of prosperity mostly in media. In 2011, GDP stood at 261 billion dollars, an increase of some 30 billion USD from 2010 (see figure below). According to aggregate statistics, Israelis were also considerably well-off from previous years, with GDP per capita rise, from 30,600 US dollars in 2010, to 31,600 US dollars in 2011. They heard of the "startup nation" miracle: a country of genius and progress.

Yet, less than 10% of the population was employed in the high-tech sector. They heard, and read, of an ideal society. But they experienced something utterly dissimilar to that narrative.

Israel GDP (Central Bureau of Statistics and Trading Economics, 2017).



Against this social order, plutocratic, discriminatory, ironic and alienating to the point of dissent, a handful of youngsters learnt of the socioeconomic constrains, formed an advocacy coalition and took initiative to change the allocation of resources in response.

14. *From false consciousness to the thoroughfares*

If some policy ideas are like infectious diseases, then 25-year-old Israeli Daphne Leef was the causative agent of the social justice "epidemic". The daughter of a composer, Jerusalem born and bred, after high school Leef moved to Tel Aviv to study for an undergraduate and to become a video editor. In June 2011, she received a note from her landlord to vacate the apartment she had rented for three years, for the purpose of renovations. Searching for several weeks for an alternative housing solution near her workplace, she realized rental prices in Tel Aviv had doubled since she moved in to the city.

A crestfallen millennial, and a seasoned activist – she refused to serve in the Israeli Defence Forces and had edited videos for political non-governmental organizations instead – in July 2011, Leef opened a Facebook page asking people to protest for affordable housing. Some ten individuals responded and attended a preliminary meeting. They discussed politics and inequality and mused over the *Arab Spring* and the *Indignant Citizens Movements* in Greece and Spain.

Eventually, it was decided to pitch five tents in Habima Square in Tel Aviv, adjacent to Habima National Theatre of Israel, and across Rothschild Boulevard, one of the most expensive streets in the country also known for its lavish lofts and millionaires' penthouses.

On 14 July, five tents were pitched as planned, hoping to echo American Hooverville shantytowns erected on the lawn of Central Park, New York City, during the Great Depression. Millennials have no means to pay for rent, the Facebook page stated, and as soon as July 15, hundreds of demonstrators joined the movement, setting some 50 additional tents in the sunny, humid, boulevard. The following day, July 16, the advocacy coalition gained considerable momentum. With the help of some mediating individuals – acting as policy brokers – Itzik Shmuli, then leader of the National Union of Israeli Students, today member of the Knesset for the Zionist Union – joined Leef in the leadership of the movement. Subsequently, the National Union of Israeli Students, a body of 300,000 students in over 60 universities and colleges, sided with the cause. Although the cause already began to blur. Leef had her own agenda. Shmuli had his. Some tensions also surfaced between the two and a third leader of the movement, Stav Shaffir – then, a spokeswoman of the movement, today a Knesset member.

These splinters, however, did not undermine the effort. On July 23, tens of thousands of demonstrators blocked the streets of Tel Aviv city in the social justice movement's first rally and mass-march.

Other policy actors and activist groups associated with the protests. On 28 July 2011, a "baby carriage march" was held in which scores of Israeli parents demonstrated against the mounting costs of raising children in the country, increasing day care expenditures and rising nursery schools' fees.

Mass rallies became a weekly practice as the movement expanded to cover other domains of life and areas of hardships. Over 100,000 people rallied on July 30. More than 300,000 demonstrators rallied on August 6. The 'March of the Million Citizens', shutting down many streets and city centres, was held on September 3. At the same time, activists took over abandoned buildings and some were arrested during September. In due course, rallies subsided and protests waned. On October 3, the original tents at Habima Square were dismantled. Some attempts were made to resuscitate the movement in 2012, albeit with little public traction. Of a once-cohesive social justice movement, factions were formed to divide activists into competing varities. In June 2012, Leef was detained after a demonstration in Tel Aviv. 85 of her supporters were apprehended the following day in acts of vandalism, shattering glass windows of banks.

The author of this report participated in all of these events, save for the latter sabotage. In 2008 he co-founded a non-governmental educational organization, based on the *Teach First UK* and *Education First US* models. The NGO, Education First Israel, was a training program for teachers' certification followed by a two-year teachers' placement in schools, collaborating with local municipalities and the private sector. In 2011, the NGO comprised of 50 individuals and program participants and was rooted in a network of other civil society organizations. It was affiliated with the social justice movement since July 2011, and its founders were strategically positioned to observe the inner circle of the movement's leaders: the discourses, the agendas, the formation of tactics and the heated debates. The author of this report was also a newspaper columnist since 2010. He belonged to several networks of social activists in Israel and abroad and noted the diffusion of policy ideas and initiatives between coalitions and countries.

15. Muddling through the protests

No one conviction, no single ambition, drove the social justice movement. In fact, a month prior to the 14 July 2011 housing prices protests, the cottage cheese boycott cropped up to demonstrate against an inflation in the prices of basic foods. This ephemeral movement developed in social media and resulted in a cut in the retail prices of cheese. The same individuals were involved in both protests – one about the price of cheese, another about the affordability of housing.

Young parents, as aforementioned, joined the campaign, and so did youth movements, high-school adolescences, student unions, labor unions, trade unions, teacher unions, religious and non-religious Jews, Arab-Christians, Muslims, right-wing and left-wing activists, each group with its own demands, each with its own needs and values, each with its own beliefs. As one of the signature posters of the social justice rallies declared: "the people want all sorts of things".

The inclusivity of the social justice movement, including folks and philosophies which might otherwise be excluded, ostracized or marginalized, was both the source of its allure as well as the cause of its ambivalence and inconsistencies in terms of policy influence. On the positive side, the inclusivity of the movement, its broad-minded, progressive culture, facilitated its ecstatic activism, vibrant social media, assemblies and round tables. Deliberative democracy was one of the main beliefs of the movement.

Shortly after they were fixed, tent complexes evolved into centers of dialogue between different social groups. This multiculturalism colored the social justice movement in bright, strong colors of liberalism. The movement's organizers sought the support and ideas of a wide array of citizens, from the vagabond and the dispossessed to the fortunate and the well-heeled, transcending old class suspicions. Tent conglomerates, in Tel Aviv, in Jerusalem, in Haifa, were hotspots (real hotspots: temperatures stood at 35 degrees centigrade) for open classes and seminars of civic education, taught by university professors free of charge, and for candid negotiations between citizens, activists and public officials, with an intent to form policy priorities and propose policy interventions.

Together, an alliance of many nested sets of communities, gatherings, consultation circles, tent compounds, academic experts in political science, public administration,

geography, planning, health, education, economics, law and welfare, wrote down recommendations for policy changes.

In the symposia and deliberations held for almost three months, Israel's fundamental socioeconomic constraints surfaced while practical options were described to tackle them. These proposals denounced a longstanding policy of neglect and asked to bring the outcomes of erroneous policy making to the limelight. In effect, assemblies were drafting a rectified social contract between citizens and the government. Policy actors petitioned to democratize socioeconomic policy making, by ways of public participation in decision making processes, and to run a series of structural reforms.

These were some of the noteworthy advantages of a panoptic, premeditated, purposeful, open discussion.

Various voices, however, engendered countless goals. With wide social representation, multi-foci debates and an all-embracing perspective as a guiding principle of the movement, clarity in aims and clarity in priorities were ignored. All-inclusiveness was more important than strategic focus and foresight.

A lack of leadership in the movement did not help: due to an affluent upbringing and her unwillingness to serve in the IDF, Leef was never accepted as a legitimate leader of the movement, rather more of a posterchild. An uninitiated public speaker, she never seized command over the many voices of the demonstrators. Other policy actors in the social justice coalition did not occupy themselves with strategic planning. Rather, they navigate, indiscriminately, between immediate problems as they appeared: how to order a sit-in, what messages to voice in a talk-show, who should represent the movement in a television interview, what resources should be raised, from whom, and to what end.

Time was on no occasion wasted on a strategic implementation of the movement's goals. A "fire-fighting" attitude was practiced by the top policy actors of the social justice movement by which they muddled through the different policy matters. In other words, all-inclusiveness in opinions and preferences in the immediate term came at the expense of cohesion and organization in the longer term.

Social justice is an area of vast complexities, requiring meticulous strategic planning and careful execution. Nonetheless, a joint fact-finding process, to address and resolve factual disputes between the movement's participants; to analyze the root-

causes of socioeconomic disparities; to integrate scholarship into strategy; and to invite public officials and decision-makers into conversations, was never implemented. Conflicts over histories, over narratives, over scientific facts, over truths and pseudo-truths were not thoroughly discussed, debated upon and researched.

Concrete, accurate, comprehensive and up-to-date information was missing in virtually all initial discussions in tent-cities. It was only in later roundtables, headed by academics, that a more informed discourse transpired. Yet, overall, a lack of a most-vital information, understandings and agreements on the real state of society, of the welfare conditions in different social strata, of the drivers of inequalities and of ill-judged policy interventions – beyond, indeed, the generally held opinion that "something is wrong" – obstructed the movement to materialize its aspired policy changes.

As conversations expanded and parted from specific objects, many questions remained unanswered. Of all social, cultural, religious and minority groups in the country, which suffers the most? Of all municipalities, Israeli and Arab, which deserves greater governmental support, greater spending? If resources should be re-allocated, then what would priorities be? How should the economic pie be divided? Which policies are futile and which are not? What agencies should be consolidated? Which policy processes be improved? An array of enquiries, integral for the devising of a national strategy, was never held properly to agree on trade-offs and compromises.

Eventually, a fragmented management and scrappy discussions, with a patchwork of recommendations for policy makers, scattered the mass of volunteers, and led to the ultimate die-off of the protests.

16. How the protests set the stage for policy changes

Despite a lack of clarity, the movement has accomplished several things. The exchange of ideas that was kindled in July 2011 disputed two common political-economic myths long held and stated by the political leadership, the mass media and considered as *vox populi*: a popular belief.

Per the first myth, since the 1980's the Israeli society, once cohesive and close-knit, partitioned into separate segments. By the 2000's it was a divided society, so went the popular myth. A political economy of special interest groups arose from the divide, each promoting its respective causes at the sacrifice of a greater public good. This social structure prevented individuals and organizations from finding a common civic identity.

This explained the premature depictions of the 2011 social justice movement as "an assembly of naïve millennials, lost and astray in an alienating Tel-Aviv, searching for affection and sushi" (a popular dish in the city). At the onset of the movement, a cacophony of similar responses rose quickly among Israelis. Some parliament members have gone as far as to label the movement a "pathetic immature undertaking of an affluent lost generation". They dismissed the bid as sentiment rather than substance.

Debunking this myth, this narrative, asked from the social justice movement to display a universal identity. It congregated volunteers and members of all interest groups, with a specific attention to weakened castes. Its bid to combat was anchored in societal-wide claims and needs transcending ethnicities, religions and genders. This, together, with the support of many media channels and a wide public endorsement, was one of the major feats of the protests.

The second myth has to deal with the ostensible perks, long held as absolute truisms, of a neoliberal free market. Once, an economy based on socialism, agriculture, textiles and international aid (between 1952 and 1966, West Germany paid Israel more than \$110 billion to compensate for Jewish property taken by the Nazis and for the Holocaust), the decades preceding the events of 2011, saw the rise to prominence of a neoliberal economic order, foreign to the Zionist ethos.

The rapid transition of the market germinated in the national Economic Stabilization Plan, championed by politicians in 1985. While its outcomes were controversial, the

reason for the 1985 Economic Stabilization Plan was mandatory and pressing. After the 1973 Yom Kippur War, economic stagflation – slow growth rates and high inflation rates – combined with a high government debt, paralyzed the economy.

In 1983, the *Bank Stock Crisis* erupted, and all major banks collapsed, leading to the nationalization of the sector. A year later, inflation rose at a staggering annual rate of 450%, estimated to reach 1,000% by 1986. The market was on the brinks of devastation.

Preventing a decadal crisis from becoming a historic catastrophe, the parliament together with the government and labor unions, initiated the economic stabilization plan. The policies the government laid out included a drastic curbing of public spending and government expenditures. Wage controls and price controls over basic commodities were introduced in the market. A devaluation of the Shekel (the currency) and a fixed foreign exchange rate were also pushed through regulations. Complementary structural reforms, with a heavy focus on privatization, were promoted by the treasury.

It was an efficient cocktail. Inflation rate was successfully brought to 20% in two years. In the 1990's the economy boomed and foreign direct investments flocked in. The government alleviated some fiscal and monetary controls while privatization persisted.

An acclaimed policy intervention in the short term, in the medium term the Economic Stabilization Plan has battered such social values as the equitable distribution of wealth or equality of opportunities. It has also unstitched the social safety net. A leaner, prudent, government was supplemented with a large private sector. A neoliberal free market expanded to provide social welfare and public services at cost, as the state receded to the wings.

Now, the individual was held accountable for his own wellbeing. Aggregate economic development was to be a result of reduced taxation of incomes and capital gains. Tax reductions would mean a more parsimonious, indifferent, government. In this neoliberal locus, the practice of outsourcing contract workers flourished. Public services were handed over to for-profit and non-for-profit outfits.

This second cost-effective neoliberal myth demanded a new breed of an Israeli citizen: ever-attentive, mindful, with an unbounded willpower and precise calculation ability. In short, a homo-economicus (an economic man) of a citizen.

He, or she, will rationally negotiate with service providers, save for a retirement pension and lead a perfectly calculated, penny-wise, life. His, or her, individual earning potential, not basic social rights, not an interventionist state, not a safety net, will determine his, or her, social bearing.

This second myth, bolstered by the government, consumed the higher ranks of the civil service before it osmosed into the larger public, taking both mass media and the popular perception. With neither critique nor disapproval, Israelis accepted a dwindled government. Dangerous rhetoric followed.

The public sector was scolded by elected politicians as incompetent, spendthrift and lethargic. Civil servants were harangued for corruption. The sector was compared to a fat person toted by a slimmer, more productive, private sector. Agencies and offices were stripped from budgets and positions, creating shortages in doctors, nurses, social workers, educators and psychotherapists (and environmental strategists). Occupational flexibility was the catchphrase of a new era.

Until the social protests flared up in July 2011, the public did not bristle over the cut in public housing projects, or the contraction in public health services, or the discount of social security allowances. Apathetic, or perhaps preoccupied, until 2011, Israelis did not contest the neoliberal myth. They tried to maneuver in an impossible reality: a free market in which freedom of choice and equal opportunities are predetermined at one's incipency. A liberal economy in which true economic liberalism is not the consequence of labor or grit, rather the outcome of inheritance and cronyism.

This narrative, of the perks and profits of a neoliberal marketplace, was a fictitious narrative. A mirage in the service of the wealthy, the few who seized privatized public assets and who were also able to afford private healthcare and a private pricey education. The social justice movement refuted it.

17. Policy learning and diffusion in the social justice movement

The immediate success of the social protest movement was the denunciation of these two longstanding myths. That of a fragmented civic identity, incapable of clustering and solidifying, and that of the unequivocal, unidimensional stream of social benefits oozing from a neoliberalism social order. A more profound claim then followed. Social movement campaigners moved to rally for a restitution of the social contract. Instead of civic interaction grounded on competition and individualism, mutual exploitation and gluttony, the protestors sought to demonstrate an alternative order of communal responsibility, egalitarianism and wellbeing. They cried to overpower myopic economic interests.

These were bold motifs, but hardly original. On the early evenings of the 18th and 19th of July 2011, a talk of imitation and replication, not invention, furnished the ragged tents and spontaneous discussion circles at the occupied boulevard of Tel Aviv. In its call for social justice, for solidarity, for comprehensive wellbeing, the social justice advocacy coalition was entirely imitative. Little novelty was also to be found in the means and methods, in online platforms, social networks, instant messaging and spur-of-the-moment gatherings that enabled a rapid circulation of information, agendas and objectives.

The values and practices of the Israeli social justice movement mimicked the values and practices of 2009 Iranian *Green Movement*, the 2010 *Arab Spring* demonstrations, riots and revolts, in Tunisian, Libya, Egypt, Yemen, Syria and Iraq, the *Indignados* of May–July 2011 Greek protests, the 2011 Spanish protests, the anti-austerity measures protests in Ireland and Portugal, and the pro-democracy protests in Russia; in Vladivostok mass protests of 2008-2010 and in Kaliningrad mass protests of 2009-2010.

The hallmarks of all of these movements, and those of the Israeli social justice movement, were alike. Glasius and Pleyers noted that "the post-2010 activisms, ranging from the Arab revolts to the Occupy movement, the anti-austerity protests in Europe, and the pro-democracy protests in Mexico, exhibit three kinds of commonalities. These are a common infrastructure of networks that facilitate rapid diffusion; a generational background shaped both by the precarity of paid work and by exposure to and participation in global information streams; and, most fundamentally, a shared articulation of demands and practices... (in addition) three

interconnected concepts have been at the core of both demands and the identity of these movements: democracy, social justice and dignity... post-2010 activism also share a mistrust of institutional politics and a determination not to become corrupted by power, which run deeper than in previous generations of activists and which pose an ongoing challenge to their involvement with formal politics" (2013:547).

In a comparable vein, Biekart and Fowler noticed that "the waves of civic activism unfolding since late 2010 at a global level are striking. In major cities of the world, streets and squares were filled with self-organized citizens demanding attention for social and political rights. The protest images were televised, downloaded and quickly distributed — seemingly diverse sites and types of activism being rapidly connected and speaking to each other. Does this scale and momentum signal a tipping point in a 'globalization of disaffection'? Are we witnessing the emergence of a new age-cohort of activists, similar to the '1968 generation'? ... contemporary activism constitute a distinct shift in the character of civic engagement as they surf on waves created by the increased availability and use of social media, and by a common set of rights-based demands" (2013:527).

For activists anywhere, 2010 was a glorious year. The width and breadth of global civic engagement provided them with peers-in-arm, and importantly, with a zeitgeist. For activists later in 2011, the bellwethers of Tunisia, Egypt, Ireland, Portugal and Russia, granted them with guidance and manuals.

The talk at the tenets of Rothschild Boulevard was of a similar tone, adopting similar strategies, employing similar tactics, to the movements of 2010. Newspapers concurred: Sobelman stated that "the Arab Spring spreads to the Jewish state" (2011), The Global Post wondered whether the "Arab Spring arrived in Israel?" (2011), and concluded it did.

Crony-capitalism, monopolistic enterprises, and urban agglomerations existed for several years before 2011, and neoliberalism, individualism and privatization were propagandized by politicians and the mass media for nearly three decades prior to the social justice movement, with scant public disapproval. Policy actors waited for a momentum (Biekart and Fowler's "globalization of disaffection") and only then, they began to imitate other movements' structures, procedures and programs.

18. *The policy process fizzles out*

By the end of 2011 the social justice movement had effectively expired. In his *Rothschild: The Story of a Protest Movement* (2012), Asher Schechter, then journalist at Ha'aretz, described the rise and fall of the movement, placing the main responsibility on its leaders; their lack of policy clarity, lack of strategy, lack of union, and a decisive refusal to engage with the government.

The movement's leaders did not stop quarreling with one another, Schechter indicated. Dafni Leef is quoted in the book to say of her colleague, now a member of the Knesset, to be one of the most disappointing persons she ever met. Another leader of the movement told Schechter, that they made empty promises which resulted in the movement's demise. Promises for new politics, for new policy making. Although the movement yielded a strong tailwind for policy change, it never harnessed it for a real reform.

In 2012, the coalition disbanded into rivalry camps, and the social struggle was grinded to a halt due to fatigue, and ego clashes. Later the year, Leef was arrested and the last encampments were dismantled.

Nonetheless, the social justice movement was able to generate two seminal documents, which took a step closer to policy change. The first was the *Trajtenberg Committee Report*. The second was Yonah and Spivak's *To Do Things Different: A Model for A Well-Ordered Society, The Social Protest 2011-2012* (2012).

The Trajtenberg Committee Report constituted the institutional response to the protests. The committee was appointed by Prime Minister Netanyahu to explore five socioeconomic areas: mechanisms for the mitigation of economic hardships, alternative taxation regimes, propositions for an increased access to social services, proposals to increasing competition in the market, and measures to reduce the prices of housing.

Published in September 2011, the committee repeated the fundamental flaws which set in motion the social justice movement in the first place. It employed a consumeristic, capitalistic, jargon. It penciled down recommendations under a materialistic, privately-led market ideology.

Furthermore, blatant inconsistencies existed between the introduction of the report, which assigned far-reaching social responsibilities to the government, and the practical recommendations of the report, which were very conservative. The preface of the report bombastically recognized the state's accountability for individuals' social rights, for the provision of a social safety net, and for curtailment of economic inequalities in society. Still, these remained declarative statements. The bulk of recommendations was derived from a neoliberal viewpoint.

The second seminal product of the movement was Yonah and Spivak's *To Do Things Different: A Model for A Well-Ordered Society, The Social Protest 2011-2012*. The book, 436 pages long, consolidates twelve reports issued by twelve teams of experts, academics mostly, but also activists, former civil servants and community leaders. Team members came forward to assist the social justice movement and provide it with theory and schemes and method. This cohort of 70 specialists was endeavoring in what can be described as a "sublimation of civic discontent"; from scattered, antagonistic, at times belligerent, impulses and urges into socially acceptable, practical and desirable behaviors and actions. From sit-ins and disobedience to offering policy reforms and conscripting a new social contract.

With a wider cadre, and a longer-term perspective, the Yonah and Spivak protocols served as panoramic alternative to the Trajtenberg Committee. The Trajtenberg Committee consisted of 14 members, nine of whom were government officials. The Yonah and Spivak collection consisted of over 70 members. The Trajtenberg report was published in 2011. The Yonah and Spivak was released at 2012, thus also summarizing the outcomes and prospects of the former. The Trajtenberg report is 251 pages, discussing 5 policy areas. Yonah and Spivak's is 436 pages, spread over 8 socioeconomic domains.

That said, it is a safe assumption to make that the issuing of two reports, without any legally binding status, without any budgets attached, was not the desired result of the social justice movement.

And yet, so it was in 2012, that any policy change was to stem out from these two documents. They were the only tangible, practical, policy prescriptions available, and therefore, the only social-justice-related vehicles for policy change.

How the government went about their implementation in the following year, provides another substantial piece of evidence on the incremental, protracted and dialectic nature of policy change.

In 2012, the policy process, in the form of the two reports, was trusted in the hands of a different policy coalition: the central government, and in the hands of different policy actors: government officials.

Since the movement was unable to topple it down, the government – a year back the subject of accusations and diatribes; held responsible for injustices, discriminations, and the unaffordability of life – was now in control to implement the social justice movement's causes and vision. Naturally, government members were reluctant to carry out drastic reforms, or any reforms at all. They entertained a different set of beliefs and, similarly to the leaders of the social justice movement, they too navigated, instinctively, capriciously, indiscriminately, between immediate problems as they appeared.

The social justice movement was no longer a problem. The two documents were grossly overlooked by most government members. In the months that followed, political-economic circumstances worsened. The general elections of 2013 brought little relief. A new Minister of Finance, Yair Lapid, understood very little about economics (he admitted it in interviews). His housing reforms received no traction.

The 2013-2014 governmental budget introduced various cutbacks of social welfare services. The Chief Economist of the Ministry of Finance resigned in 2014 over professional disputes with Lapid. A year and a half into his tenure, Lapid was sacked by Prime Minister Netanyahu. At the end of 2014, the Knesset was dissolved. In the interim, social and economic gaps widened. The prices of housing continued to rise. The market was still under the heel of crony-capitalism. On the face of it, the policy process that was catalysed in the housing protests came to a standstill.

19. Policy change nevertheless: incremental, unplanned steps towards reform

The punctuated nature of policy change gives a reason for the failure of the social justice movement to translate into drastic policy plans and programs. As the policy process dragged out, the movement lost momentum. Its leading policy actors scattered. The process was interrupted by competing, adverse policy coalitions, with vested interests in protecting the status quo.

But these very qualities of policy change – disrupted, unplanned and incremental; guided by policy actors who continue to learn, and to muster new coalitions – created the conditions for a revitalisation of some ideas proposed earlier by the movement. Ideas which were included in the two formative reports (Trajtenberg's and Yonah and Spivak's). Ideas which, eventually, resulted in a substantial policy reform: the development of a system of national wellbeing indicators, to improve socioeconomic and environmental decision-making in the government.

An unpredictable convergence, a fortuitous convergence, of four separate factors was at the bottom of this policy reform – in still another illustration of the attributes of policy change.

First, there was the formation of a coalition of policy actors which took shape in 2012 and 2013. These policy actors, all of whom government officials, most of them newly appointed, engaged in the social justice movement in 2011. A few as activists, others as NGO directors. By 2012, they held various positions in government: economists in the National Economic Council, policy planners and public participation specialists in the Prime Minister's Office, statisticians in the Central Bureau of Statistics, and strategists in the Ministry of Environmental Protection, Ministry of Finance and Ministry of Economy.

Most members of this evolving coalition were of the belief that the outbreak of the 2011 protests was a symptom of a profounder systematic policy failure.

The catalysts of the social justice protests were – so went on the root-cause analysis – enduring socioeconomic inequalities. The causes of socioeconomic disparities were unfair provision of public services, in housing, in education, in healthcare, in welfare. These, were the outcomes of ill-advised policy interventions, which were themselves a consequence of poor policy design and poor implementation of policy programs.

The root for ill-considered policy planning and execution was the availability and quality of relevant information about the state of affairs in society. Or, the lack thereof. This rationale rested on the assumption that policies which are not monitored, not measured, cannot be properly managed, and cannot be improved.

The policy actors, a group including the author of this analytical report, maintained that social progress cannot be sought after wisely, without a reliable, comprehensive and up-to-date system of indicators. Such a system will capture the various domains and aspects of wellbeing. In addition, it should pay attention to the drivers of wellbeing, or the "factors of production" of wellbeing, at all times.

In other words, when contemplating the social justice protests and their underlying motivations, the policy actors believed that poor information, or limited information, has driven poor policies, resulting in the poor social outcomes, and in civic discontent.

Contemporary statistical systems did not accommodate the needs of the population. Since the foundation of Israel, the traditional way to assess the state of wellbeing, welfare and prosperity of society was a fairly restricted set of economic metrics organized in the System of National Accounts (SNA), and in its headline indicator, the Gross Domestic Product (GDP). Although the System of National Accounts is an imperative tool that allows policy makers to evaluate and compare economies, and though the GDP is an ancillary statistical device used to determine national and international policies, the formulation of policies based on the SNA alone is inappropriate.

The prevailing system of aggregate economic performance indicators provides an incomplete picture of the national and social landscape. Particularly, the GDP does not indicate the distribution of resources and wealth among a country's residents, it does not reflect the total amount of resources at the disposal of the national government, and it does not represent all features and facets of life, such as social interactions and trust, volunteering, mental and physical health, levels of education, public safety, governance, or environmental quality. The GDP should not be used as an outcome indicator to direct and measure the efficacy of policy interventions.

These beliefs ushered the policy coalition during the development of the system of national wellbeing indicators.

But strong convictions of intermediate level government officials were seldom sufficient for policy change.

A second enabling factor was that this logic, these critical gaps and shortcomings in the SNA and the GDP, were recognized by the two documents ensuring the social justice protests.

To Do Things Different: A Model for A Well-Ordered Society, The Social Protest 2011-2012, mentions statistical information gaps, when discussing the topic of housing affordability in Israel, the prime concern of the social justice movement. "In housing economics, it is customary to define 'affordable housing' as an accommodation solution costing up to 30% of total disposable income of the household. If an expenditure is greater than 30% of disposable household income, it is usually defined as a housing distress. If the expenditure is higher than 50%, it is defined as an acute housing distress. The existing indices and statistics in Israel cannot provide accurate differential estimates of housing affordability by geographical location, rather solely at the national level and at the level of income deciles" (Yonah and Spivak, 2012:159). They then add, "It should be noted that in peripheral cities, where long commuting is compulsory, it is customary to add travel costs to the housing affordability index, as the former may reach up to 15% of households' income, however this cost is not measured (in Israel)" (Ibid, 160).

In page 254, in the sixth protocol on public health, the document recommends to develop policy mechanisms for reducing environmental hazards and promoting a healthy environment. "A change in environmental policy in Israel is vital... to prioritize public health considerations over corporate profitability... additional enforcement of polluting corporations is required... the regulator must review social and environmental statistics when developing economic policies... the current knowledge of environmental and health issues in Israel should be deepened... there is not enough information about the exposure to pollution in different parts of the country" (Ibid, 254).

In the realm of welfare policies, the government is compelled to "draft a new poverty index to compile the various aspects of poverty. Many studies show that poverty measures limited to income or expenditures do not reflect the full complexity of the phenomenon" (Ibid, 284).

A diagnosis of a shortage of data for good policy-making was correspondingly discussed by the *Trajtenberg Committee Report*.

According to the committee, 10 strategic tenets should underpin Israel's socioeconomic policy making. The committee's third tenet calls attention to the inadequacies of using the GDP as outcome indicator of social policies. "Economic growth remains of paramount importance to cater for the needs of Israeli society. Nonetheless, growth rates are not the facade of everything important in society. Significant features of wellbeing are not represented in economic growth, such as wealth distribution, levels of inequality, public health, and environmental quality. Therefore, the scope of the parameters according to which economic performance is weighed should be broadened, and policies should be adjusted accordingly (Trajtenberg Committee Report, 2011:38).

These entries took a stride nearer at the principal cause of inadequate policy choices: information failures; imprecise, incomplete, or misinterpreted statistics, facts and figures. Together, these conclusions provided the policy coalition with theoretical and moral justifications to develop a system of wellbeing indicators and make it accessible for policy makers. They also linked the policy campaign to the social justice movement. Still, these reasonings did not weight enough to bring about change.

A third aiding factor testified both to the influence policy learning has on policy processes and to the frail nature of policy changes – susceptible to unpredicted disruptions.

In 2012, the Israeli Minister of Environmental Protection, then a confidant of the Prime Minister, coincidentally rendezvous with Professor Jean-Paul Fitoussi, a French economist of global reputation and Jewish descent, in an OECD gala. Fitoussi is a co-author of *Mismeasuring Our Lives: Why GDP Doesn't Add Up*, and a co-author of the hugely influential *Report by the Commission on the Measurement of Economic Performance and Social Progress* (described in followings).

In their impromptu meeting, in Rue André Pascal, Paris, the Minister learnt of the fallacies of the GDP and of statistical substitutes to the SNA. He learnt of the Stieglitz-Sen-Fitoussi commission, and report, and of the policy programs introduced by Fitoussi, pursued by other European states and elaborated by the OECD. When all was said, the Minister came to the agreement to promote a similar policy program

in Israel. He assigned his own ministry, the Ministry of Environmental Protection, to actualize the program. This encounter and these policy programs are described in the following Part.

The crucial meeting of The Minister and Fitoussi could not have occurred if Israel did not join the OECD two years before. This consists of the fourth and decisive factor contributing to the development of wellbeing indicators in Israel, and to the continuation of the policy process.

In 2007, the OECD Council at Ministerial level adopted a resolution to open discussions with Israel for its membership of the Organization. Later the year, the OECD Council approved the roadmap for the accession of Israel to the OECD Convention (OECD, 2007). For two years, 18 discrete OECD committees evaluated Israel's stance on the OECD's legal instruments and the degree of coherence of Israeli socioeconomic policies with those of the organization. In January 2010, Israel signed an Agreement on the Privileges and Immunities of the Organization (OECD, 2010), and in May 2010 the OECD dispensed an invitation to Israel to become a member. A month later, Israel signed an Accession Agreement in Paris (OECD, 2010). In signing the OECD Convention, Israel guaranteed its commitment to realizing the Organization's central objectives.

In 2012, selected directorates in the OECD strengthened their ties with public agencies in Israel, including the Ministry of Environmental Protection.

At the same time, the OECD Statistics Directorate spearheaded the organization's *Better Life Initiative: Measuring Wellbeing and Progress*. Built on Stiglitz-Sen-Fitoussi work, the OECD shifted its focus from measuring the functioning of the economic system to study and analyze people's wellbeing and societal progress; their "diverse experiences and living conditions" through several strands of research (OECD, 2017).

It was an ongoing work, derived from the OECD's agenda to develop "new and improved statistical measures, aimed at filling the gap between standard macroeconomic statistics that sometimes are used as proxies of people's welfare and indicators that have a more direct bearing on people's life" (OECD, 2017). Throughout the years, the organization published guidelines and frameworks to support member-states interested in developing better wellbeing metrics to improve national decision-making processes.

So, when The Minister returned to Israel with an ambitious plan to develop a national system of wellbeing indicators he already had an eager policy coalition of civil servants, the organizational support of the OECD, the tailwind of the social justice movement, two policy documents recommending an institutional, relatively frugal, reform – but one central to the work of the government, and a nearness to the Prime Minister.

The convergence of these four factors provided the means necessary for the continuity of the policy process. This process is the subject of the second Part of this work.

Part II A Pendulum of Policy Making: The Policy Process, Detailed

What fascinated me was the story... not my personal story, a 26-year-old who sees no future in this country. No. What enticed me to get involved was our collective story: a troubled generation, a lost generation, struggling between loans and mortgages... burdened by debt... a generation that instead of celebrating its prime of vitality and creativity, hopes for shorter lives, awaiting its freelance salary... the story of a generation whose present-day is lousy and whose horizon is bleak that he has little choice but to take it to the streets and try to create a better world.

- Anonymous, 2011 (in Schechter, 2012).

I promised and I kept my promise.

- Binyamin Netanyahu, Prime Minister, October 2011 (Mako News, 2011).

His promise was never kept, never fulfilled... The Trajtenberg Committee's main recommendations were omitted in government decisions.

- Yonah and Spivak, 2012.

450,000 people went out into the streets to march and nothing had happened... The recommendations of the Trajtenberg Committee withered.

- Yonah, June 2012 (in Kashti, 2012).

The making of policies is like the making of sausages—the less you know about the process the more you respect the result.

- Attributed to Otto von Bismarck (in Supreme Court of Florida, 1958).

20. Drawing conclusions about the nature of policy change: a matter of vantage point

When viewing processes of policy making from different distances, policy analysts will arrive at contrasting conclusions regarding the general nature of policy change. A higher altitude gives an impression of frictionless landscape, allowing procedures and policy coalitions to flow, effortlessly. A lower altitude observation reveals a pebbly, rock-strewn terrain, resistant to all changes other than incremental. This is no paradox, rather a matter of perspective. Israel's national program to develop wellbeing indicators is a good case in point.¹¹⁶

At a distance, the policy analyst would study the process and reach the assumption that the increases in costs of housing, foodstuff, education, health, and social services in Israel led to a social protest, and that the government responded hasty by establishing a team of experts, and published reports of their recommendations. Some of those recommendations were rendered into resolutions. Specialized task forces of officials were appointed to address the lack of data and metrics regarding the state of wellbeing in Israel and the factors that contribute to it. A system of metrics was thereupon formed, presented to the government, approved, and issued in the first government sponsored National Wellbeing Indicators Book. Additional work groups were budgeted in the Central Bureau of Statistics for continued development.

A coherent chronicle would then appear. The social movement of 2011 led to its desired results. In 2012, government members seemed attentive to the people, and sought to integrate public representatives in the process of national decision making. In 2013 and 2014, the government gave the impression it is interested in adopting progressive work practices from the world of public policy, in order to create a robust "dashboard" of indices. In 2015 it assembled it. In 2016 the dashboard was

¹¹⁶ The term wellbeing refers to aspects of human life that contribute to one's welfare, sense of fulfilment and satisfaction. The notion of wellbeing provides a framework to observe, conceptualize and reflect on the needs of the individual. High levels of wellbeing allow individuals to strive to achieve their goals within the social structure in which they function. A comprehensive appreciation of one's wellbeing, and drawing comparisons between the wellbeing of different social groups, requires a multidimensional measurement that examines a variety of areas of life: health, education, employment, work-life-balance, material standard of living, community life, environmental quality, culture, personal security, civic involvement and governance, among other factors. These aspects of human life involve objective and subjective measurements. Maintaining the wellbeing over time is one of the main goals of sustainable development policies, and a role of the government.

published, to display environmental, social and economic factors, and better direct government strategy and budgeting. In 2017, a second, amended dashboard was published. In 2018, a third. The process of reshaping government policy-making with better information, for better interventions, for better lives, was successful, uncontested, and direct.

However, granted with a closer vantage point, from within the national program to develop wellbeing indicators, the policy analyst will witness the true nature of policy change: fluid, fragile, clouded by uncertainty, dialectic, and always hanging in the balance. A human process, and thus subject to human imperfections; saturated with happenstance, impulses and power struggles, as well as imitations of similar organizations and the successful methods they initiated around the world. Often, no more than a reproduction of structures, contents and models.

This is one claim this Part makes. Public policy can be seen in many ways. The time frame from which it is viewed, and the proximity to the process and policy coalitions involved, have a profound influence on how the analyst understands the circumstances, draws conclusions, and shapes theories on the nature of policy change.

Accordingly, the most prominent deficiency in the conclusiveness of some suggested theories is that they rest on the fulcrum on which they are leveraged. Suppositions of scholars depend to a large degree on whether their perspective is purely academic – drawn from secondary studies – or based on triangulation of literature analyses and interviews with policy actors, or anchored in personal experiences of intimate involvement in processes of national decision-making, policy design, development and execution.

In this regard, there are several theories of the nature of policy change worth considering. The introduction to this critical analysis report expanded on these approaches. This second Part aims to demonstrate through an analysis of the second part of the process of developing wellbeing indicators in Israel that several, selected, methods succeed in expressing the nature of policy processes in the most reliable manner.

The other claim that arises from this examination is that there is a particular importance of policy analyses of this kind, written by those who work in the field on a daily basis, and are therefore well-grounded in practice.

This Part, like the first Part, like the critical analysis report in its entirety, is based on the personal experience of the author. It is written in a reflective style that weaves descriptions of policy processes with the author's personal annotations on the dynamics of processes.

21. The many beginnings of Israel's national program to develop wellbeing indicators

Where does a policy change begin, with whom, and at what time? Can clear demarcations be marked? These are also a matter of approach and perspective.

To the casual eye, it would appear that the development of wellbeing indicators in Israel originated with Government Resolution number 5255 at December 2nd, 2012. The resolution was accepted by Israeli government members, a coalition of neoliberal, capitalist disposition, headed by Prime Minister Binyamin Netanyahu, and was presented as an innovative, pressing policy response to the social justice protests of 2011.

Its novelty and implications were advocated so persuasively, that Ha'aretz, the longest running newspaper currently still in print in Israel, asked whether the Israeli government gone mad? – "The policy cynics", they wrote, "who grumbled that the social justice protest ended with no more than a feeble response, are now invited to reconsider" (Arlosoroff, 2013).

"For the second time in two weeks we report a groundbreaking policy reform initiated by the Israeli government, in direct response to the social protests. Prior to the protests, it would have been unthinkable to imagine the Israeli government to precede other countries, and be so creative and innovative with its policy programs... The policy choice of the Israeli government to leap-forward in its decision-making processes is pioneering and radical. Instead of narrow-minded economic policies, focusing on growth, future policy programs will be determined on the basis of various quality-of-life measures" (Ibid).

Government Resolution No. 5255 of the Government of December 2, 2012, the 32nd Government, Benjamin Netanyahu,

Subject of the Decision: Wellbeing Indices Subject of Resolution: Wellbeing Indices

Pursuant to government resolution No. 5208 of November 4, 2012, on the institutionalization and improvement of the government's ability to formulate and manage a socio-economic strategy (hereinafter: the government decision), and to determine indicators of wellbeing, sustainability and national resilience, which will provide data for decision-makers and the general public in Israel to formulate a comprehensive, up-to-date, and reliable socio-economic and environmental picture to serve as a basis for policy decisions made by the government or other decision makers, which will enable an examination of the results of this policy, and which will assist the public to evaluate progress and changes in wellbeing. Therefore, the government has decided:

1. To instruct the Director General of the Ministry of Environmental Protection, in consultation with the Director-General of the Prime Minister's Office, the Director-General of the Ministry of Finance, the Head of the National Economic Council in the Prime Minister's Office, and the Government Statistician, to prepare a recommendation for an outline for determining wellbeing indicators, (Hereinafter: the "Wellbeing Indicators Outline"), including:

- a. Recommendations for the methodology for selecting wellbeing indicators that reflect wellbeing, sustainability and resilience in Israel (Hereinafter: "Wellbeing Indicators");
- b. Recommendations on key areas of life under which wellbeing indices will be grouped (hereinafter: "Domains");
- c. Recommendations regarding public participation in the process of determining wellbeing indices;
- d. Recommendation regarding the work teams and their composition as detailed in section 4 (a) below;
- e. Comparative examination of the process of determining indices and the indices themselves in developed countries;

f. Review of the indices currently measured in the State of Israel.

2. The wellbeing guidelines will be submitted by the Ministry of Environmental Protection to the Director General of the Prime Minister's Office, the Director General of the Ministry of Finance and the Head of the National Economic Council by June 1, 2013.

3. To establish a steering committee headed by the Director-General of the Prime Minister's Office, the Director-General of the Ministry of Finance, the Head of the National Economic Council in the Prime Minister's Office and the Director-General of the Ministry of Environmental Protection. The professional basis for the work of the steering committee will be the outline of wellbeing indicators. The first meeting of the Steering Committee will take place within 30 days from the date of submission of the outline of wellbeing indices, as stated in Section 1. The members of the Steering Committee shall be:

Deputy Governor of the Bank of Israel; Director-General of the Ministry of Social Affairs and Social Services; Director-General of the Ministry of Industry, Trade and Labor; Director-General of the Ministry of Education; Director General of the Ministry of Health; Director General of the Ministry of Public Security; Director General of the Ministry of Transport, National Infrastructure and Road Safety; Director-General of the Ministry of Construction and Housing; Director-General of the Ministry of Culture and Sport; Director General of the Ministry of Science and Technology; Director General of the Ministry of Agriculture and Rural Development; Director General of the National Insurance Institute; Head of the Budget Division of the Ministry of Finance; Head of Economics and State Revenue at the Ministry of Finance; and the Government Statistician.

4. To impose on the Steering Committee the following: to determine the final list of the wellbeing domains; to appoint Disciplinary Teams for each of the domains. Each of the Disciplinary Teams will formulate recommendations for indices in that field. The recommendations of the work teams will be submitted to the Steering Committee for approval within 100 days of the appointment of the Disciplinary Teams. The Disciplinary Teams shall include members of the relevant government ministries as well as representatives from the academia, the civil society or the private sector with relevant expertise, as necessary; To conduct professional collaboration and consultation with the senior professional forum for strategic planning established by

the Government's decision regarding the selection of subject areas and wellbeing measures; To conduct processes of collaboration and consultation with the public regarding areas and indices formulated by the Committee. The consultation process will include, among other things, consultation with the members of the Inter-ministerial Roundtable in the Prime Minister's Office, in accordance with Government Decision No. 3190 of February 24, 2008, and to use this table to expand the consultation with the public, as the need arises. The array of subject areas and indices must be submitted for the approval of the Ministerial Committee for Strategy, should it be established as recommended by the government decision, and for government approval.

5. To instruct the Government Statistician to submit to the Steering Committee, on a date to be determined by it, an estimated budget and timetable for the collection of data required to create knowledge bases for analyzing the indicators and creating a situation appraisal based on them, and for ongoing monitoring and updating of data; To determine the method for measuring and creating databases required for creation and periodic update of indices.

Further to Article 5, the National Economic Council is required to present to the Government from time to time the updated indices with an analysis of emerging trends. The Prime Minister advises including representatives of the private sector in the committee's deliberations.

However, the resolution was not the initiative of the Prime Minister, but of the Minister of Environmental Protection. He did not intend it as a direct response to the social justice protests. Rather, the protests cleared the way for The Minister to pass this resolution in the government.

Furthermore, as the first Part of this report showed, the development of Israel's system of national wellbeing indicators, a substantial policy reform, was possible due to a confluence of disconnected policy factors, coming into existence *before* Government Resolution number 5255. It was originated at different policy theaters, in Israel and abroad, promoted by various policy actors, clustering into coalitions, in and out-side of the central government, including the Minister, but many others as well. A reform which struggled through oppositions and change of personnel on the program's management team.

The Minister played an influential role. A lawyer by profession, he was a Member of Parliament from Netanyahu's Likud Party. In 2012, he served as Minister of Environmental Protection, and later moved on to become Minister of Homeland Security. He had previously been an advisor to Netanyahu, and was considered a trusted ally, which earned him positions as Minister of the Interior, Minister of Communications and Minister of Defense of the Home Front.

His popularity soared in his position as Minister of Environmental Protection, as part of the 32nd Government of Israel. In a four-year term, he fronted the establishment of a dedicated fund for repairing environmental damages to the Dead Sea, and a novel mechanism for the use of Israel's natural resources with rare economy.

He passed several noteworthy environmental protection laws in parliament, and an effective parliamentary campaign for coastal management in Israel. As Minister of Environmental Protection, he advanced recycling and waste separation policy programs, a new "Packaging Law", and sponsored a policy initiative for the clearing of the Western Galilee from asbestos. These garnered him considerable political capital towards the end of his term in office and the general elections of January 2013.

With his proximity to the Prime Minister, The Minister obtained a wide base of government support, allowing him to advance government resolutions – in natural resources management, in waste management, in public health, even if they were not in-line with Netanyahu's socioeconomic creed.

Such was the case with the policy choice to develop a system of national wellbeing indicators. Prime Minister Netanyahu, an ardent neoliberal and a proponent of privatization and the lean state, had often been quoted saying that only two important metrics exist for the appreciation of the efficacy of governance: GDP and GDP per capita. But an enthusiastic Minister tried to impress on Netanyahu the need to create an Israeli system of national wellbeing indicators to complement, not substitute, the system of national accounts. A local program, similar to that of the OECD.

In 2012, at the end of Netanyahu's term, although he later returned to serve as Prime Minister in the 33rd and 34th governments, The Minister succeeded in advocating his cause. His achievement was a consequence of political loyalty to the Prime Minister, not a result of ideological accord between the two concerning the value or usefulness of these measurements. The Prime Minister approved the policy program but

remained unconvinced, notwithstanding the social protests of the previous year, notwithstanding the weak response of the government to the protests, notwithstanding the failures of government policies.

The Minister's vision for a system of comprehensive wellbeing measures, although advertised as ground-breaking and radical, was neither original nor pioneering. He was a policy actor, a senior one indeed, who merely engaged in processes of policy learning and policy diffusion.

The idea for an inclusive system of socioeconomic and environmental indicators, to better guide policy making, was concocted on the wake of the financial crisis of 2008. French President, Nicholas Sarkozy, commissioned a research from his principal economic advisor, Professor Jean-Paul Fitoussi.

The severity of the global financial meltdown took many international policy actors by surprise. The social turmoil which followed exacerbated their discomfort. A liquidity crunch, economic recession and loss of financial assets fanned the flames of an already disenchanted class of a global citizenry, deprived and underprivileged. The concentration of wealth in the hands of few, in the United States and Europe, became a topic of frequent complaint.

Against this backdrop, Sarkozy's goal in commissioning Fitoussi was to provide himself – as President, with a clearer, broader and more accurate representation of socioeconomic development. This depiction was meant to help him make better decisions regarding the improvement of current and future living conditions for the French people.

Fitoussi, a world renowned macro-economist, turned to two of his colleagues, Professor Joseph Stiglitz and Professor Amartya Sen, both Nobel Prize winners in economics. Stiglitz was known, among other things, for his criticism of globalization and neoliberalism. Sen is considered the "Father of Welfare Economics".

With assistance of a team of scholars, they compiled the *Report on the Measurement of Economic Performance and Social Progress*, also referred to as *Stiglitz-Sen-Fitoussi Report*. The document, extensively covered over the course of this paper, evolved into a landmark in the field of wellbeing, progress and sustainability statistics.

Soon after its publication, Fitoussi advised the OECD on how to diffuse the findings of the *Stiglitz-Sen-Fitoussi Report* over the community of member-states of the organization. A new policy vehicle was designed.

With the support of OECD boss, Secretary-General Angel Gurría, the organization launched the "Better Life Initiative". He entrusted Martine Durand, Director of Statistics and Chief Statistician of the OECD, with the task of developing wellbeing, progress and sustainability indicators, to answer the questions of whether our lives are getting better? How can policies improve our lives? And, are we measuring the right things?

In a laborious statistical undertaking, the Better Life Initiative also sought to compare and contrast the wellbeing priorities of member-states, and to showcase these priorities in interactive statistical measures. This critical analysis report offers additional information about this policy program, in view of the close collaboration between the program's professional staff and the author of this paper, in developing Israel's system of national wellbeing indicators, in assembling the OECD's *Measuring and Assessing Wellbeing in Israel* (OECD, 2016), and in hosting Secretary-General Gurría over the course of his visit to Israel, for the publication of the latter.

The OECD Better Life Initiative was launched in 2011, advancing the diffusion of policy ideas. At the time, Israel was a neophyte member of the organization. The Israeli government explored several cooperative frameworks with the OECD, in a variety of policy areas. The Ministry of Environmental Protection was quick to recognize the inherent reputational benefits it can gain from working with the OECD. Both in terms of drawing on the organization's expertise as well as to leverage the collaboration to enlist necessary funding for environmental protection policy programs in Israel.

The OECD entertains progressive views regarding environmental administration, and the Ministry of Environmental Protection in Israel asked for its support, even if declarative, for internal political maneuvers for environmental causes.

Political delegations from the Ministry of Environmental Protection, including the Minister, Director General, Deputy Generals, and other civil servants, participated (and oftentimes participate) at OECD summits, workshops and conferences. The Minister, who was the first Minister of Environmental Protection at the time of Israel's

partnership with the OECD, would contribute to conventions and roundtable discussions for senior policy makers in the span of his tenure.

These became decisive factors in the development of Israel's national wellbeing indicators.

Less than two years after the launch of the Better Life Initiative, at the final year of The Minister's term, he travelled to participate in a summit and gala in Paris. The seating arrangement at the opening event, uncoordinated with The Minister's staff, placed him alongside a Jewish French professor, with a warm connection to Israel, a history of visits to the country and longstanding professional associations with Israeli scholars; former economic adviser of Sarkozy, and an expert in measuring wellbeing, Jean-Paul Fitoussi.

In the midst of their unintended, one-hour affair, The Minister went through a rapid indoctrination and instruction into the world of welfare economics and the fallacies of the GDP. He learnt of statistical alternatives to the SNA and how these should direct a fairer distribution of resources in society. He learnt of the Stiglitz-Sen-Fitoussi commission, of the document, and of the policy programs launched by Fitoussi, practiced by other European states – the UK, Italy, France – and expanded by the OECD.

Resolute and taught, The Minister decided to introduce a similar policy program in Israel. When The Minister returned to the county, he pitched a suite of documents to the government that would contract the Ministry of Environmental Protection, his ministry – not the more obvious policy theatres choices; the Prime Minister's Office, the Ministry of Finance, the National Economic Council, the Bank of Israel, or the Central Bureau of Statistics – to draft a strategy in which they would be the leading partner in a national, internal-departmental team for moving forward the subject. Netanyahu agreed to The Minister's proposal for personal reasons. Just a few short weeks before the government unraveled and general elections were held, the government passed Resolution 5255. Israel's national program to develop indicators of wellbeing, sustainability and national resilience (hereinafter: "the Policy Program", or "the Program"), was underway.

So far, a painless process, developing the Program will prove to be an incredibly jarring task. Gradual, protracted and polemical.

Resolution 5255 of December 2012 was the point at which the Program officially began. But the general elections of 2013 nearly cut it at its nascence. In 2014, the work teams that were formed would be dismantled and then reorganized. The recommendations that were made would be nonchalantly dismissed by indifferent temporal ministers. Public participation processes will run aground twice, in 2014 and 2015. The general elections of 2015 will interrupt the Program again, and will bring it to the edge of termination.

A lack of political support in the final year of statistical calculations and composition of the book, between 2015 and 2016, put the Program in jeopardy. The Program's Managerial Team was forced to work tacitly, undetectably, without attracting the notice of senior elected officials.

Once the statistical results and wellbeing trends were received in 2016, and a richer, clearer image of Israel's environmental, social and economic affairs came to light – reflecting blatant inequalities in society, particularly across ethnic and religious denominations – several ministerial spokesmen attempted to thwart any and all publications. The Program was compromised again.

The Ministry of Environmental Protection and the remaining staff from the National Economic Council (after the Chairman left his post) financed the printing of the National Wellbeing Indicators Book. They ordered the launch event at the Israeli Knesset just a week before the report was publicized.

The following chapters of this Part take a careful screening of the policy process, and of the policy actors and coalitions muddling through it. A process described in this report as a "pendulum of policy making"; swinging between opposing forces, between coalitions, and between ideas. A process fraught with inconsistencies and disruptions, subject to the capricious whims of politicians, to undue length of discussions (more than four years), and to an exchange of political administrations.

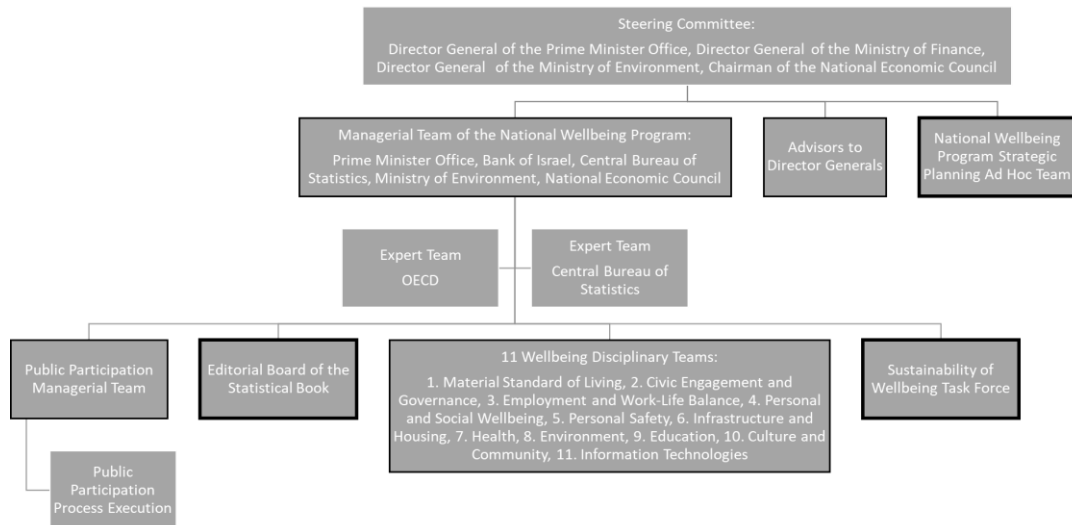
The examination begins with a portrayal of the organizational structure of the Program, followed with a description of the work process and of the advocacy endeavors of the Program team to convince sceptics and antagonists of the rationale for developing accurate wellbeing indexes in Israel.

22. Organizational structure and methodological principles

Upon the concession of government resolution 5255, the structure, workflow and framework of the process were determined. First, a Steering Committee was formed, led by Director General of the Prime Minister's Office, Director General of the Ministry of Finance, Director General of the Ministry of Environmental Protection and Chairman of the National Economic Council.

Each steering committee member had his or her expert advisor. The advisors formed an Advisors Forum. The author of this analytical report served as a part-time expert advisor to the Director General of the Ministry of Environmental Protection.

Organizational structure of the Program, and the role of the author; a thick outline indicates forums or groups of which the author was the leading member, a thin outline indicates forums or groups of which the author was a member (see Part 1).



Prior to Steering Committee's operations, the Director General of the Ministry of Environmental Protection was instructed to devise a strategy for the national wellbeing program.

The Director General appointed the author of this report to prepare a policy scheme, suggest structure, set timelines, offer policy justifications for the development of wellbeing indicators, establish social, economic, environmental and moral needs,

learn – and when appropriate – duplicate foreign structures, and set policy and statistical principles to guide the Program.

The document, entitled *Indicators for Wellbeing, Sustainability and Resilience*, was a joint publication of the Prime Minister's Office, the National Economic Council and the Ministry of Environmental Protection. This report, a policy primer for the entire wellbeing indicators enterprise, would become an early version of the introduction to the final statistical book. It was issued in 2013 and provided the wider wellbeing policy coalition with contextual information, rationale and explanations, benchmarks and propositions regarding the development of a system of wellbeing indicators.

Furthermore, it underlined 10 methodological principles for choosing indices in different wellbeing categories and domains. These principles, developed with the Central Bureau of Statistics, relied on the experience of other countries.

1. Individualism: indices should reflect the socioeconomic circumstances of individuals and households, and avoid – to the extent possible – aggregative indicators that express averages and medians.
2. International Comparison: indices should enable the comparison of Israeli households to international benchmarks and their position relative to developed countries, thus allowing gathered information to be analyzed within a variety of social and geographical contexts, to assist in interpretation, learning processes and decision making.
3. Policy Relevance: indices should support policy design processes and should enable practical, measurable action.
4. Measuring Outcomes: indices should reflect regulation and policy outcomes, instead of policy inputs or policy outputs. For instance, measuring the public's health, an outcome, is preferable to measuring public expenditure on health services – an input, or the number of surgical procedures – an output.
5. Availability of Information: to the degree possible, indices should be based on obtainable, ready data, or on data whose collection and processing do not involve high expenditures relative to the policy benefits they create.
6. Statistical Monotony: indices must be able to reflect changes whose meaning is clear and not subject to multiple interpretations. For each index, the direction and

quality of change must be defined and consistent (increasing or decreasing). It should give a clear answer of whether a rise in the index reflects an improvement in wellbeing.

7. Distribution: each indicator should allow a further examination of the dispersion of measurement results across different demographics. This level of granularity will offer further insight into the comparative importance of specific wellbeing areas to specific populations. For example, the elderly consumes health services at a higher level than other age groups do. Therefore, their wellbeing is likely to be linked to the availability of health-services, more so than other age groups.

8. Objective and Subjective Measurements: indicators should reflect the wellbeing of households and individuals both in quantitative, impersonal terms, as well as in terms of subjective perspectives, perceptions and preferences.

9. Impact on other Categories: indicators should assist in examining the reciprocal relationship and mutual influences between various categories and domains of measurement. For example, indicators ought to assist in appreciating the co-evolutionary relations between economic growth, productivity, carbon intensity, air pollution and public health. This will also assist in analyzing the second- and third-order effects, and thematic spillovers, of various policies.

10. Composite Indexes: subject to the discretion of Disciplinary Team members, consideration should be given to the development of composite indexes. Composite indexes, such as Human Development Index (HDI) and Human Poverty Index (HPI), or the GDP, can capture several wellbeing aspects in one figure.

Indicators for Wellbeing, Sustainability and Resilience, was a milestone for the Program. It argued that wellbeing metrics – the report highlighted a need for sustainability and resilience indicators too – can contribute to the government by helping to identify policy priorities, by making it possible to implement coordinated policies across departments and socioeconomic domains, and by increasing the legitimacy and public acceptance of these policies as directly grounded in people's preferences and priorities.

With a strategy at hand, the Steering Committee of the Program convened a Managerial Team of the National Wellbeing Program. It comprised of two representatives of the Prime Minister's Office, one representative of the Central Bank

of Israel, one representative of the Central Bureau of Statistics, two representatives of the Ministry of Environmental Protection and two representatives of the National Economic Council (the Managerial Team of the National Wellbeing Program is referred to throughout this work as "the Managerial Team"). The teams held regular weekly or biweekly work meetings starting in September 2013.

The author of this report was one of the two representatives of the Ministry of Environmental Protection.

It should be noted that the Program will outlive its policy coalition, and most – not all – of its members. Between 2012 and 2016, the Director General of the Prime Minister's Office will retire. The Director General of the Ministry of Finance will divorce himself from the ministry. The Director General of the Ministry of Environmental Protection will be sacked. The Chairman of the National Economic Council will hand in his resignation to the Prime Minister. Of the Managerial Team, one of the two representatives of the Prime Minister's Office will leave his job. One of the two representatives of the Ministry of Environmental Protection will take a leave of absence. One of the two representatives of the National Economic Council will retire from the civil service. These invited postponements and disruptions, and a loss of momentum. A lack of continuity was among the most complex administrative challenges of a changing Managerial Team.

Back in 2013, though, the organizational structure was still firm, and the Program productive. The Managerial Team was responsible for formulating a proposal to be submitted to the Steering Committee, which included a list of disciplinary team leaders for the wellbeing discrete domains. It was entrusted to suggest methods and mechanisms for linking wellbeing indicators to processes of socioeconomic policy design. It prepared an outline of the public participation process, and proposals for accessibility of information to the public and to the government.

In June 2013, the outline of the process was submitted to the Steering Committee. The outline was approved at a meeting of the Steering Committee in July 2013. Nine wellbeing domains of measurement were approved, including health, personal security, quality of employment, housing and infrastructure, civic involvement, personal and communal welfare, material standard of living, environment, and education and skills.

A remarkable amount of overlap existed between the choices of Israel and those of other countries vis-à-vis domains of measurement: the Managerial Team allocated time to reflect on similar policy programs in other governments, including their policy choices, structures and strategies, and then adopted the successful ones, with mild adjustments to the local Israeli context. Following the approval of the nine domains (two additional domains – Culture and Community, and Information Technologies – will be added in 2016), the Steering Committee appointed a team leader for each Wellbeing Disciplinary Team.

The team leader, a civil servant, chose members for the Disciplinary Team, inclusive of representatives of relevant government agencies, municipalities, civil society organizations, academic institutions and the private sector. Each Disciplinary Team formulated recommendations for indices according to their particular field of expertise and by imitating similar propositions for indicators made by other governments. The author of this report was a member in the Environment Team and the Personal Safety Team.

At the same time, the Managerial Team was required to conduct a consultation process with the general public. For this purpose, a dedicated Public Participation Managerial Team was assembled, comprising the author of this report, and a Public Participation Process Execution Team was appointed. The public participation process is described in the proceedings of the report.

The Program was supported by two designated, ad-hoc, Experts Teams. One, a team of statisticians delegated by the Central Bureau of Statistics. The other, a specialized team of policy-analysts from the OECD deputized by Martine Durand, Director of Statistics and Chief Statistician of the OECD, and head of the "Better Life Initiative", to support the Israeli process.

Finally, the Steering Committee had to attend to the matter of sustainable wellbeing, and probe into the drivers of progress: to investigate into the factors that can sustain the level of wellbeing in Israel over time. To this intent, the Steering Committee commissioned a policy report from the author of this paper. The *Report on the Measurement of Sustainability* was published in 2014. It is described in the third Part. Over the course of 2015, the Steering Committee submitted for government approval the array of indicators formulated over the course of three years.

23. Recognizing and categorizing indicators by the Disciplinary Teams

Members of the Disciplinary Teams labored to respond to two policy inquiries, delineated by the Managerial Team. First, teams had to explain why a certain aspect in the respected domain is important for the welfare of Israeli households. Second, members had to propose the most appropriate indicators that should be composed in any given area.

Each Disciplinary Team consisted of at least eight members, half of whom were government officials, while the other half were representatives of local authorities, labor or professional unions, civic organizations or associations, research centers or academic institutions. All Disciplinary Teams were accompanied by representatives of the Central Bureau of Statistics.

The task of the Disciplinary Teams was to recommend a list of 12 wellbeing indicators in each domain, and to rank them according to their comparative value and usefulness in the reflection of the domain. In accordance with instructions of the Central Bureau of Statistics and the Managerial Team, these indicators were to portray a most accurate snapshot of the state of wellbeing of households and individuals.

At the outset, the Disciplinary Teams divided their domains into sub-categories. This provided a higher degree of precision – crucial to identifying the factors affecting wellbeing. It also allowed the teams to consult with the public and experts before articulating a final list of indicators.

In parallel to consultation processes, the Central Bureau of Statistics mapped existing indicators across all domains, used by various countries around the world. Thereafter, the Bureau identified information gaps for adjusting these indices to the Israeli context.

In November 2013, Disciplinary Team Leaders convened for a learning session. They submitted a draft catalogue of indicators in sub-categories of each domain. They marked limitations and inconsistencies in available data, and the indicators employed by other countries. Following the presentations, team leaders discussed points and areas of overlap between sub-categories, such as employment and

education, academic training and vocational skills, environmental quality and public health, personal wellbeing and social welfare.

Each draft catalogue of indicators was submitted, in Hebrew and in English, for two rounds of review by peers: representatives of the Central Bureau of Statistics and policy analysts from the OECD. Experts of the Central Bureau of Statistics concentrated on issues of data availability, ability to perform international comparisons, statistical monotony, statistical sensitivity and a balance between objective and subjective metrics. They also considered the structural and organizational implications of developing new indicators that do not yet exist, as well as ideas for alternative metrics with available datasets as an interim solution until new metrics can be devised.

The OECD supported the Israeli Program at its inception, motivated and mentored the policy coalition at the heart of the Program – the Managerial Team – and aided the Disciplinary Teams with expert advice, for nearly four years. OECD policy analysts examined lists of indicators prepared by the Israeli teams, suggested methodological principles to weigh them, and where they found fit, they suggested alternative indices used by other countries. They also suggested additional areas of measurement, which had not been conveyed by the sub-categories defined by work teams.

By June 2014, the Managerial Team held a summit meeting in Jerusalem dedicated to deliberating a final list of indicators in each domain, against any professional reservations of the Central Bureau of Statistics and the OECD. The outcomes of the public participation process – described at length in the proceedings of this paper – were also presented and integrated into the Disciplinary Teams' recommendations.

Disciplinary Teams tabled nine lists, each enumerating twelve wellbeing indicators, and composite indicators, ranked in order of priority and policy relevance. They added a list of recommended metrics that require further elaboration.

In November 2014, the Steering Committee chose eight indicators for each of the nine domains of measurement, for a total of 72 of wellbeing indicators. The Steering Committee then presented the Central Bureau of Statistics with a scheme for the development of indicators that were not yet available, and proposed various platforms to make the information available to the public.

In 2015, the Steering Committee added a tenth wellbeing domain – Culture and Community – based on the public participation process, and took the ten lists to the government. The Prime Minister instructed the Steering Committee to add an eleventh domain, Information Technologies, without scrupulous deliberations nor professional consultation processes, and ratified the recommendations in government resolution number 2494, to which the author of this report contributed. The government passed it on April 19, 2015.

Government Resolution No. 2494 of the Government of April 19, 2015, The 33rd Government, Benjamin Netanyahu,

Subject of the Decision: Wellbeing, Sustainability and National Resilience Indicators

In the proceedings of Government Resolution no. 5255 of December 2, 2012, and of a comprehensive process of articulating wellbeing, sustainability and resilience indicators; with the contribution of 120 specialists, a public consultation process that encompassed over 2,000 partakers, and consultation by the Organization for Economic Co-operation and Development; and upon an examination and decision of the Steering Committee, established pursuant to Government Decision No. 5255 of December 2012 (hereinafter: the Steering Committee), the government has come to conclusion:

1. To adopt the decision of the Steering Committee concerning wellbeing, sustainability and resilience indicators in the following measurement areas: quality of employment; personal security; health; housing and infrastructure; education and skills; civil involvement and government; environment; personal and social welfare; material standards of living.

Recommended indicators are detailed at the annex to this resolution.

2. To mandate the Steering Committee to develop metrics for the measurement of two additional areas of Culture and Community, and Information Technologies, and to formulate a statistical recommendation for the Government Statistician to include these metrics in the system of national wellbeing indicators, as specified in Section 1.

3. To instruct the Government Statistician:

- a. To annually publish the system of national wellbeing indicators, and to complete any obligatory activities to make the information accessible to the public.
- b. To formulate a policy plan for the development of indicators in accordance with the recommendations of the Steering Committee, including:
 - i. Establishment of work groups to design new indicators. The work groups will include representatives from government agencies, the academia and any relevant organizations.
 - ii. Preparation of new surveys and propositions for modifications in existing surveys.
 - iii. Institutions of an ad-hoc team for devising methodology and for conducting a time-use survey and quality of employment survey.
4. To instruct the Public Council for Statistics to scrutinize the suggested system of national wellbeing indicators in terms of statistical monotony, sensitivity and specificity.
5. The Government notes that the Ministry of Environmental Protection, in collaboration and concord with additional, relevant organizations, will formulate indicators of sustainability and national resilience.
6. To allocate to the Central Bureau of Statistics an annual budget of NIS 7,084,000 (\$2 million) between 2016 and 2019 for the purpose of developing new wellbeing indicators.
7. As of 2020, an annual sum of NIS 350,000 (\$100,000) will be transferred from the Prime Minister's Office to the Central Bureau of Statistics to support the policy program. In addition, the Ministry of Finance will allocate NIS 430,000 (\$125,000) and 2 fixed-term appointments for the purpose of metrics analysis and publication.

Beyond the bounds of the Israeli policy process, remoted in time, and outside the policy coalitions, a policy analyst would observe the process today, study the government resolutions, read the policy documents, and suspect that the Program to improve government policy-making with better, more inclusive and reliable

information was not only successful but also incontestable and undisrupted. Perhaps, only periodically overdue by resignations of some staff members.

It will be an incorrect supposition. Several major challenges hindered the Program often. Some objections nearly derailed the entire campaign.

One such challenge, from the get-go, was to impress the rationale and need for the Program on policy makers, senior officials and elected politicians. Policy actors had to invest considerable resources in justifying the Program, regularly, repetitively, in various policy theaters in Israel. A review of these efforts and of the rationale for the Program – the topic of the next chapter – illustrates how the Program, and the beliefs of the Managerial Team, are closely linked to the social justice movement of 2011. It also exemplifies some repeating aspects of the nature of policy change. It offers additional, indispensable background for this analytical report.

A second challenge of the Program Managerial Team was one of balances. The Managerial Team had to facilitate a degree of choice for the Disciplinary Teams in the selection of indicators, while following the advice of the OECD, and maintaining the 10 methodological guiding principles described above. For this end, the Managerial and Disciplinary Teams leaned heavily on other similar policy programs from other countries. This choice is described henceforth, in a further demonstration of policy diffusion.

24. Championing the cause: advocating the rationale and social need for wellbeing indicators in Israel

When resolution 5255 was enacted in 2012, the foremost and immediate strain – an unforeseeable burden – was the need to continue to convince government offices and politicians of the rationale behind the Policy Program.

Notwithstanding the resolution, the mandate and the sway of the Managerial Team of the Program, regardless of extensive previous work on the subject, in Israel and abroad, in spite of similar developments that have been successful in other countries, and despite the tailwind of the social justice movement – government and administrative complacency still remained a major hurdle. Several stakeholders refrained from collaborating, while others stood by, delaying the execution.

The central policy coalition of the Program, the Managerial Team, responded with a series of public events across several dozen agencies and stakeholders. In presentations, the Managerial Team stated, plainly, that the multifaceted socioeconomic challenges facing the Israeli society, those that resulted in strife and rallies and self-mutilations, obligate the government to devise a comprehensive and up-to-date system of national wellbeing metrics. Government agencies should then employ the metrics to better decision-making process, redress budget allocations, assess policy tradeoffs, improve policy choices, and measure policy efficacy.

Accordingly, the primary purpose of the Program was to set correct standards by which a wide-ranging assessment of wellbeing can be made. The absence of this comprehensive assessment, so the policy actors claimed, has left the government to make ill-advised decisions, based on over-generalized, purely economic indicators, such as the GDP.

The GDP, which reflects the monetary value of all the products and services produce in a certain country, and the broader System of National Accounts are important tools for comparing one country's economy to another's, as a research tool, and as a basis for developing local and global fiscal policy.

Additionally, a clear correlation was found between the GDP and the general level of content among a country's citizens. In countries with a high GDP, citizens reported a higher level of satisfaction from life, as compared to countries with a lower GDP. The reason is that GDP is indicative of private consumption of goods and services, of a

state of material comfort, as well as of a greater pool of resources available to a government, which can be streamed towards the benefit of its citizens in investments and spending and so on.

For these reasons, it is commonly believed that economic growth, as reflected through the GDP, means improved wellbeing for people, and a general trend of improvement of states and societies.

Then again, this is not always the case. There are many areas in which the GDP fails to provide an accurate reflection of wellbeing, or the economic or the social health of a society. Economic growth should improve wellbeing, but a blind drive towards national economic growth without an inclusive vision of the social needs of individuals leads towards government interventions that are unfair, policy initiatives that are environmentally and economically unsustainable and, ultimately, damaging to wellbeing. Such policies can exacerbate social and ecological predicaments, such as income divide between classes, market failures, erosion or depletion of resources and environmental pollution.

The real socioeconomic price of these problems can offset, indeed, it often far exceeds, the seeming economic benefits expressed through the GDP alone. True, economic growth is a central means towards improved wellbeing, but it is only a means, not an end unto itself.

Furthermore, policies built solely around the GDP do not consider that a country's current prosperity might come at a high expense of the financial and natural resources it has available, or at the expense of future generations, or be subject to transient market conditions that make the economy far more unstable than it might appear. Therefore, an accurate assessment of a country's prosperity cannot be measured without taking into account the means by which the economy grows and the possible consequences of these means.

In addition, since the GDP is an aggregate measure, it does not reflect the division of wealth among a country's population. Also, since it is a fiscal measure, it does not take into account things that are valuable to a person's wellbeing but do not cost money, such as social connections, community work and volunteering, leisure time, recreational activities, and amenity values of landscapes; pleasurable and aesthetic coherence. Finally, since it is a snapshot of current economic growth, it

does not take into account the resilience of the economy, or its sustainability in the future.

This presentation was insufficient. Agencies and stakeholders remained sceptic, and reluctant to assist. In Israel the majority of government resolutions are rarely implemented (Ha'aretz, 2015), and the policy coalition of the Program refused to accept a similar fate for resolution 5255.

As stakeholders mulled over the necessity of the Program, meditated on the deficiencies of the SNA, a question arose among the Program's Managerial Team members whether or not the stakeholders' demands for a more elaborated presentation, explanations and analyses, were meant simply to interrupt the Program, as a kind of tactic of attrition. Or, if it was a legitimate demand of civil servants to justify the undertaking.

This question remained unresolved. In any case, the Managerial Team had to provide the Program's stakeholders with a profounder inspection of the fallacies involved in guiding public policy based on the SNA and GDP.

A new dedicated team, composed of the author of this analytical report and two senior statisticians of the Central Bureau of Statistics, was commissioned to write a report entitled *A Normative and Methodological Critique of Growth, Wellbeing and Sustainability Indexes*.

The report harked back to the origins of the SNA, and gave meticulous attention to all the shortcomings of the GDP. National accounting, and its flagship index the GDP, were first formed in the 1930s by Nobel Prize winner in economics, Simon Kuznets, who became known as "father of national accounting". Kuznets, the report continued, developed national accounting and the GDP at the request of United States Presidents Hoover and Roosevelt, who needed methodological apparatuses to evaluate the national macro-economic condition, and statistical measurements to support decision-making for policy development and market interventions.

The influence of the GDP on the stage of world politics was soon substantial. First integrated into national policy making of the United States, over time, the use of the GDP as a measure of socio-economic growth was adopted by global institutions, such as the World Bank and International Monetary Fund, and a host of other governments.

In the US, GDP has become "one of the most comprehensive and closely watched economic statistics: It is used by the White House and Congress to prepare the Federal budget, by the Federal Reserve to formulate monetary policy, by Wall Street as an indicator of economic activity, and by the business community to prepare forecasts of economic performance that provide the basis for production, investment, and employment planning" (Talberth et al, 2007). This turned the GDP into the central focus for all debates of global fiscal and monetary policies, and international aid. Nonetheless, Kuznets never intended for the GDP to be used as the sole indicator of socioeconomic wellbeing. To the contrary, in his speech to congress in 1934, he gave notice of possible misuses of the GDP in guiding public policies. "The valuable capacity of the human mind to simplify a complex situation in a compact characterization becomes dangerous when not controlled in terms of definitely stated criteria. With quantitative measurements especially, the definiteness of the result suggests, often misleadingly, a precision and simplicity in the outlines of the object measured. Measurements of national income are subject to this type of illusion and resulting abuse, especially since they deal with matters that are the center of conflict of opposing social groups where the effectiveness of an argument is often contingent upon oversimplification" (Kuznets, 1934).

This has not gone unobserved in government. In a speech at the University of Kansas, at 1968, Robert F. Kennedy criticized the policy dependency in the index. "Our Gross National Product... counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage... It counts special locks for our doors and the jails for the people who break them... It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl... It counts napalm and counts nuclear warheads and armored cars for the police to fight the riots in our cities..., and the television programs which glorify violence in order to sell toys to our children. Yet the gross national product does not allow for the health of our children, the quality of their education or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country, it measures everything, in short, except that which makes life worthwhile. And it can tell us everything about America except why we are proud that we are Americans" (Kennedy, 1968).

As such, the central argument of the *Normative and Methodological Critique of Growth, Wellbeing and Sustainability Indexes*, of the Israeli Policy Program, and of the government representatives who drove towards the revision to national statistics, was that although macro-economic indexes are requisite for measuring certain limited areas of social progress (economic, industrial, and trade-related), they are not comprehensive measures of a country's success.

Completing the partial picture provided by the SNA, by introducing additional metrics, is essential if political and economic decision makers, and the population as a whole, seek to improve society's wellbeing. As Kuznets and Kennedy noted, many of the factors that contribute towards economic growth, and thereby increase the GDP, are either damaging to society as a whole, or indications of an ailing society – such as investment in correctional facilities, policing forces, private security and pollutive manufacturing.

Israel needed indicators that measure investments that advance and protect social wellbeing in other areas; contribute towards social cohesion; and influence the proper functioning of a healthy society. The GDP cannot deliver on this requirement. In many ways, it is limited. *Normative and Methodological Critique of Growth, Wellbeing and Sustainability Indexes* featured four critical limitations.

First, many household chores do not increase the GDP, even though they contribute vastly to the wellbeing and prosperity of individuals, households and of society as a whole, such as raising children and caring for the elders and the sick.

Second, there are many, positive, productive, social exercises, that are not traded for money, and therefore cannot be captured by the SNA and the GDP, but are no less valuable to persons, such as volunteer work.

Third, the GDP is an aggregate measure, and therefore does not chart division of wealth within a given society. To reach a proper perspective of a country's socioeconomic condition any imbalanced distribution of resources should be studied and attended to.

One final limitation of the GDP is its inability to assist governments in sustaining wellbeing outcomes over time. Since sustainable wellbeing depends not solely on economic growth, but also on the myriad interactions between the market, society and the environment, a set of metrics should be developed to identify ecosystem

services which support social and economic activities; to recognize any thresholds of ecosystem collapse; and to notice any depreciation or deterioration of critical collective assets. Assets such as trust or social networks or clean air and water or the health of the population or adult skills in society, which, together, contribute towards the satisfaction of individuals, and enable any given nation to achieve its citizens' aspirations. The consumption of goods and services in society is subject to the stock of capital available to individuals and communities at any given time – social capital, economic capital, human capital and natural capital. Yet, the GDP was not devised to study these assets.

The publication of this elaborated report, a policy monograph of a sort, finally reconciled the stakeholders of the Program.

Interestingly, it achieved another goal. Advocating the rationale and social need for wellbeing indicators in Israel, reviewing the shortcomings of the SNA and the deficiencies of the GDP, motivated the Managerial Team to hold in-camera debates on the role of government in society and the purpose of policy making.

The advantage of these discussions was the build up of a theoretical and moral conviction among the Managerial Team, which gave its members a sense of resolve and commitment in achieving the Program's goals. This propelled the Policy Program in its formative years, in 2013 and 2014. Naturally, as original team members resigned, and replaced, lower levels of commitment could be registered among team members.

When the report was circulated between government offices, and a second round of presentations was completed, the Program's stakeholders grew satisfied and willing to side with the Program. The Disciplinary Teams have then assembled.

A subsequent challenge arose. Disciplinary Teams had to select indicators in a relatively short span of time, while following the principles enlisted by the Central Bureau of Statistics and the OECD. For this end, the Managerial and leaders of the Disciplinary Teams leaned on other policy programs from other countries. This choice is described henceforth, in a further demonstration of policy diffusion and policy learning processes.

25. Policy diffusion and other frameworks for measuring wellbeing

The limited time allocated for the Disciplinary Teams to select wellbeing indicators, about 14 months, coupled with tremendous aversion of senior policy actors to any kind of risk associated with being over-innovative in pioneering new methods of statistical measurement, government planning or operations, obliged the Managerial Team to hinge on successful test cases from around the world, and, where possible, to mimic other policy initiatives and frameworks. This practice will prove to decrease both time and apprehensions in the choice of indicators.

The Managerial Team and leaders of Disciplinary Teams reviewed six pertinent policy programs, including the Stiglitz-Sen-Fitoussi Report, the OECD's How's Life Initiative, and the Australian, Canadian, British and Italian national wellbeing programs. Reviewing these frameworks in greater detail in the following six sections attests to policy learning and to policy diffusion as they unfold in large processes of policy change.

A synopsis of the Stiglitz-Sen-Fitoussi Report

As stated above, in 2008, in response to the global financial crisis, Nicholas Sarkozy the French President commissioned a policy-oriented socioeconomic report from his chief economic advisor, Jean-Paul Fitoussi.

Fitoussi was to provide the government with a suite of methodological principles, and a framework, with which to construct an accurate and inclusive representation of the socioeconomic state of development of a country. A celebrated macro-economist, Fitoussi turned to Joseph Stiglitz and Amartya Sen, to author the *Report on the Measurement of Economic Performance and Social Progress*, known as *Stiglitz-Sen-Fitoussi Report*. Its purpose was to suggest improvements to statistics used to measure economic growth and social advancement of nation states.

The report became the foundation for many claims that have since arisen in economic and environmental discussions regarding how best to measure progress, prosperity and welfare, and how to sustain them over time. The *Stiglitz-Sen-Fitoussi Report* did not attempt to delineate the precise measures and phases that a

government must go through in order to achieve these ends. Rather, it advocated for a new way of considering these concepts.

Authors of the report argued that although traditional macroeconomic models of economic growth are essential for measuring certain aspects of social activity, such as industry or trade or productivity, they are unable to properly reflect all the aspects of economic and social welfare of the population. For this, the economic indexes must be adapted and accompanied by additional models that measure other social areas, including education, health and environment.

At the same time, the *Stiglitz-Sen-Fitoussi Report* insisted on the policy relevance of indicators that track long-term investments aimed at promoting enduring wellbeing, also known as indicators of sustainable development, or sustainability indices, and to measure any activities that strengthen social capital and prevent over-exploitation of natural capital.

It distinguished between models that measure the current state of wellbeing, and those that measure sustainability of wellbeing for future generations. This distinction is based on the understanding that the current state of wellbeing and welfare is influenced by the financial resources available to the population, and – from a non-economic, non-monetary vantage point – by the subjective feelings and the condition of environment in which individuals live. In this vein of thought, sustainable socioeconomic gestation depends on a generation's ability to bequeath to future generations the stocks and inventories of resources and assets that will determine their wellbeing: including economic, natural, social and human resources. Accordingly, the authors of the report list three main areas for statistical measurements: (1) Economic condition and activities, (2) Wellbeing, and (3) Sustainability.

The first five recommendations of the report, ordered under the title *How to Correctly Measure Economic Activity*, deal with the measurement of economic performance. The first recommendation is that when evaluating material welfare and comfort, aggregate households' income and consumption are better indicators than the more commonly used, aggregate measurement of GDP. GDP is a misleading gauge of the material standard of living, as it can increase while average household income shrinks, or vice versa.

The second recommendation is to measure incomes and consumption patterns of discrete households, rather than the economy as a whole. This allows for distinction between various streams of monetary transfers, such as taxes paid by household to the government, governmental support of households, and payment transfers between individuals and firms.

The third recommendation is to measure household consumption in the context of household accumulated wealth. Households that spend their savings on goods that improve current wellbeing, do so at the expense of future wellbeing, curbing their consumption opportunities. For this reason, measures of economic wealth, or capital, are central to measuring sustainability.

The fourth recommendation is to place greater emphasis on the distribution of income, consumption and wealth, rather than just gauging national averages which cannot accurately display the standard of living. A rise in average income could be unequally shared across population groups. Measuring distribution more accurately will reflect differences between such groups.

Broadening the scope of measurements to include non-market activities, is the fifth recommendation of the report. This requires the measurement of goods and services that households produce for themselves. The ability to produce these goods and services with fewer working hours also represents an improved standard of living. This also allows for a better appreciation of leisure time, which is also a contributor to wellbeing.

These five recommendations were embraced fully by the Israeli Program. By prioritizing economic measurement before social progress, welfare, and wellbeing measurements, the Managerial Team signaled to critics and endorsers alike, that the local Policy Program did not intend to replace existing indices, but rather to complement them.

Recommendations in the second chapter of the *Stiglitz-Sen-Fitoussi Report*, on the subject of multidimensional measurement of welfare and wellbeing, entitled *Non-Economic Measurements of Wellbeing*, assisted the Managerial Team, the experts of the Central Bureau of Statistics and the leaders of the Disciplinary Teams to quickly define the domains, areas and categories of activities in Israel that require measurement.

The report defined eight areas for the measurement of wellbeing, which must be taken into account and considered simultaneously: (1) Material living standards, including income, consumption and wealth, (2) Health, (3) Education, (4) Personal activities, including work and recreation, (5) Involvement of the populace in politics and self-governance, (6) Social ties and social cohesion, (7) Environment, and (8) The extent of economic and physical insecurity.

The sixth recommendation addresses the formation of indexes in abovementioned domains and it underscores the need of both objective and subjective data. In particular, subjective indicators reflect the way people perceive and experience their surroundings, their expectations and aspirations in life, as well as the level of freedom they possess, or believe to possess, to pursue their desires. In the context of the social justice protests in Israel, the development of subjective wellbeing measurements was mandatory.

According to the seventh recommendation, wellbeing indicators in all domains should be designed to assess inequalities between social groups. Inequality must be measured between individuals, between socioeconomic echelons, between genders and age groups, with a special interest in the accessibility of opportunities in education, health and employment.

The eighth recommendation calls to form specific surveys to evaluate links and influences between different wellbeing domains. This information will help to analyze how changes in one policy area, for instance public transportation planning, influences others, such as environmental quality, public health and economic productivity.

The ninth recommendation describes the role of national bureaus of statistics in this undertaking. The bureau of statistics must gather, analyze and provide the information integral to study various wellbeing domains. It should propose and construct composite indicators.

The tenth recommendation returns to the topic of subjective assessments of wellbeing and suggests that national bureaus of statistics should include in their surveys questions that reflect respondents' own evaluation of their health, environment, safety, material affluence, expectations and satisfaction with life.

The final two recommendations, 11 and 12, proceed from current wellbeing to future wellbeing and from wellbeing outcomes to wellbeing "production factors", discussing the measurement of sustainability of socioeconomic progression. The underpinning inquiry of these chapters is whether the present state of wellbeing can be maintained for future generations.

The eleventh recommendation indicates the need to provide information on changes in the stocks of various resources and assets which "generate" or "produce" wellbeing, such as human capital, economic assets and environmental resources. The measurement of sustainability, the report states, is an important complement to the measurement of contemporary socioeconomic conditions, but it cannot be determined by the same metrics. These are separate issues which require separate and distinct considerations and calculations.

The twelfth recommendation is to set up a system of environmental metrics to notify on thresholds and tipping points. In the case of passing a tipping point, an ecosystem will transit from one stable state to another stable state. In some instances, the change may be irreversible. Threshold or tipping points metrics are physical indicators, which ought to be calibrated by experts.

The *Stiglitz-Sen-Fitoussi Report* was a linchpin of the Israeli Program. Its twelve recommendations were accepted by members of the Steering Committee, the Managerial Team, experts of the Central Bureau of Statistics and leaders of the Disciplinary Team. They served as a second set of guiding principles of the Program.

Making the *Report on the Measurement of Economic Performance and Social Progress* a foundational pillar of the Program supports the argument repeated throughout this analytical report: learning by imitation drives policy making.

Policy actors, civil servants, policy analysts, across governments and agencies, observe one-another, imitate each other's structures, procedures and initiatives, and thereby take part in a wider diffusion of policy-related knowledge.

New policies are extensions of preceding policies. This is anticipated. Similar to other human endeavors; scientific research or the creation of technologies, national policy design relies on accumulated knowledge, on trial and error, and on learning. It is characterized by incremental changes. Each newfangled program is either an imitation of an existing program, or a modified, contextualized version of it, or a

combination of elements from previous reforms, melded together. Learning and diffusion are not only features of policy changes, they are instrumental to it. This is also illustrated by the review of the next five policy programs, all feeding into the Israeli Program.

A synopsis of How's Life? The OECD's Measurement of Wellbeing

As part of the organization's "Better Life Initiative", the OECD has been studying issues of wellbeing and progress for over a decade. This flagship program was designed to measure wellbeing and degrees of socioeconomic progress, both present and past, in all their aspects, including the cultivation of theory and methodologies, data collection and generation of empirical evidence, clarification of statistical issues and recommendations regarding the integration of measurement in policy-making.

The "Better Life Initiative" studies the notions of wellbeing, progress, sustainable socioeconomic progression, economic resilience, and subjective wellbeing. It devices macro and micro indices with distinct emphasis on households and individuals, wealth and wealth-distribution, capital and income of the population.

In 2011, the OECD published its *How's Life?* – a policy analysis intended to give decision-makers, as well as the general public, an extensive depiction of the central aspects that shape people's lives. The publication was strongly influenced by-, and largely rested on- the *Stiglitz-Sen-Fitoussi Report*, so much so that Fitoussi himself was invited to advise the Better Life Initiative team.

The authors of the OECD report contend that wellbeing is an umbrella term, covering all the areas that support various human needs, including the capability to achieve one's personal goals and advance and feel satisfaction from life. Taking this into account, broad multi-dimensional measurements are needed, instead of a single composite index (like the GDP).

To create such framework, the OECD identified three measurement fields, within which indicators should be devised: (1) Material conditions, including income, wealth and housing, (2) Wellbeing, which consists of measurements of complementary aspects of human welfare, in areas such as health, education, the environment,

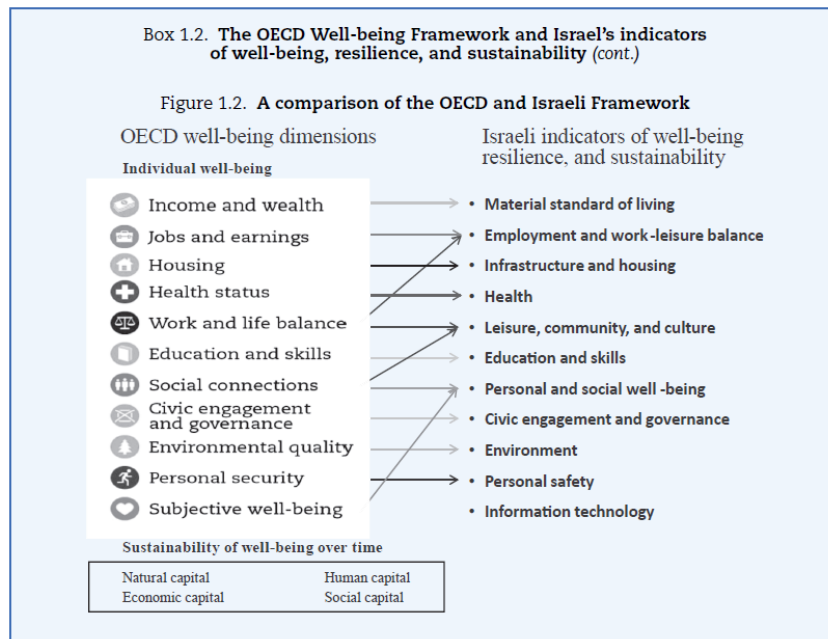
work-life balance and personal security, (3) Sustainability of wellbeing, which appreciates how the current state of wellbeing can be well-kept-up for the future, with an emphasis on the quality and quantity of four types of capital stocks; economic, natural, social and human – the "factors of production" of welfare, material comfort, happiness and progress.

According to the OECD, several general considerations must guide the formation of indicators in respective domains. First, indexes must take into account individuals and households, as opposed to macroeconomic representations of the economy, or the market, as a whole, in light of the considerable disparity between the two. Second, indexes must focus on outcomes of wellbeing, contrasted with the factors that influence it. Here too, there is often a difference between the two. A factor, such as increased health expenditures by the government, is not an outcome, such as improved general health. In the example, public expenses could be absorbed and re-distributed by an ineffective health care system. Often, there is little correlation between policy inputs, outputs and outcomes.

Indexes must also allow for a comparison of various social groups, in order to determine if resources and opportunities for wellbeing are divided equally in society. Furthermore, indicators must include both objective and subjective measures of wellbeing. Objective measures are indispensable to determine the living conditions of the populace. Nonetheless, measuring individuals' own perspectives and expectations regarding their wellbeing is imperative to elicit the psychological dimension of their daily lives. Corresponding metrics will engage in people's sense of insecurity, employment satisfaction, sense of belonging, or mutual trust.

In total, the OECD's *How's Life?* report listed 11 measures of wellbeing, including: health, work-life balance, education, social connections, civic engagement and governance, environmental quality, personal security, subjective wellbeing, income and wealth, jobs and earnings, and housing. It had a sweeping influence on Disciplinary Teams in the identification of wellbeing domains and in the choice of indicators. The OECD's *Measuring and Assessing Wellbeing in Israel* report, from 2016 (OECD, 2016), shows the large extent of the overlap (see figure below).

A comparison of the OECD and Israeli wellbeing frameworks (OECD, 2016).



The overlap is no coincidence. The Israeli government sought to learn from the accumulated knowledge of the OECD, while still maintaining a relative degree of independence in their choice of measurements. To this end, the Ministry of Environmental Protection spearheaded a cooperative agreement between the Israeli Government and the OECD, before the launch of the Israeli Wellbeing Program.

The OECD, for its part, provided active support for the Israeli process, taking profound interest in components such as consultations with the general public conducted in Israel, mechanisms for knowledge sharing between the government and the populace, examining the conditions that will ensure sustainable wellbeing, development of sustainability indices, appreciating the resilience of the systems that provide wellbeing, and the Israeli government's desire to connect the system of measurements to processes of decision-making.

The OECD placed noted experts at the service of the Israeli Program Managerial Team, to provide professional guidance. These experts were responsible, among other accomplishments, for the creation of the "How's Life?" report. Their contribution to the Israeli process was instrumental in several respects.

Together with the Central Bureau of Statistics, they helped establish criteria for choosing metrics. The methodological principles presented above in this paper were decided by the Managerial Team, in accordance with the principles practiced throughout the world, with the support of OECD experts.

Further support was in the form of professional critique. The OECD members provided feedback and criticism to the Israeli Disciplinary Teams and their proposed lists of indicators.

Comments were provided while the Disciplinary Teams were still in the drafting stages of indicators. OECD experts addressed each of the 108 indices (from nine wellbeing domains, with 12 initial indices per domain). Their notes helped the teams prioritize indices in order to form a final list.

In addition, the OECD advised the Managerial Team on the measurements of sustainable socioeconomic development. Measuring wellbeing sustainability requires a different theoretical framework, specific methodological principles, and a distinct system of indicators. A two-day workshop was held under the initiative of the Ministry of Environmental Protection, to develop an initial set of sustainability metrics.

A synopsis of Measures of Australia's Progress

In 2002, the Australian Bureau of Statistics began publishing national progress reports, meant to address the question: "Is life in Australia improving?" (Australian Bureau of Statistics, 2013). Publications presented evidences regarding the state of the economy, society and the environment, in an integrated, clear and accessible format.

According to the report, progress cannot be measured in macro-economic terms alone. The report "explains what makes good progress indicators, gives a summary of indicators and trends, and clarifies the relationship between indicators and how we ensure they remain relevant over time" (ibid). The system of measurements was constructed for the use of policy makers, researchers, and the general populace, to guide decision makers, and to enable a more informed public discourse on issues pertinent to the Australian nation.

Progress in Australia covers three thematic areas: (1) Issues with substantial and direct effect on the wellbeing of Australians, (2) Issues affecting the configuration and functioning of the Australian economy, (3) Issues which relate to ecosystems and affect both wellbeing and the economy. Indicators were chosen if they are capable of tracking progress over a period of at least ten years.

Assessments and trends were not extrapolated and the bureau refrains from any kind of predictions. That being said, in certain areas, reference is made to the current and future state of various capital stocks – human, social, economic and environmental – and to the question of whether these inventories are conserved or eroded over time.

When deciding on the measures, standards and benchmarks of national progress, the Australian Bureau of Statistics designated committee considered three different approaches. The first approach was to learn from the practice of the international community of statisticians and base themselves on accepted international standards. The second was to develop local progress indicators based on current policy issues. The third was to address the subjective positions, opinions and preferences of various stakeholders, politicians, civil servants, activists and the general public.

Eventually, the bureau chose a system of metrics based first on international standards, and then tinker the metrics according to internal consultations, and to expert advisors in economics, sociology, education, health, welfare, environmental sciences and ecology. Like many other committees around the world, the bureau conducted a series of round table discussions with stakeholders to determine the final areas and topics for measurement, and to gain local endorsement.

When deciding on how to compute, and later present, the state of wellbeing and progress, the bureau had to choose between three different formats. The first option was to combine wellbeing indices from different fields into one composite index. In this approach, the general, national, aggregate wellbeing would be conveyed by a single number. The second option was to create an integrated system of measurements that track and compare progress in three major fields: economy, environment and society (also known as integrated accounting). The third option was to present a package of national progress indicators in a variety of fields, each standing on its own. Learning from international practice, the bureau chose this last method.

A synopsis of the Canadian Index of Wellbeing, an experiment in deliberative democracy and the composite index debate

The purpose of the Canadian Index of Wellbeing was to measure and report on the general level of wellbeing in Canada, according to local criteria, in a simplified form similar to the GDP. A single number barometer for national wellbeing was contrived based on eight separate categories: community vitality, democratic engagement, education, environment, healthy populations, leisure and culture, living standards, and time use.

The initiative was inaugurated in 1999 as part of a community bid aimed at examining and comparing wellbeing between Canadian communities. Although it is aided by the central government, it is no government initiative. The architects of the index are hosted at University of Waterloo.

The involvement of the Canadian people in conceptualizing wellbeing in their own terms, in determining parameters for a satisfying level of wellbeing, and in defining the priorities of measurement and areas to be studied, took precedence over all other considerations. According to published reports, the involvement of various communities in the development of indices gave public legitimacy to the resulting single cumulative index.

"Through several rounds of coast-to-coast-to-coast public consultations with everyday Canadians, they told us wellbeing frames their aspirations. Understanding the interconnectedness of many aspects of wellbeing, and using it to fuel evidence-based and community-focused decision-making, is why the CIW exists" (Canadian Index of Wellbeing, 2012).

The process of public participation involved group meetings, in which hundreds of participants were asked to nominate and rank issues that affect their wellbeing. Participants then considered various issues in line with their relative policy importance. As such, the Canadian Index of Wellbeing program, an initiative of a non-governmental policy coalition, was an experiment in deliberative democracy, hosting public discussions on topics of national progress, welfare, and wellbeing.

When it was cited and presented, the Canadian policy process galvanized the imagination and enthusiasm of stakeholders of the Israeli Program, especially those among civil society organizations, former participants of the social justice protests,

and public participation practitioners in government ministries. All at once, it daunted centralists stakeholders from within the government, reluctant to lose sway over the process.

The theory of Deliberative Democracy stems from the recognition that national decisions, particularly strategic government resolutions with long-term, cross-sector, social-wide consequences, should be anchored in collaborative thinking and open and inclusive processes of public participation (Elster, 1998; OECD, 2001; OECD, 2009; Fishkin, 2011). This recognition led to an approach wherein policy makers establish forums of public deliberation ("Deliberative Forums") to voice and acknowledge the needs of citizens, and adapt their policies correspondingly (OECD, 2001; OECD, 2009).

The appeal of several policy actors in the Israeli Program to employ the theory in Israel raised several questions. How can democratic deliberation in its purest manifestation, exist, indeed support, a process which must rely on surveys of expert opinions, international practice, foreign advice, statistical know-how and policy-making experience?

On the one hand, the theory and practice of Deliberative Democracy go hand in hand with the motivation to create effective public policies, specifically when policy changes are made necessary by a wave of public protests. On the other hand, prioritizing it over other policy making models may lessen the influence of professionals in processes that justly require their expertise.

Furthermore, privatization of decision-making processes – as public participation processes are carried through by private firms – may remove accountability from the shoulders of government officials. The Canadian case thus presented an extreme example. Discussions around adopting this method in Israel provoked reactions both supportive and antagonistic.

The Managerial Team was to find a middle way to incorporate the general public into the Israeli Program. The method finally adopted in Israel, which was administered by the Managerial Team and a temporary Public Participation Task Force, presented a compromise between stakeholders. It included elements of democratic deliberation, such as public surveys, roundtable discussions across the country, and a virtual portal.

Regrettably, with little support of the Steering Committee, these elements were thrown together disjointedly, in a short span of time, with negligible budget, giving the appearance of a hastily sewn patchwork quilt.

Public participation in Israel was limited and the authority to establish a final list of wellbeing domains, metrics and priorities remained in the hands of a few senior officials. Some wellbeing areas were restricted entirely by the Steering Committee. A true and meaningful public discourse on progress, welfare, and wellbeing was never welcomed. The full process is described in the followings of this report.

Returning to the Canadian Index of Wellbeing: after formulating a catalogue of issues perceived as fundamental to wellbeing, a Steering Committee was appointed to formulate a composite index. Academics, scholars, policy analysts, representatives of the non-profit sector and a few civil servants examined the results obtained from the process of public participation, decided on eight categories of wellbeing and developed indicators for each category. Once indicators were recognized, the committee publicized them for a second round of public consultations.

The success of the Canadian process testifies to the importance of wide public participation; of technical, statistical and thematic proficiency in designing indices; of firmly set criteria for the choice of indices; and of media involvement in the process. The criteria of wellbeing that were chosen were meant to reflect the "Canadian spirit and values", including fairness, diversity, equity, inclusion, health, safety, economic security, democracy and sustainability. The indices were also designed to allow for comparison between different social groups in the country.

Despite its originality in scope and procedures, many of the CIW's wellbeing indicators were taken from the Canadian National Health Survey, which began in 1994, which was itself based on accepted international frameworks of health surveys. Policy learning and policy diffusion are evident in this program as well.

The Canadian case helped the Israeli Managerial Team in one further respect: settling a point of contention. One of the most controversial issues in measuring wellbeing is the policy choice between a single composite index of wellbeing, similar to how the GDP is a composite figure of economic growth, and an array of indices to reflect various, distinct, domains and categories.

In Canada, simplicity was the main consideration in choosing a composite index, so that all aspects of wellbeing can be reflected in a single score. The Canadian policy coalition recognized that wellbeing is a multi-faceted concept. Therefore, it was important to create an easily accessible tool that simplified complexities (Canadian Index of Wellbeing, 2012). Dissimilarly, the Managerial Team in Israel maintained that this choice oversimplified the intricacies of wellbeing, and that giving voice to these complexities in a "dashboard" of several metrics would have been preferable to lead to a richer public discourse and more precise policy making. It is illogical and unscientific to calculate such vastly dissimilar considerations as personal security, education, health and biodiversity, to name a few areas, all along the same metric lines.

Canadian team members themselves noted that there was no clear justification for taking scores for different considerations across different categories and weighing them on the same scale. Doing so is a value-laden decision of not prioritizing one wellbeing category over the other (even if scales are even, the composite index assumes that health is not more and no less important than education, or environmental quality, or personal safety).

Consequently, the Managerial Team in Israel contended that it was illadvised to integrate various fundamentally different scores, some inherently contradictory to one another (one has to diminish for another to rise) into one cumulative and final number, whose rise or fall will give a false indication of the state of wellbeing. Much like the false indication given by the rise or fall of the GDP.

The categories measured by the Canadian method include (Canadian Index of Wellbeing, 2012) Community Vitality covering, for instance, social relationships and the percentage of population that provides unpaid help to others on their own; Social Norms and Values comprising of the percentage of population that believe that most or many people can be trusted; Democratic Engagement which includes the percentage of voter turnout at federal elections; Communication covering topics of leadership and the percentage of women in Federal Parliament, among others; Education which consists of social and emotional competencies, basic educational knowledge and skills, ratio of students to educators in public schools, and overall academic achievement, attainment, and participation, among other indicators; Environment, including for example air quality, ground level ozone, greenhouse gas emissions, primary energy production, annual water yield in Southern Canada, biotic

resources and total farm land; Healthy Populations covering, among other categories and areas, the percentage of population that rates their overall health as very good or excellent, physical health conditions, the percentage of population with self-reported diabetes, life expectancy, mental health and the percentage of Canadians with a regular medical doctor; Leisure and Culture which is comprised of the average percentage of time spent on the previous day in social leisure activities, the average percentage of time spent on the previous day in arts and culture activities, and the average number of nights away on vacation trips to destinations at least 80 kilometers from home; and Living Standards including average and median income and wealth, income and wealth distribution, Gini coefficient, economic security, the percentage of labor force employed and housing affordability.

A synopsis of British Measure of National Wellbeing

At the end of 2010, at the request of British Prime Minister, the Office for National Statistics (ONS) began evolving a system of national wellbeing and progress indices. The ONS's objective was to produce an integrated bank of social, economic and environmental data, including subjective measurements, to complement the standard economic metrics. The process took nearly half a year, a short period of time as compared to similar processes around the world, during which the professional staff dealt with defining wellbeing from a national point of view. It rested on already laid foundations in other countries, including Canada and Australia, and on international experience at the OECD.

The ONS placed a noted emphasis on the subjective measurement of wellbeing, the national sense of happiness and satisfaction from several aspects of life (ONS, 2015). Objective measurements were suggested only when subjective opinion could not be drawn to reflect certain dimensions of wellbeing, such as life expectancy and academic achievement. All indicators included divisions and comparisons between social groups, and information was also animated in an interactive map.

The Israeli Managerial Team cited the British experience to rationalize and defend the development of local subjective wellbeing indicators, and new statistical surveys to measure them.

A synopsis of Italian Measure of Wellbeing

In Italy, measurements of wellbeing were established in collaboration between the Italian National Institute of Statistics (ISTAT) and the National Council for Economics and Labor (CNEL). Both agencies aimed to propose a multi-dimensional approach for appreciating the state of wellbeing by integrating indices of economic growth, equality and sustainability. It is considered as one of the most comprehensive and far-reaching processes in the policy field. The development of the indices began in 2011 and took 18 months.

The process had three core objectives. First, to formulate a set of common definitions of progress and wellbeing, focusing on economic, social and environmental issues. Second, to choose indicators that best reflect these areas. Third, to present the indicators to the general public, to decision-makers, to scholars and academics, and to the media, for comments, advices and to achieve acceptability among stakeholders.

In order to recognize and categorize the dimensions of wellbeing in Italy, the Italian government initiated an extensive process of public participation and joint discussions between experts, scholars, civil servants and public representatives. To guide this process, a Steering Committee was formed, comprised of representatives from the private sector and civil society, and a scientific committee of experts representing the various fields under question.

The agencies also conducted a nation-wide survey of 45,000 people, which investigated the relevance of discussed topics to the individual's sense of wellbeing. They created an on-line questionnaire to identify gaps and overlooked matters, a dedicated blog to gather suggestions and comments from the general public, and a series of conferences throughout Italy to discuss contested topics.

As in parallel endeavors in other countries, the Italian policy program was inspired by the *Stiglitz-Sen-Fitoussi Report*. The policy coalition behind the endeavor assembled its system of indicators while placing an emphasis on measuring inequality between social groups within a given generation, and between contemporary and future generations, as well as measuring the sustainability and the vulnerability of different wellbeing supporting systems.

With the conclusion of discussions, public participation and policy analysis, 12 categories were chosen with 134 indicators in all.

The Israeli Program was fundamentally influenced by the Italian one. Long standing working relationships between the Israeli Central Bureau of Statistics and the Italian National Institute of Statistics – joint statistical workshops and consultation forums – served as communication channels and learning mechanisms.

The eventual structure, procedures and outcomes of the Israeli Program, with the overlap between the local wellbeing domains and final selected indicators and international programs and metrics demonstrates the incremental, evolutionary and learning-and-knowledge-diffusion-based nature of policy change.

It also shows that the Israeli Program was not unique in illustrating this nature. Mimicry, learning and diffusion of ideas and processes was prevalent among other countries. The Italians drew on the Canadian and British practice. The British learned from the Australians, who in turn rested on the Canadians and the OECD foundations. The OECD was supported by the *Stiglitz-Sen-Fitoussi Report*.

The ONS, ISTAT, CNEL, the ABS, the CIW, the OECD – learnt from one another, co-evolved, co-adapted, co-produced new statistics. They altered their causes, their interests, their strategies and activities, through the mechanism of learning, participating, together, in a wider diffusion of knowledge.

A partial list of additional organizations and governments taking part in the diffusion of ideas and frameworks, and involved in formulating measures of wellbeing, progress, happiness, and sustainability to complement national economic accounting, include the World Bank, the European Union, Canada, United States, Brazil, Mexico, Ireland, France, Spain, Norway, Denmark, Germany, Switzerland, Italy, South Africa, United Kingdom, Turkey, India, China, Bhutan, Vietnam, Thailand, South Korea, the Philippines, New Zealand and Australia. The Israeli Program rested on all of those, but was also a product of local, prior, experience.

26. Incremental steps in the local stage: a history of developing measurements of wellbeing, sustainability and resilience in Israel

A further piece of evidence on the incrementality of policy making in the area of wellbeing, progress, and sustainability metrics can be found in the ledgers of Israel. The Policy Program featuring in this analytical report was not a novel endeavor on the global stage, as exemplified hitherto. It was not an original undertaking in the local theatre too.

The Israeli attempt to formulate measures of national wellbeing, sustainability and resilience began with several academic conceptual works and experiments in the field. Most prominent among them were the two volumes of *Indicators of Sustainable Development*, produced by the Ministry of Environmental Protection in collaboration with the Jerusalem Institute from 2004 and 2009, and the Israeli *Reliable Progress Index* from 2008, produced by the Organization for Sustainable Economics.

Parallel to these two programs, the Central Bureau of Statistics has also been working for several years to evolve indices to complement the GDP, with a similar impetus to provide a broader socioeconomic portrait of the Israeli society. Ongoing surveys issued by the bureau documented different perspectives of the material living conditions of households; family budgets, patterns of consumption, recreation and leisure, nutrition, and level and composition of income.

One more significant survey of the Central Bureau of Statistics is the annual *Social Survey* conducted since 2002, which makes available information on social welfare in the country. The *Social Survey* is based on a sampling of the Population Registry of the State of Israel, and is composed of two parts: a core set of close to 200 questions on an assortment of areas of life, and another 200 or so questions (the number fluctuates) that change from year to year, focusing on one or two topics in greater depth. For example, the 2008 survey focused on social leadership, while the 2010 survey focused on health, lifestyle and use of computer and the internet.

Especially noteworthy is the *Society in Israel Report*, a flagship publication of the bureau, published annually since 2008. It was meant to offer policy makers and the general public a comprehensive analysis of the state of Israeli society from various vantage points.

The report is produced according to the directions of the Yitzchaki Commission (named after former Government Statistician, Shlomo Yitzchaki), which concluded that, "each year a report should be issued to notice and inspect social predicaments, based on non-monetary statistical data that is being collected by the bureau and other government offices, to study under-explored aspects of the Israeli society". "The lack of public attention", the commission noted, "stems partly from the lack of data available to decision makers and to the public concerning trends of social dysfunctions. It is vital to report on these trends in the general society" (Report of Commission for Development of Additional Poverty Indicators, 2008:35).

The *Society in Israel Report* had five central goals: to gather and analyze data on rates of poverty and associated social distresses that cannot be alleviated by financial support alone, including poverty resulting from family dysfunctions, social exclusions, violence and crime; to compare poverty statistics between the Israeli society to other societies; to examine long-term changes in poverty-related metrics over the years; to survey socioeconomic mobilities across various demographics; and to make this information available to decision makers for improved policy design and implementation, and raise general awareness about poverty, distresses and social exclusion.

The report focused on eight categories: prosperity, employment and standard of living; poverty and social exclusion as compared to European Union states; recipients of welfare services; education; health; transportation and traffic accidents; law and order; and environment.

When government resolutions 5255 and 2494 passed, a new equilibrium came to the fore in the Central Bureau of Statistics. The new policy coalition – made of statisticians and backed by the Wellbeing Program's Managerial Team – advocated for an alternative system of measurement. Instead of poverty, distresses and social exclusion the Central Bureau of Statistics should re-distribute organizational resources to develop wellbeing metrics. The *Society in Israel Report* team lost budgets and was later dismantled. An inner-organizational competing coalition of Wellbeing, Sustainability and National Resilience won funds and earned responsibilities.

It was a process, one of many organizational processes, demonstrating the relevance of the concept of Advocacy Coalition Framework for the analysis of policy changes.

The bureau's wellbeing measurement teams soon drew on the resources, manpower, knowledge, experience and methodologies of the team that composed the *Society in Israel Report*. Some of the indices that appeared in that report, were mirrored in the first National Book of Wellbeing Indices. Several senior statisticians resigned in response, others were promoted.

The Non-governmental experiment

Evoking, again, the idea of incrementalism, two more statistical efforts should be discussed. In the years preceding the government Program, two notable non-governmental projects were published, received public acclaim and excelled in their process of public participation. The first, *Project Erech* (Project Value, Hebrew) was promoted by the Society for Sustainable Economics. The second, "Community Wellbeing Index" was organized by the Society of Matnasim (Israel's community cultural and youth centers).

Project Erech was conducted with the support and funding of the Heinrich Boell Foundation. According to authors of the report, it was meant as "a policy compass" to direct Israeli decision makers in the formulation and implementation of nation-wide policies, by developing indices to complement the GDP and publishing "Genuine Progress Indicator (GPI) for Israel (Preliminary Research 1979-2004)".

The project hinged on extensive public involvement, in order to authenticate the GPI findings. In the words of the authors, "Project Erech is based on creating a new dialogue on the economic playing field; a dialogue that connects sustainability to economics, progress to poverty, disadvantages to opportunities, and does not grant more importance to monetary value than to the values of education and home-schooling and volunteering, environmental quality, ecosystem integrity, and interpersonal connections" (OECD, 2016).

The leading researches of the project held 20 conferences, in four languages, which gathered 400 participants across the country, from a variety of ethnic and minority groups, and a wide sampling of professions. The central question directing these conferences was: what should be measured to determine the state of wellbeing in Israel? In response to this inquiry, seven categories were proposed: education, health, work, economics, family, community, and environment.

Rigor in its outreach, Project Erech dealt almost entirely with current wellbeing neglecting the issue of sustainability. It also lacked recommendations of how to apply measures and information in national policy making. Furthermore, government involvement in the process was limited. Nevertheless, it did furnish the public discourse with methods of how to link the idea of deliberative democracy together with the practice of statistical indicators design.

The Community Wellbeing Index was an additional non-governmental attempt to define wellbeing, with a focus on community life in different settings and spaces, such as cities, regional councils, and non-urban localities.

The index, launched in 2013, was designed for the use of mayors and the municipal leaderships, as a tool to gauge policy performance over time. The Community Wellbeing Index reflects the state of communal wellbeing in three areas: public spaces, social capital and communal influence, which itself consists of five variables – voter turnout, social networks and cooperation, initiative, leadership development, and collaborations between organizations and businesses.

From a methodological perspective, the index included both objective and subjective measurements, and was updated every two years. Similar to Project Erech, this index focused on the current state of wellbeing, with discussions of sustainability limited to the area of social and human capital. Both projects were bridges to the future national Policy Program, offering some local experience to learn from.

A policy making area where learning and diffusion were particularly prevalent was the design and execution of public participation – to which both Project Erech and the Community Wellbeing Index contributed, and one which the Italian program inspired. In Israel, it gave the Program legitimacy, and in the short period of time and limited funds it received – it would not have been possible to orchestrate without learning from other institutions and drawing on past practice.

The next two chapters analyze that process.

27. Public participation and the Israeli Program

Public participation is a political process, initiated by government, to engage the public in policy making. As a practice, it has evolved over the past few decades, and is becoming accepted in Israel as well. It is not a singular event, rather a series of exercises, orchestrated by a governmental sponsor – a ministry, an agency, an inter-ministerial team – carried out over the lifetime of a policy program or initiative, to inform the public of intents and means, as well as to muster various views, insights and concerns from the stakeholders of the policy at question. It involves individuals, households, special interest groups, and a wide array of communities in national decision-making processes (Rowe and Frewer, 2000; Rowe and Gammack, 2004).

Public participation can occur at different degrees, ranging from passively informing the public of policy developments, to canvassing their opinions and critics, to actively partnering public representatives with public sector organizations in designing and delivering policies.

But the practice of public participation poses a dilemma to governments. One the one hand, a crisis of governance and waves of protests in western democracies, compounded by a sharp decline in the levels of trust in governments, bid a transition to a more deliberative, participatory, type of democracy. According to Pew Research Center, "public trust in the government remains near historic lows. Only 18% of Americans today say they can trust the government in Washington to do what is right "just about always" (3%) or "most of the time" (15%)" (Pew Research Center, 2017). The 2017 Edelman Trust Barometer reveals global implosion of trust: "the largest-ever drop in trust across the institutions of government". "Trust levels in government", the survey finds, "at 41 percent, dropped in 14 markets and is the least trusted institution in half of the 28 countries surveyed" (Edelman Trust Barometer, 2017). In Israel, 47 percent of the population were not, or not at all, satisfied with the way democracy is working in the country (Pew Research Center, 2017).

In recent years, these factors made way for new policy initiatives that rely on democratic values, including civic responsibility, transparency, and open access to information. These led to public expectations, indeed public demands, for partaking in policy design, and consequently to the development of new methods of participation in decision-making processes.

Aided by an ever-increasing role of technology in the public sphere, new platforms can serve to accelerate such processes and can potentially allow for the greater realization of democratic values.

Then again, such initiatives require allocation of considerable time and resources. Furthermore, they postpone centralized decisions with decentralized consultations, debates, forums, surveys and roundtables. They extend policy processes, and, the lengthier a process takes, the more vulnerable it is to lapses, disturbances and exogenous political interventions, such as elections or changes in personnel. From this standpoint, opening policy-making processes to public participation summonses the metaphor of the pendulum of policy making.

Still, public participation initiatives provide a clear advantage, in that public collaboration creates a sense of legitimacy of policies. It also opens the policy process to additional sources of information.

Public participation in practice

In 2001, the OECD published guidelines for informing, consulting and inviting active participation of the public in policy-making. These principles were updated in 2009 on the basis of lessons learned from the experience of member countries of the organization as they implemented principles to different extents (OECD, 2001; 2009).

In Israel, various initiatives sought to enhance the dialogue between the government and the public, such as the Prime Minister's Office's Roundtable for Economic Policy. These programs were introduced as a result of Government Resolution No. 3190 of 2008, yet accomplished little.

The social justice protest of 2011 expressed the public's interest to assume a more dominant role in determining national priorities and in setting agendas, especially where government programs might impinge on the state of social wellbeing. Activists cried for a revolution in public administration and national policy decision-making processes.

Eventually, they will have to settle for much less. While the *Trajtenberg Committee Report* clearly conveys the importance of encouraging public involvement in decision-making processes, and although Government Resolution No.4028 on the subject of

"Improving the Governance, Planning and Execution of the Government" explicitly highlights public participation as an integral component of planning and execution of policies – senior policy actors remained uninterested.

Meanwhile, in 2012, several civil servants pushed Israel to join the International Open Government Partnership, which includes some 70-member states, dedicated to pursuing the four values of open government: transparency, public participation, accountability and promoting access to advanced technologies. That same year, the Israeli Forum for Open Government was established.

In an annex to Government Resolution No. 5255 of December 2012 on the subject of wellbeing indicators it was stated that "processes of public consultation should be conducted in the context of wellbeing domains formulated by the Disciplinary Teams". Engaging the public in choosing domains, subcategories and wellbeing areas for measurement would contribute to the accuracy and policy-relevance of the final metrics.

The more the public becomes involved with the Policy Program, the greater the likelihood that categories chosen for measurement will reflect its perceptions, expectations and wellbeing preferences.

There were four objectives to the participation process. By canvassing insights and preferences of the general public, as well as of organizations and experts, the first aim of the process was to understand what matters most to individuals, and, in so doing, to widen the Government's perspective for when compiling the final catalogue of indicators.

The second aim of the process was to validate the assumptions and decisions of the Steering Committee, the OECD and the Managerial Team – especially those regarding the identification of wellbeing domains and sub-categories that best reflect wellbeing in Israel. To achieve this, the public participation should have been an ongoing effort, carried out during the full lifespan of the Program.

The third objective was to extend the circle of participants in the Program and identify the most pertinent wellbeing topics to ethnic minorities, households of disadvantaged socioeconomic strata and otherwise marginalized groups, normally unnoticed in aggregate national statistics. Learning from the Italian ISTAT and CNEL, and from the Canadian Index of Wellbeing – by an intended polling and sampling of a wide

spectrum of population groups, the Israeli Program sought to address the unique aspects of these overlooked communities and to give them expression in the domains, subcategories and indicators to be formulated.

The fourth objective of the public participation process was to introduce the idea of "measuring wellbeing" into the public discourse. Ultimately, the purpose of the Policy Program was to devise better statistics for better policy making for better lives. It was meant to influence, and improve, policy: to align policy design and implementation with the preferences and parameters of wellbeing that are important to the populace. This would be achieved to the extent that a census on wellbeing in a variety of domains earns public legitimacy, and to the extent that wellbeing – as a policy priority – becomes the subject of public discourse.

Awareness galvanizes effort, and the Managerial Team postulated that if research institutes, civil society organizations, labor unions, professional guilds, small firms and corporations, individuals and households became aware, grew well-informed, to the idea of "wellbeing", and to the real state of progress and inequality in the Israeli society – future activism will more effective, in the allocation of resources and direct of attention to specific wellbeing needs.

Many policy actors, elected politicians included, did not sign up to these prospects. A lethargic, preoccupied, unfocused public was not necessarily an undesirable spectacle. While the importance of ongoing dialogue with the general public was agreed to in theory, it was not implemented in practice.

28. From ideal to reality: muddling through the public participation

The enlistment of public representatives in the Program was achieved in three methods: on-line questionnaires, public workshops designed for particular target group, and a dedicated website.

The on-line questionnaire was copied from the UK, Italy, Canada and the OECD. It was chosen to enable a personal, detailed response. The questionnaire asked individuals to express their opinions on wellbeing issues in each domain and across subcategories. Participants were asked to rank each sub-category within domains by perceived value. The questionnaire also allowed for free text reference to topics people felt were under-represented by the Program. The matter of specific indicators was of less importance, and therefore was not addressed in the survey.

However, the Public Participation Managerial Team was restricted in authority and budgets to circulate the inquiry form as it desired. Nor was it allowed to promote the questionnaire in a social-media campaign, or to keep it running long-enough to reach larger audiences. An unsatisfactory amount of a total of 2,126 respondents (Israel has over 8 million people), from 309 localities, filled the questionnaire, 46% of them women, 64% of them aged 25-44, and 81% graduated from university. Answers were submitted in the space of the 56 days allotted to them, between March and May of 2014.

Workshops for target communities were held from a recognition that some populations have limited or no internet access. The Public Participation Managerial Team, in collaboration with non-profit organizations, was commissioned to conduct workshops throughout the country, in which participants prioritized domains and categories of measurement and proposed wellbeing indicators.

Here too, senior policy makers hindered the ability of the Program to work as intended and arrive at a statistically satisfying sample. 23 workshops were held across the country, hosting 420 participants, with an average of 18 participants per group.

Addressees of the workshops included representatives of the Bedouin society, the elderly, the physically impaired, immigrants, Muslims and Christians, Druze women, ultra-Orthodox women, Arab Israeli women, single mothers and youth at risk. There was a total of 270 participants from these populations (and 150 representatives of

other sectors of the society), instead of 500 to 800 participants from each minority population, as appropriate statistical analysis requires.

In addition to the two methods described above, a provisional website was constructed to accompany the entire process. The website served as a portal for the Program; to inform the public of its existence, to report on progress, provide policy materials about the measurement of wellbeing, and to offer data on the Program's strategy, team members, government resolutions, the online questionnaires, and details regarding workshops.

In late 2014, the Managerial Team processed the results of workshops and questionnaires, and in light of findings recognized the need to develop a tenth measurement domain entitled "Culture and Community". The task of articulating indicators in the domain was authorized in Government Resolution No.2494 of April 19, 2015, which ordered the Steering Committee to congress another Disciplinary Team and formulate a catalogue of barometers.

After the publication of the first national statistical book in 2016 – the subject of the next Part – there were no initiatives to revive the consultation process. In like manner, no follow-up dialogue with public representatives was conducted after the publication of the second national report in 2017. Seeing that no interest was uttered by relevant government ministries, public dialogue was a one-time event.

As of 2018, the third and fourth goals of the public participation – extending the circle of participants in the Program and introducing the idea of "measuring wellbeing" into the public discourse – have proven to some extent elusive.

Governments were replaced, ministers ceased to be politically active, a few Disciplinary Team leaders retired while others lost interest in the Program. Some members of the Managerial Team moved to other sectors, and others moved to foreign countries. The momentum of the Program gradually tapered off, and as a result there seems to be reduced opportunities for linking policy making to wellbeing outcomes.

In 2016, a month before the publication of the statistical book at the Parliament, the Government tried to shut down the Program for undisclosed reasons. When it could not, it slashed its advertisement budgets.

With limited public funds, and regardless of a successful initial campaign in social and traditional media – discussed in the following Part – all further publication activities were eliminated. In due course, public awareness to the system of national wellbeing indicators dwindled. With curbed public interaction, little hope remained for public pressure to employ wellbeing metrics in policy design, implementation and appraisal.

But the pendulum of policy making has already swung. In 2016, despite of antagonism and obstructions, lapses and suspensions, Israel joined developed countries like Canada, Great Britain and Australia with its own published system of national wellbeing indicators.

Indicators were available in books, abstracts, statistical pamphlets and in a new website. Metrics were made accessible for policy makers to assist them in determining government strategies and allocate budgets and compare themselves with other states. In these respects, the Program reached its first milestone. The outcome – a more comprehensive representation of Israeli society is available to all, and although contentious, disputed and incomplete, it exists, and revised yearly.

Part III How's Life in Israel? Things We Know, and Things Remain to be Known

29. *How's life in Israel?*

Four years passed since the inception of Israel's national program to develop indicators of wellbeing, resilience, and sustainability. Four years during which the Managerial Team muddled through obstructions, intended and unintended, through political disruptions; change of governments, change of parliaments, changes of ministers, oppositions and efforts to numb the Program into quietude, through public participation processes, through professional squabbles over methodologies and definitions, and through a mediation of opinions of some 200 civil servants, scholars and representatives of the general public.

Although a system of national wellbeing indicators was published in 2016, muddling through for a wider policy change – a transition at the end of which better policies are designed and implemented and appraised based on a comprehensive representation of the state of wellbeing and its sustainability – was still underway. And it still is.

This third Part, entitled *How's Life in Israel? Things We Know, and Things Remain to be Known*, presents selected highlights of the Programs across several domains and in selected indicators and trends.

The Part also reviews the media campaign, held in 2016, as an attempt of the Managerial Team of the Program to introduce the twin concepts of "wellbeing" and "sustainable wellbeing" into the public discourse. Since advertisement funds were slashed by senior policy makers soon after its launch it illustrates not only the polemical and dialectic nature of policy change, but also, what can be achieved by a determined policy coalition with minimal budgets.

The last part of the Policy Portfolio attends to the unresolved issue of sustainable wellbeing and the need for further design of sustainability metrics. The final Part, entitled *You Say You Want an Evolution?* concludes the analytical report.

Israel

Every analysis of wellbeing trends must be placed in a larger national context. For context forms the setting for wellbeing to "occur" in, and context provides wellbeing

statistics with reason and intent with which figures can be fully understood and evaluated and acted upon.

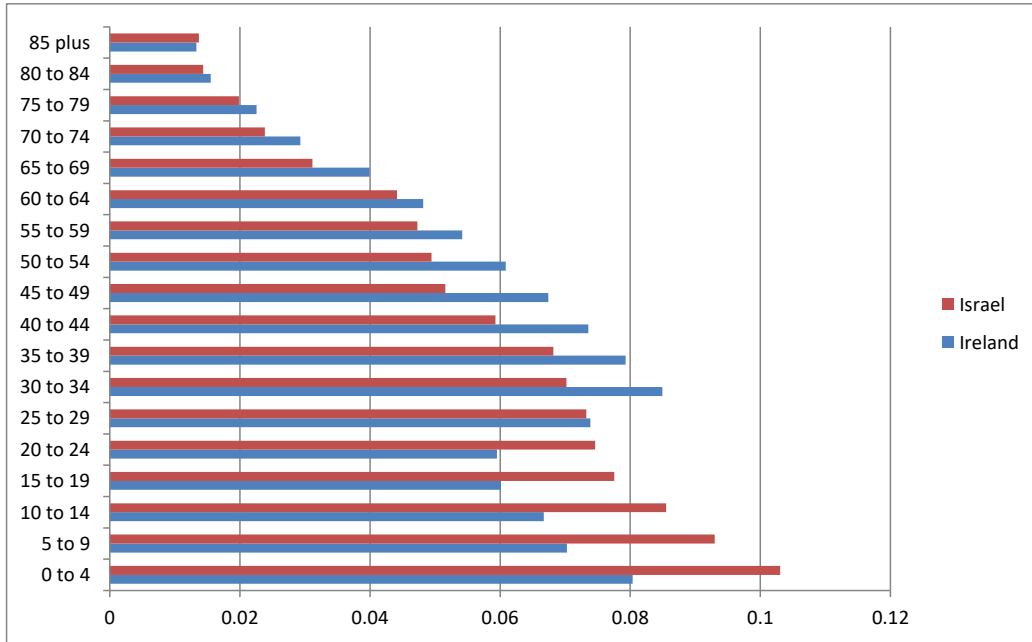
Since its establishment in 1948, Israel's population grew tenfold. In 2016, 68 years after gaining independence, and 71 years since the culmination of Second World War and the Holocaust, Israel's population stands at 8,522,000 with an average life expectancy of 82.05 years (Central Bureau of Statistics, 2017).

It has a small, yet diverse population. Nearly 75% of its inhabitants are Jews, some 20% are Israeli-Arabs, and the remaining 5% belong to other demographic and ethnic groups. The religious and cultural structure is also diverse. Jewish population includes Ashkenazi Jews of largely European descent, and Mizrahi Jews of North African and Middle Eastern origins. About one half of Israeli-Jews (44%) identify as secular or agnostic versus a considerable minority (10%) which identifies as "Haredim" or ultra-orthodox Jews, leading different lifestyles and practicing different value system from the secular majority.

Whereas the majority of Israeli-Arabs are Muslims, the Arab population includes Christian and Druze communities. Around 180,000 people, a fifth, of Muslim Arabs are Bedouin, living in the North-Western region of the Negev (a large desert region in southern Israel).

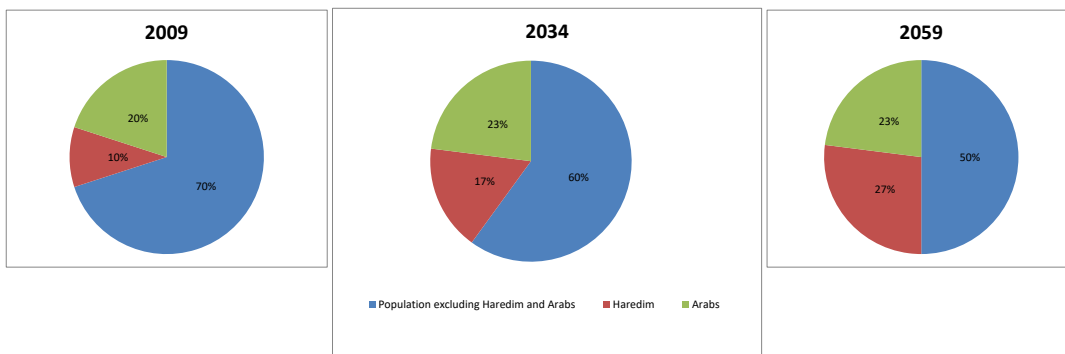
Fertility rates in the secular Jewish population are low but among the ultra-orthodox Jews and Arab-Israelis they remain high, giving the State of Israel a younger population than is typically the case for other OECD countries (see figure below).

Population age structure, Israel vs Ireland, 2012 (OECD, 2016).



Immigration has played a large role in this swell, with the last significant wave of immigrants arriving in the 1990's from the former Soviet Union. Roughly 20% of Israel's current population are former Soviet Union migrants and refugees. Nonetheless, it is large ultra-orthodox Jews and Israeli-Arab families that are likely to determine the composition of Israel's population. Based on assessments and projections of the Central Bureau of Statistics, ultra-orthodox Jews will go from roughly 10% of the population in 2016, to 17% in 2034 and 27% of the population by 2059. The Israeli-Arab population will increase from 20% to 23% of the population over the next 25 years before stabilising (see figure below).

Long-range population projections for Israel: 2009-2059 (OECD, 2016).



Israel is a middle-income country, with a GDP per capita of \$37,292 at purchasing power parity prices in 2016. Like a number of other OECD countries, Israeli government directed substantial economic reforms in the late 1980's and emerged in the 21st century as an open, trade-oriented, knowledge-driven economy. Characterised today as the "start-up nation", the country has a potent high-technology sector.

Nevertheless, the government has been unable to duplicate the accomplishment in the information and communications technology industry into other segments of the market. As a result, while unemployment rates are low, overall employment quality and economic security tend to be low as well. The labor market has many low-paying jobs, and short-term employment contracts.

National security is perhaps the area in which Israel differs the most from other OECD countries. These concerns have a substantial impact on local society. As the OECD noted (2015), Israel has a large defence force and most of the Jewish, and some of male Druze and Bedouin populations spends 2 to 3 years, women and men respectively, and many spend 4 or 5 years, in compulsory military service after graduating from high-school. Civilian public welfare expenditure is low by international comparison, in part due to high levels of military defence expenditure. Israel's military expenditure, as percentage of GDP, stood at 5.7 at 2016, compared with Netherlands's 1.2 percent, Italy's 1.5 percent, United Kingdom's 1.8 percent, and an OECD member states average of 2.2 percent (World Bank, 2017).

But GDP, and GDP per capita, and public expenditures, tells a partial story of Israel's social progress, wellbeing opportunities and inequalities.

Inequalities brought to light

Government resolution no.2494 recognized 11 wellbeing domains which should be measured to complement traditional economic metrics. These include: Employment, Personal safety, Health, Housing and Infrastructure, Education and Skills, Environment, Personal and Social Welfare, Civic Engagement and Governance, Material Standard of Living, Information Technologies, and Recreation, Culture and

Community. Wellbeing domains cover a total of 88 indicators, but only 49 were ready to publish in 2016. A review of carefully chosen indicators displays a country of extensive variances and disparities.

Interestingly, when placing the longstanding opposition of office-bearers to the Wellbeing Program in the context of the new wellbeing statistics, their motivations to stall the Managerial Team, to censor the publication and to terminate the Program becomes clearer, and understandable. Disparities figures can create social instability and ferment unrest. And as it appears, disparities are rampant and persistent: Women earn less than men in the labor market. Israeli-Arabs live a shorter, less satisfied life. They tend to be unemployed to a larger extent, and one in two Israeli-Arabs feels depressed frequently. The rate of low-achieving students in Arab-speaking schools is substantially higher than in Hebrew-speaking schools. Households in lower socioeconomic deciles spend more than a third of their net incomes on housing, a fact which hinders socioeconomic mobility. Elders are disadvantaged too: young people are satisfied with their life to a larger degree than older people, aged 65 and above. And overall, many people feel pessimistic about the future. Only 55% of people aged 20 and above assess that their lives will improve.

In the domain of Employment, a leading indicator was the rate of employment, showing the extent to which available labor resources are used in the market. Employment, the wellbeing statistical book explained, is the primary source of income of the majority of Israelis. It is also the space where people spend most of their time.

While employment levels in Israel are on an upward trend – 49.7% in 2000 compared with 60.4% in 2014, employment levels among Jews are higher than among Arabs, 64% compared with 42.5%, respectively, in 2014. This gap in employment between Jews and Arabs has increased over the years, from 14.4 percentage points in 2000 to 21.6 percentage points in 2014.

A second barometer of employment disparities was the subjective indicator of job satisfaction. The indicator draws on data referring to those who answered the question "do you feel satisfied with your work?" In most years, the lowest rate of job satisfaction has been noticed among Arab men.

In the domain of health, two indicators reveal further spheres of inequality: life expectancy and depression.

Life expectancy presents the average number of years that a person is expected to live, supposing that mortality rates in the period of reference remain unchanged throughout his or her life. Life expectancy is to a large extent related to health conditions in a country: it is affected by environmental, social and economic factors.

From 2000 to 2014, life expectancy increased by 3.6 years among men and by 3.2 years among women, from 76.7 to 80.3 among men and from 80.9 to 84.1 among women. The life expectancy among Arabs is lower than among Jews both among men and women. An international comparison of life expectancy (2013) shows that Israel is seventh among OECD countries together with Iceland, with a life expectancy of 82 years.

The measurement of depression refers to the self-assessment of individuals regarding their emotional state. In 2013, 34% of those 20-year-olds and above felt depressed frequently or occasionally, and 9% felt depressed often. 49% of Arabs felt depressed frequently, compared with 30% of Jews. 40% of women felt depressed frequently compared to 27% of the men. Depression, the statistical book underscored, rises with age: 32% among those aged 20-44 felt depressed often versus 35% among those aged 45-64, and 38% among those 65 and above.

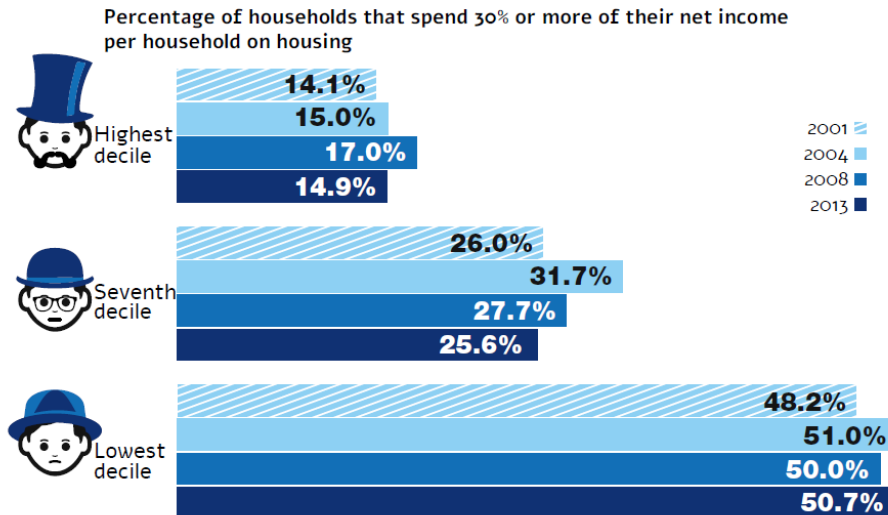
In the much-contested domain of housing and infrastructure, the policy area in which the social justice protest arose, the most significant published indicators was "housing expenditures".

Housing expenditures measure the rate of households that rent or own a home, and which spend a considerable part of their income on housing. An expenditure of 30% of the net income on housing is the standard highest percentage around the world. It defines what is "affordable housing".

Over the years, there was an upsurge in the rate of households spending more than 30% of their net income on housing until 2006-2007, when there was a decrease that continued until 2011. Since then an upward trend has once again been observed. From a standard segmentation of net income per capita deciles, it was found that the higher the socioeconomic decile, the lower the percentage of households that spend 30% or more of their net income on housing.

In the lowest decile, 50% of households spend more than 30% of their net incomes on housing; in the middle deciles, 30%-40% of households; and in the uppermost decile 15% of households expend more than 30% of their income on housing (see figure from the wellbeing statistical book below).

Housing expenditures indicators (Israel's Statistical Book on the State of Wellbeing, Sustainability and National Resilience, 2016).



Analyzing education in Israel, a principal indicator was the internationally-accepted "Percentage of Low-Achieving Students in Mathematics according to OECD PISA Study".

The PISA study (Program for International Student Assessment) conducted by the OECD once every three years assesses the level of literacy in three fields: mathematics, reading, and sciences. The purpose of the study is to evaluate the extent to which 15-year-old students "are prepared for adult life". The study surveys a representative sample of 5,000 students in 60 countries.

The rate of low-achieving students in mathematics in Israel declined from 42% in 2006 to 34% in 2012. The rate of high-achieving students increased in the same period from 6% in 2006 to 9% in 2012.

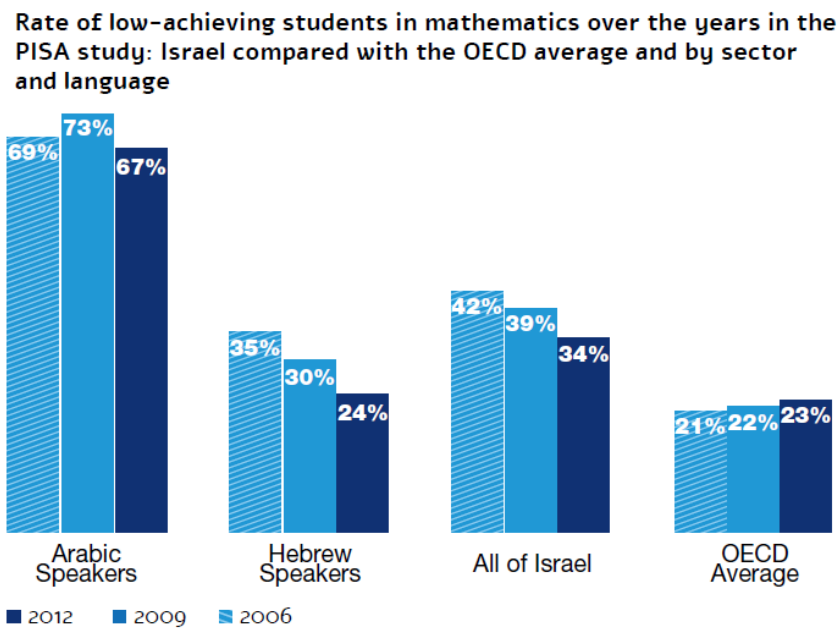
At the same time, the rate of low-achieving students in Arab-speaking schools is substantially higher than the rate in Hebrew-speaking schools, 67% compared to

24%. From 2006 to 2012, the rate of low-achieving students in Hebrew-speaking schools decreased (from 35% to 24%), whereas in Arab-speaking schools the rate remained almost unchanged.

Among high-achieving students, the proportion of boys is double the proportion of girls. In 2012, the gap was even greater, 17% compared to 7%.

In the entire Israeli population, the rate of low-achieving students in mathematics according to the PISA 2012 report was higher than the average in OECD countries, 34% and 23% respectively. On the other hand, the percentage of high-achieving students was slightly poorer than the average in OECD countries, 9% and 13% respectively (see figure below).

Student performance in PISA study (Israel's Statistical Book on the State of Wellbeing, Sustainability and National Resilience, 2016).



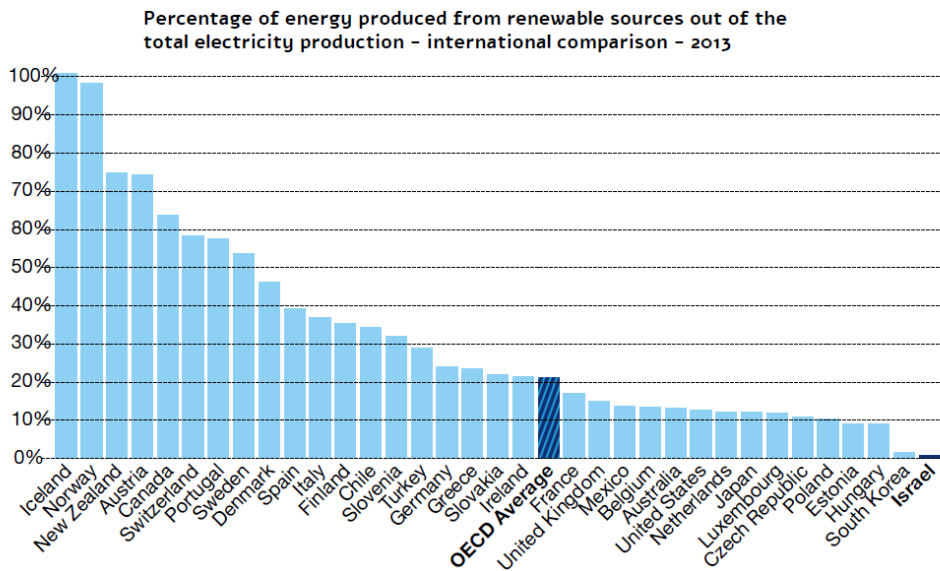
The domain of environment and environmental quality, highlights under-investments in clean energy generation.

The indicator of "Energy Generation from Renewable Sources" reflects the contribution of renewable energy sources to the overall supply of energy, including transportation and electricity generation. It also shows the rate of renewable energy

production from the total national electricity generation. Renewable energy includes sources like the sun (solar energy), wind, water, and biogas.

The rate of production of renewable energy in Israel out of the total energy supply in 2013 was a meager 0.21%, and 0.94% of the total electricity generated. Since 2010, there has been an increase in the production of renewable energy stemming mostly from an increase in the production of solar energy. However, the rate of renewable energy production out of the total electricity generated in Israel remains the lowest among OECD countries, with an average of 21% (see figure below).

Energy Generation from Renewable Sources (Israel's Statistical Book on the State of Wellbeing, Sustainability and National Resilience, 2016).

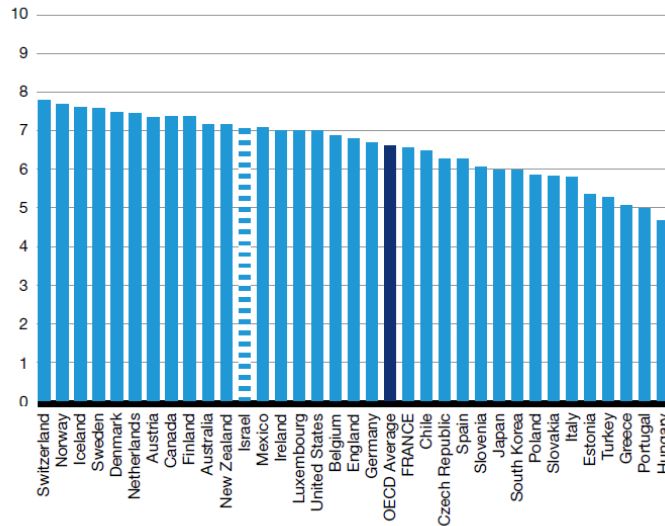


Another important subjective indicator, in the domain of Social and Personal Welfare, is "Satisfaction with Life". It is a common barometer for assessing the individual's declared state of wellbeing. The statistics illustrated that young people aged 20-44 are satisfied with their life more than older people aged 65 and above, 88% compared with 82% respectively.

It also showed that Israeli-Jews are more satisfied with their life than Israeli-Arabs, 89% compared with 73% respectively. Overall, satisfaction with life in Israel was close to the average in OECD countries in 2012 (Measured on a scale from 1 to 10 in the Gallup World Poll), see figure below.

Satisfaction with Life (Israel's Statistical Book on the State of Wellbeing, Sustainability and National Resilience, 2016).

Satisfaction with life on a scale from 0 to 10 by country – 2012



Source: Gallup World Poll in: OECD, Society at a Glance, 2014.

In a related indicator, examining Expectations of Israelis for the Future, hesitations and pessimism overshadowed confidence and hopefulness.

"Expectations from life in the future" are a component in individual's perception of personal wellbeing. In 2013, only 55% of people aged 20 and above estimated that their lives would improve. 70% of those aged 20-44 estimated that their lives would improve compared with 43% of those aged 45-64, and only 20% among those aged 65 and above. 56% of Jews estimated that their lives would improve compared with 49% of Arabs.

Upon publication it was the Managerial Team's responsibility to introduce the notions of "wellbeing" and "sustainable wellbeing" in the civic discourse. With negligible budgets, the Team was able to garner public attention and successfully promote the policy topics, until advertisement funds were cut by senior policy makers soon after in late 2016. The next chapter presents the main vehicles employed by the author of this analytical report, as head of the media campaign, and some of the campaign's results.

30. The accompanying media campaign

In the inklings of 2016, as the compilation of the National Book of Wellbeing Indicators approached its conclusion, it was time to instill the facts and figures of wellbeing into the media. If the purpose of the Policy Program was to devise better metrics for better policy making for better lives, and if this was to be achieved by making the notion of "wellbeing" –the subject of public discourse, then the Israeli public must become aware to statistics, trends and state of national progress.

At that point of time, February 2016, the Managerial Team effectively ceased to function. No meetings were held. No information was exchanged. Full responsibility for writing and editing the remaining chapters of the book, and all final preparations of materials for publication, was handed to the Ministry of Environmental Protection, and to the author of this report.

An interim team, destined to fashion an advertisement strategy, was established under the author of this report. The team hired a couple of Public Relations professionals, social media experts, and a host of temporary, external contractors and freelancers, specializing in marketing strategy, branding, copywriting, traditional and new media, search engine optimization, animation and film, broadcasters, producers, recording studio managers, content editors, and bloggers.

A dismal budget was allocated to the effort; dismal relative to multi-million expenditures allocated to other government media campaigns.

The campaign team developed a branding strategy, where "wellbeing" was the brand, including aspects of brand awareness, brand image, brand personality, and brand preference. It designed a wellbeing landing page (<http://wlb.gov.il/>), and defined target audiences, creative strategy, media strategy, and advertising effectiveness measures.

The team divided the marketing strategy into two phases. The first phase was an intensive "blitz campaign" scheduled for the first two weeks of the launch. This brief and intensive campaign intended to inform the general public of the existence of wellbeing metrics, through all channels of traditional and digital media at once. This phase began with the presentation of the report to the Israeli Knesset (Parliament) on 16 March, 2016.

The second stage of the media strategy was planned as a "rolling marketing campaign", meant to inform the public in incremental stages to the various domains and indicators chosen over the course of 2016. Emphasis was placed on strategic timing and opportunities, such as World Health Day to promote health indicators, International Workers' Day for employment indicators, and World Environment Day for environmental indicators.

The campaign included the publication of a National Index Book in both hardcopy and digital format. On the day of the presentation, 500 hard copies of the first edition were distributed in the Knesset, and an additional 120 copies were sent to Knesset members and ministers.

In the first days after the launch of the digital book, more than 17,000 downloads were recorded. In the first two weeks, there were 35,000 visits to the dedicated and responsive (i.e. mobile friendly) landing page. Full abstracts and statistical pamphlets were prepared, and within the first two weeks from the book's launch, 1,000 statistical summaries were ordered from government agencies. Further copies were ordered by Israel's biggest universities.

The marketing team designed advertising web-banners, purchased advertising space for them on content sites, and created a dedicated campaign for Facebook and Google.

In addition, one of the most talented animators in Israel created a series of three animated clips, to support the publication of new data. The marketing team launched a YouTube campaign to promote the clips. There were close to 1,413,000 views of the banner ads; 978,000 views and over 276,000 reaches on Facebook, and over 310,000 video clip views on Facebook. In total, over 35,000 clicks were registered through Google and Facebook. The YouTube campaign generated over 810,000 exposures, with over 305,000 views (all this on a meager budget).

In addition, 10 blogs were written on the subject, which were read by over 30,000 readers. The campaign also appeared in traditional media channels, including newspapers and radio. It received cover page and double spread articles, and was covered by all the daily papers in Israel, and all the sectoral newspapers and radio channels, reaching some 2 million Israelis.

Thanks to an effective STP strategy (Segmentation, Targeting and Positioning), real-time analytics of social media campaigns and websites, free exposure through traditional medias earned through the management of source content developed and presented by the team, the entire campaign recorded more than 2,550,000 digital exposures and a successful call to action of over 450,000 Israelis (measured in clicks, downloads and reaching out to the government for more information).

The campaign's performance on YouTube was notable, with more than 30% of exposures leading to clip views, which were watched by over 300,000 Israelis. The Facebook campaign was also uniquely effective. Exposures numbered close to one million, of which there were 276,465 reaches and tens of thousands of clicks.

The campaign team advised the Program's stakeholders to continue the positive momentum and realize the full media strategy in the areas of housing, infrastructure, environment, education and employment. The team advised focusing on the YouTube clips, Facebook campaign, and traditional media with high exposure value.

In terms of "value for money", it was one of three best government advertising campaigns of 2016.

Despite the success and exposure of the content, and the general public interest in the state of wellbeing, or perhaps because of it, senior stakeholders in the government decided to discontinue funding.

31. Unfinished business: from wellbeing to the drivers of wellbeing

While this analytical report focuses on the incremental and protracted development of wellbeing indicators, the complete name of the Policy Program – as mentioned in the second Part (page 44) – is Israel's National Program to Develop Indicators of Wellbeing, Sustainability and National Resilience.

This complete name appears in both government resolution 5255, of 2012, and in government resolution 2494, of 2015. It is the full title of the National Statistical Book, of 2016, and it is by this extended name, that the Policy Program is referred to in OECD documents (OECD, 2016).

Yet, this analytical report did not elaborate on these two additional purposes of the Program – designing sustainability metrics and national resilience metrics, notwithstanding their relevance to maintain social progress over time. Developing these measurement areas, or rather neglecting the development of metrics in these areas, remain the largest and most outstanding lacunae of the Program.

In both instances, the design of barometers was postponed. It was not without reason: members of the Steering Committee and members of the Managerial Team failed to agree on statistical methodologies and indicators. Simultaneously, the tenacious antagonism to publishing the wellbeing indicators demanded all attention and political capital of the Program members.

In addition, the concept of sustainability, or sustainable wellbeing, was associated with environmental agendas, and any expenditure of energy to correct this impression of stakeholders and policy actors involved with the Program, was too great to invest in 2015 and 2016.

Nonetheless, two things were discussed and agreed upon by the Managerial Team and by the Steering Committee. First, that the policy question of "sustainable wellbeing" is different from the question of "wellbeing"; that it deserves a discrete process, a discrete framework and a separate set of indicators. And second, that of the various frameworks and approaches to the evaluation of sustainability, the approach of measuring national capital stocks – inventories of national resources, economic, natural, human and social capital stocks – is the right approach for the policy undertaking.

To facilitate this preliminary effort and examine the field of sustainability measurement, the Managerial Team commissioned the author of this analytical report, to head a Sustainability of Wellbeing Task Force (included in the organizational structure). In 2014, the task force held experts' workshops and seminars in Jerusalem aimed at developing a clear conceptual framework for measuring sustainability and sustainable socio-economic development. The expert workshop brought together representatives of the Managerial Team with representatives of academia in Israel. They were joined by representatives of civil society organizations and delegates of the OECD and United Nations Economic Commission for Europe (UNECE) that had taken part in developing the OECD's framework for measuring wellbeing and similar sustainability metrics for the UN, Eurostat and Statistics Canada.

The Sustainability of Wellbeing Task Force issued a report entitled *Report on the Measurement of Sustainability*. The first objective of the document was to propose an applicable framework for measuring sustainability, based on the capital approach to sustainable development and a four-capital stock framework. The second objective was to propose an initial index of critical assets that would serve as the core of the conceptual framework.

The report aimed to dissipate some of the terminological haze around the terms "sustainability" and "sustainable development", and to provide policy makers, economists and ecologists alike with a common ground on which to assess the sustainability of socioeconomic development. Yet, the catalogue of critical and non-critical assets that are incorporated under the four stocks is so far only a draft catalogue. Additional research energy has been called for to develop further indicators and metrics.¹¹⁷

Accordingly, these introductory discussions were included in the National Wellbeing Statistical Book of 2016. The primer to the book noted that a system of wellbeing indicators was designated to complement the system of national accounts. It aimed to create a wider representation of social progress and human development than that provided by the GDP. But a government that aspires to enhance the quality of people's lives cannot base its measurements of performance on wellbeing indicators

¹¹⁷ Since its publication, a designated committee at the Israel Academy of Sciences and Humanities (IASH) was established to develop these ideas. The author of this report is a founding member of the experts committee at the IASH on the matter of sustainable wellbeing.

alone. Although wellbeing indicators reflect the state of progress and development of a country in any given year, an additional set of sustainability indicators is needed.

Sustainability indicators, the book stated, allow government to move beyond conventional measures of wellbeing towards measures of the factors that "produce" wellbeing. They allow policy makers to take a long-term, future-oriented view. Only sustainability measures may help governments evaluate whether or not development policies attend to the needs of present generations without drawing too deeply on the resource base that will provide the needs of future generations.

Sustainability measures take inventory of the conditions of these remaining resources, in quantity and in quality. They create a space in which societies and governments can discuss the criticality and substitutability of national assets with other economic, natural, human and social assets.

Designing a framework for the measurement of sustainable wellbeing, adapting it to local circumstances, advocating for it in the government, developing indicators – all was left to the discretion of the Ministry of Environmental Protection.¹¹⁸

Further work was needed, however, to identify and categorize and discuss national resources and assets which "produce" wellbeing, to support the capital theory approach with empirical evidences, to show how the approach explains cases of sustainable and unsustainable national socioeconomic transitions, to demonstrate how it could guide policy-making and direct sustainability transitions, and to propose ways to link it to national-level policy design, implementation and analysis. Answering these questions is the motivation for the doctoral research, and the first component of this DPA thesis. The next and final section of this analytical paper concludes its findings.

¹¹⁸ A larger study of national resilience, its definition, operationalization and evaluation, is outside the scope of this policy portfolio.

Summary

You Say You Want an Evolution?

32. Understanding policy changes

Policy analysts have long looked to various theories in determining the nature of policy change. If policy changes could be better understood, perhaps, they could be better administered.

This analytical report contended that four prominent policy change frameworks, gradualism, advocacy coalition framework, policy learning and policy diffusion, should be deemed most suitable to define and analyze processes of policy change.

Weighing together these frameworks, the analytical report argued that policy changes are fluid and fragile processes; protracted, prolonged, incremental. They are clouded by uncertainty, they are dialectic, and they always hang in the balance. They are led by shifting policy actors, clustered in policy coalitions, advocating their beliefs, muddling through, and between, naysayers, detractors and oppositions. Policy changes are human processes and thus subject to human imperfections; saturated with coincidences, whims and power struggles.

Based on policy learning and policy diffusion, new reforms imitate other, similar, older reforms. Policy actors adopt successful methods initiated around the world into their own organizations. Frequently, a policy program will be no more than a reproduction of structures, contents and models of other foreign agencies, national and supra-national. This is relevant for both policy programs and movements, inside and outside the government.

Consequently, initiators of policy reform, demonstrators, campaigners, activists, analysts, civil servants, elected politicians – organizational entrepreneurs, may strive for a policy revolution, but will ultimately settle for an evolutionary, gradual result.

This analytical report sought to establish this perspective by providing it with evidence. Following a review of theories, the report analyzed Israel's policy program to develop a system of national wellbeing indicators.

The Program intended to improve national decision-making processes with rich, comprehensive and timely information on the state of progress in the Israeli society, the market and the natural environment.

Until recently, the traditional way to assess the state of wellbeing, welfare and prosperity of communities around the world was to use a fairly limited system of indicators – the System of National Accounts – which comprises measures like economic growth and GDP.

This narrow system is insufficient to guide constructive, sustainable, socioeconomic transitions: although the System of National Accounts is an imperative tool that allows policy makers to evaluate and compare economies and though the GDP is an ancillary statistical device used to determine national and international policies, the formulation of any policy based on GDP alone is obstructive. GDP does not indicate the distribution of resources and wealth among a country's inhabitants, it does not reflect the total amount of resources at the disposal of the national government, and it does not represent all features and facets of life, such as social interactions and trust, volunteering, mental and physical health, governance or environmental quality.

Policy makers need a more comprehensive image of the state of society and the state of the economy. To obtain such an image, authentic and material for policy makers and for the general public, and in order to assist Israelis to better appreciate the real state of wellbeing in the country, the Government of Israel developed a complementary system of indicators in the following 11 domains: Employment, Personal Safety, Health, Housing and Infrastructure, Education and Skills, Civic Engagement and Governance, Environment, Personal and Social Wellbeing, Material Standard of Living, Culture and Community, and Information Technology.

Developed by the government, the origins of the Program should be traced back to 2011. The sweeping, national, social justice protests of 2011 made clear to policy makers and society more widely the need to go beyond narrow policies of economic progress to focus on broader concerns for social justice. Although it was unoriginal in motivations, in structure, in means and methods, in online platforms, instant messaging and spur-of-the-moment gatherings that cleared the way for a rapid circulation of information, in agendas and in objectives, the social justice movement did set the stage for a more systemic policy change.

Centred primarily on the cost of living and inequality, the mass protests involved hundreds of thousands of Israelis. It highlighted – but only to the trained eye of policy analyst – the extent to which measures and indicators of aggregate economic performance, such as GDP, were not reflected in the lived experiences of Israeli

citizens. It demonstrated – again, for the keen policy observer – the need for policies based on a larger set of wellbeing metrics.

In late 2011, after the protests fizzled out, the government responded to the social justice movement by convening a committee for socioeconomic change chaired by Manuel Trajtenberg. Amongst many other items, a great deal of items, the *Trajtenberg Report* suggested that the government should define and periodically update social objectives together with traditional macroeconomic objectives, including quantitative targets.

In particular, the report noted that important aspects of quality of life are not factored into the GDP, including the extent of inequality, health conditions, environmental quality, and so on. Thus the canvas must be stretched when defining the parameters for measuring the economy's performance and the policy should be steered accordingly.

Then, in 2012, the cry for policy change was trusted in the hands of a different policy coalition from that organizing the social justice movement: the central government. Government members were reluctant to carry out drastic reforms. The *Trajtenberg Report* was grossly overlooked by most government members. In the months that followed, the political-economic set of circumstances worsened. Seemingly, the policy process that was catalysed in the Housing Protests came to a standstill.

The gradual, dialectic nature of policy change gave a reason for the failure of the social justice movement to translate into policy programs. But these very qualities of policy change – unplanned and incremental; led by policy actors who continue to learn, and to muster new coalitions – created the conditions for a revitalisation of some ideas proposed earlier by the movement.

This paper then examined the unpredictable convergence of four separate factors which led to commissioning a Steering Committee, a Managerial Team and the Central Bureau of Statistics to develop national wellbeing indicators.

A careful analysis of the Policy Program to design national wellbeing indicators, described the Program's many origins, its sources of inspiration, and the policy actors and coalitions muddling through opposing forces, inconsistencies and disruptions, capricious whims of politicians, and lapses. The analysis also illustrated the effects policy learning and policy diffusion had on the social justice movement, on

the evolution of the Program, and on the public participation process it organized. The critical analysis report also appraised some of the Program's outcomes, and its critical lacunae and shortcomings.

Throughout the analytical report, the author argued that the Policy Program offers a sufficiently extended, sufficiently significant, sufficiently complex process to infer from on the nature of policy change. He argued that the Program was a microcosm of national policy making.

What appeared from this report is that image, that metaphor, that policy making is like a pendulum: every momentous swing, every reform, every cry for transition, exhausts its energy, its resources, its determination, its support, or succumbs to opposite reaction forces, or both. Then, when interest is lost, when the policy coalition disband, it may be brought to a halt. But it can always be restored.

33. Legacy, and a lesson learnt

Regarding the original purpose of improving national policy making with wellbeing and sustainability metrics, only time will tell whether or not this Program's goal was materialized.

In academia, the National Wellbeing Statistical Book and all associated policy reports made their way into syllabi of courses and seminars. The process itself is a subject of study in all major Israeli universities, in honors programs in Public Policy and Economics, in Public Administration, in the National Cadets Program for the Civil Service, and in the National Cadets Program for the Local Government.

Regarding the government, an increased use of wellbeing indicators as the basis for policy design has been noticed in a handful of ministries.

As for international organizations and the role of Israel in processes of policy diffusion, representatives of the Israeli Managerial Team, including the author of this report, were invited to participate in conferences in various countries and to present the Israeli process, its outcomes, and its conceptual models for measuring wellbeing and sustainable wellbeing.

For the general public, the marketing campaign was a success, however short, earning millions of views and cumulative entries to the site, the reports, animated videos, and social media pages in the months after publication (April-June 2016). But the extent to which wellbeing indicators will be used by firms, NGOs and activist remains to be seen in years to come.

Another result of the process was the Central Bureau of Statistics' decision, in 2017, to allocate additional personnel to the wellbeing team. The amended book of National Wellbeing Statistics was published in February 2017. The development work of indicators continues at the bureau, and the publication of the third Part is planned for March 2018 with the addition of more than 20 new indicators.

In summary, it appears that at the time of writing, the Israeli Program saw a partial success.

And as for policy lessons? In the grand scheme of things, incidents such as the unplanned outburst of the 2011 social justice protests, or the 2012 impromptu

meeting between the Minister of Environmental Protection and Jean Paul Fitoussi – breeding the Policy Program, or the 2013 and 2015 general elections – threatening to terminate the program, were random in timing, independent from one-another, and some, were entirely coincidental. They serve an example of the haphazardness of policy formation.

In retrospect, this random fall of events determined the fate of the Program. Specifically, if not for the meeting between the Minister of Environmental Protection with the author of the *Stiglitz-Sen-Fitoussi Report*, none of them taking an active role in the development of wellbeing indicators, it is likely that the National Indicators Book would never have seen the light of day.

Governmental musical chairs added little stability: between 2012 and 2016, when the system of indicators was designed, the Minister of Finance, the Director Generals of the Ministry of Finance, the Minister of Economy and the Ministry of Environmental Protection, together with the Chairman of the National Economic Council were replaced, as were most of the members of the Managerial Team.

Once again, in an unexpected turn, the author of this report was handed the multiple responsibilities of editor-in-chief of the National Book, lead author; author of the abstracts, pamphlets and complementary reports – on topics of sustainable wellbeing and national resilience; coordinator of the graphic design team, and marketing campaign manager. He was able to accomplish these tasks only as a result of a vacuum at the helm of his ministry. If a new permanent Minister would be appointed, the Program would be terminated.

Perhaps, this analytical report reveals to us, members of the policy making community as well as associates of the public administration research community, that the most important element to conduce policy change is neither professionalism, nor skill, nor natural mandate, nor legal jurisdiction (though such factors assist), but simply perseverance – the ability of policy actors to muddle through, for long enough.

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Annex for the Policy Portfolio

Context of Annex for the Policy Portfolio

This annex to the policy portfolio critical analysis is comprised of 15 brief reviews of relevant policy documents and related materials which support the findings, observations and investigations counted in the policy portfolio suite of paper. Considered together, these 15 documents tell the backstory of the policy discussed in the analytical report and provide context for events and responsibilities discussed in the reflective report. For reasons of discretion and confidentiality, the author of this annex cannot include any memoranda, notes, briefings, emails, or other documents sent to colleagues, including senior and junior staff, or director generals, or ministers, regarding the policy.

Each entry includes the name of the policy file, its category – an electronic book, a report, a government resolution, the time and length of authorship, whether or not it was produced prior to the commencement of the DTP program, a link (URL), a concise description of its content and an account of how it relates to the policy portfolio; the way in which it supports the critical analysis, the reflective report and, in some instances, the DPA thesis.

No. 1

Name (role)	Israel's First Statistical Book on Measuring Wellbeing, Sustainability and National Resilience, State of Israel (editor-in-chief and lead-author), also refers to as the National Statistical Wellbeing Book
Category	Peer-reviewed, government issued book
Time and length of authorship	3 years, published 2016
Produced prior to DPA	Yes
Link	http://www.sviva.gov.il/InfoServices/ReservoirInfo/ResearchAndPublications/Pages/Publications/P0801-P0900/P0817.aspx ; http://wlb.gov.il/ ; http://www.cbs.gov.il/reader/?Mlval=cw_usr_view_SHTML&ID=994
Description	<p>For the first time, Israel joins developed countries like Canada, Great Britain and Australia with its own system of national wellbeing indicators. The indicators present a comprehensive and up-to-date picture of a variety of domains and factors that contribute to the wellbeing of Israelis: education, health, personal safety, housing, infrastructure, environmental quality, recreational activities, employment, and income and expenses. The statistical book aims to help the government to determine its long-term socioeconomic and environmental strategy. It is also designed to assist Israelis in assessing their own lives and to compare it with other nations and societies. The book will support an evidence-based, factual and more analytic public discourse, rich in data.</p> <p>Providing a wide-ranging and contemporary representation of wellbeing in Israel required considerable resources and political commitment. The first statistical book, also entitled "How's Life in Israel?", which since its publication was followed by two additional statistical updates, is a result of two government decisions: Resolution No. 5255 from December 2, 2012, and Resolution 2494 from April 19, 2015. The book was submitted to the Israeli government following three years of meticulous work, deliberating</p>

	<p>and devising the indicators for wellbeing, sustainability and national resilience. More than 200 subject matter experts from government agencies, the Bank of Israel, the National Insurance Institute, the CBS, and the OECD, among others, contributed to the book, as well as researchers and scholars, public sector senior officials, all with guidance of the Central Bureau of Statistics, the National Economic Council, and the Ministry of Environmental Protection.</p>
<p>Relation to policy portfolio</p>	<p>The statistical book is presented in the policy portfolio at length. The creation process of the book demonstrates the gradual nature of policy change and thus, supports the main thesis of the analytical paper.</p>

No. 2

Name (role)	The City Works – the Ministry's New Sustainable Urban Development Strategy, State of Israel (chief strategist, author)
Category	Technical electronic book
Time and length of authorship	1 year, published 2016
Produced prior to DPA	Yes
Link	http://www.sviva.gov.il/InfoServices/ReservoirInfo/ResearchAndPublications/Pages/Publications/P0801-P0900/P0811.aspx
Description	In 2016, "The City Works" was the avant-garde strategic plan of the Ministry of Environmental Protection to promote sustainable urbanism in Israel. The e-book provides its readers with information on how the ministry conceptualizes and operationalizes the notion of "sustainable urban development". It includes the ministry's vision, the purpose of its new strategy, the challenges it faces, the costs and benefits of sustainable urban development, 10 strategic levers to help cities perform better and a broad basket of policy instruments and initiatives in areas such as infrastructures, transportation, public services, planning, green construction and information and communication technologies for smart cities (over 300 projects). The e-book hopes to contribute to government ministries, local authorities, academic institutions and organizations, students and pupils. Since its publication, it was downloaded from the ministry's website more than 5,000 times and was discussed in conferences and conventions by think tanks and academic departments in the country.
Relation to policy portfolio	While it is neither the subject of the analytical paper nor the subject of the theoretical thesis, this e-book is a result of a prolonged policy process. It is mentioned in the reflective report and helps to substantiate the observations of the

author of the policy portfolio concerning the sluggish and conflictual incrementalism, typifying policy design and execution processes.

No. 3

Name (role)	Assessment of Greenhouse Gas Emission Reduction Potential at the Buildings Sector and Suggested National Measures and Policy Instruments for the State of Israel and other Countries, State of Israel (chief strategist, lead author)
Category	Peer-reviewed government report
Time and length of authorship	6 months, published 2017
Produced prior to DPA	No
Link	http://www.sviva.gov.il/InfoServices/ReservoirInfo/ResearchAndPublications/Pages/Publications/P0801-P0900/P0845.aspx ; http://www.sviva.gov.il/infoservices/reservoirinfo/doclib2/publications/p0801-p0900/p0845.pdf
Description	This national report was submitted to the government of Israel by a ministerial steering committee, co-headed by the author, to propose policy instruments for reducing greenhouse gas emissions at the buildings and construction sector – residential, public and commercial buildings – to meet a national target of GHG emissions reduction by 2030. The report calculates potential GHG reductions from electricity consumption curtailment, a 7.1 million tons of carbon dioxide reduction by 2030, compared with business as usual scenario. Meeting the national GHG reduction target is likely to yield a net cumulative benefit estimated at NIS 218 billion. The ministerial steering committee submitting this report was appointed in 2016. It included representatives from the Ministry of National Infrastructures, Energy and Water Resources, the Planning Authority in the Ministry of Finance, the Ministry of Construction and Housing, and the Ministry of Environmental Protection. Representatives from non-governmental organizations also participated in committee meetings, including the Israel Green Building Council, local

	<p>municipalities, Israel's Builders Association, and Shikun and Binui Real Estate. The committee formulated a set of recommendations to the government of how to reduce GHG emissions in public and commercial buildings, how to reduce GHG emissions in residential buildings, and how to incentive clean electricity generation in all three sectors. The report includes an international survey of economic, regulatory and informative policy instruments from selected countries. Eventually, the committee compiled a list of 70 interventions in the various segments of the buildings and construction sector.</p>
Relation to policy portfolio	<p>Similar to the previous document, the policy portfolio reflective piece draws on this government report, to supports its claims. Drawing on this report shows that the arguments made concerning the nature of policy making are grounded in policy areas and policy initiatives other than wellbeing or sustainability measurement. In other words, by citing more sources and processes the annex shows that the particular development of wellbeing indicators attests to the more general nature of policy design. It demonstrates that it was not an anecdotal experience.</p>

No. 4

Name (role)	Finnish wellbeing: remarkable, yes; notable, undeniably; but is it also sustainable?, Finnish Parliament, Publication of the Committee for the Future 5/2016, pp.122-130 (author)
Category	Peer-reviewed government report
Time and length of authorship	1 month, published 2016
Produced prior to DPA	Yes
Link	https://www.eduskunta.fi/FI/tietoeduskunnasta/julkaisut/Documents/tuvj_5+2016.pdf
Description	<p>The Committee for the Future has been part of the Finnish Parliament's work for years. It was established in 1993. The committee is one of 16 standing committees. It has 17 members who are all Members of Parliament and represent different political parties. The main task of the committee is to commission foresights and scenario building activities. Based on these projections, it suggests strategies and policy interventions to work towards the best possible future for Finland and the people of Finland. The committee's time perspective is long and its range of issues is broad. In 2016, the committee held an international conference on future policies, sustainability and social and economic development to explore various models for good governance. The publication of the conference policy papers and presentations is a collection of these models and propositions.</p>
Relation to policy portfolio	Invited by the committee chair to Finland, the author of this report presented the frameworks of wellbeing and sustainable wellbeing as tools to assess, to monitor and to manage the country's national resource base upon which social and economic wellbeing depend. A series of presentations at the parliament and at the government demonstrated the demand of governments to new models and decision-making tools as well as the relevancy of the

Israeli-developed, capital-stocks-based models for such an undertaking.

No. 5

Name (role)	Report on the Measurement of Sustainability (Extended English Edition), State of Israel (chief strategist, author)
Category	Peer-reviewed government report
Time and length of authorship	4 months, published 2015
Produced prior to DPA	Yes
Link	http://www.sviva.gov.il/infoservices/reservoirinfo/doclib2/publications/p0801-p0900/p0808.pdf ;
Description	<p>This report on the measurement of sustainability presents the work of the Israeli government's Sustainable Wellbeing Task Force which was mandated in 2013 to put forward a measurement agenda and metrics for sustainability. The Team behind this report included representatives from the Prime Minister's Office, the National Economic Council, the Bank of Israel, the Ministry of Environmental Protection and the Central Bureau of Statistics. In September 2014, the team held interdisciplinary experts' workshops and seminars in Jerusalem aimed at developing a clear conceptual framework for measuring sustainability and sustainable socioeconomic development. The expert workshop brought together representatives of the government with representatives of academia in Israel, including scholars from the Hebrew University, Tel Aviv University, the Technion – the Israel Institute of Technology – and the Interdisciplinary Center Herzliya. They were joined by representatives of civil society organizations and delegates of the Organization for Economic Cooperation and Development (OECD) and United Nations Economic Commission for Europe (UNECE) that had taken part in developing the OECD framework for measuring wellbeing and similar sustainability metrics for the UN, Eurostat and Statistics Canada.</p>
Relation to policy portfolio	This government report feeds into the policy portfolio analytical paper. It prescribes government institutions with

a conceptual framework to assist them in fostering better, more inclusive and farseeing socioeconomic development strategies.

No. 6

Name (role)	Report on the Measurement of Sustainability (Hebrew Edition), State of Israel (author)
Category	Peer-reviewed government report
Time and length of authorship	4 months, published 2015
Produced prior to DPA	Yes
Link	http://www.sviva.gov.il/infoservices/reservoirinfo/doclib2/publications/p0801-p0900/p0807.pdf
Description	<p>Similar to the English report, the first objective of this document is to propose a clear and applicable agenda for measuring sustainability based on the capital approach to sustainable development and a four-capital stock framework. The second objective was to propose an initial index of critical assets that would serve as the core of the conceptual framework and assist policy makers in decision making processes and political analysts and the general public in Israel in policy assessment processes.</p> <p>This report was the cornerstone of an endeavor to develop national sustainability indicators. It has implemented the capital theory approach which is well rooted in literature and practice. It aims to dissipate some of the terminological haze around the terms "sustainability" and "sustainable development", and to provide policy makers, economists and ecologists alike with a common ground on which to assess the sustainability of socioeconomic development. Yet, the catalogue of critical and non-critical assets that are incorporated under the four stocks is so far only a draft catalogue. Additional research effort has been called for to develop further indicators and metrics. Since its publication a designated committee at the Israel Academy of Sciences and Humanities (IASH) was established to develop these ideas. The author is a founding member of the experts committee at the IASH.</p>

Relation to policy
portfolio

This government report, parallel to the English one, feeds into the policy portfolio analytical paper. It was also a part in the first policy document in this annex – Israel's First National Statistical Book on Measuring Wellbeing. It offers institutions an analytical framework to assist them in fostering better, more comprehensive and farsighted socioeconomic development policies by recognizing the determinants of socioeconomic development.

No. 7

Name (role)	Indicators for Well-being, Sustainability and Resilience, a joint publication of the Prime Minister’s Office, the National Economic Council and the Ministry of Environmental Protection, State of Israel (chief strategist, editor, lead-author)
Category	Peer-reviewed government report
Time and length of authorship	6 months, published 2013
Produced prior to DPA	Yes
Link	http://www.pmo.gov.il/policyplanning/hevra/Documents/madadim.PDF
Description	<p>This government report is an early version of the complete National Statistical Book. It was issues by the Prime Minister’s Office, the National Economic Council and the Ministry of Environmental Protection in 2013, and was written for 6 months to outline the structure of the final statistical book and the set of national wellbeing indicators. This primer provided the contributors and authors of the complete 2016 book with contextual information, rationale and justifications, benchmarks and propositions regarding the development of systems of wellbeing indicators. Furthermore, it underlined the main statistical principles that should direct government officials in the selection process of wellbeing indicators, including: a focus on households in addition to aggregate indices, a focus on outcome metrics instead of a focus on input or output measures (for instance, to move from measuring expenditure on health services or number of surgical procedures, to a measurement of public's health), a focus on internationally comparable indicators to examine Israel's position relative to developed countries, a focus on indicators that allow a comparison between different population groups to examine whether resources and opportunities for achieving a good quality of life are</p>

	<p>distributed equally among different communities and different sectors of society, and a focus on subjective measures of the quality of life to complement objective assessments. People's assessments of their lives are imperative for the understanding of the psychological aspects of daily functioning (for example, feeling of insecurity).</p>
<p>How it relates to policy portfolio</p>	<p>This report has been a milestone in the national endeavor of developing wellbeing indicators. It argues that putting wellbeing, sustainability and resilience indicators into practice requires moving from measuring wellbeing to understanding its determinants, and to assess how policies can be designed and implemented to improve the lives of citizens. Wellbeing and sustainability metrics can contribute to that goal by helping to identify policy priorities, by making it possible to implement coordinated policies across government departments, and, by increasing the legitimacy and public acceptance of these policies as directly grounded in people's preferences and priorities. All of these issues are elaborated in the policy portfolio.</p>

No. 8

Name (role)	Measuring Progress, Well-being and Development: Literature Review, in Indicators for Well-being, Sustainability and Resilience, pp.14-36 (co-author)
Category	Literature review for a peer-reviewed government report
Time and length of authorship	2 months, published 2013
Produced prior to DPA	Yes
Link	http://www.pmo.gov.il/policyplanning/hevra/Documents/madadim.PDF
Description	<p>This chapter in the government report reviews the challenge faced by Israel and other societies around the world to reach an agreement on a set of goals for collective action that could guide government interventions by a shared vision on what society ought to bequeath to future generations.</p> <p>The chapter, and the report, discusses the need to move beyond traditional measures of GDP and the system of national accounts, towards measures that inform about people’s subjective conditions, their feelings and aspirations, and about inequalities in those conditions among the members of the same community. As is noted in the chapter, and in the OECD's endorsement to the report, the statistical agenda of wellbeing has travelled a long way since its inception. What was in the past a discussion largely confined to academic circles has since translated into a deep-rooted international agenda.</p> <p>The chapter reviews the national initiatives to collect and use sets of indicators to inform citizens and policy makers about wellbeing and quality of life which transpired in countries around the world, including the United Kingdom, Italy, Austria, Mexico, Korea, France, Australia and New Zealand, among others. It was the first footstep in the</p>

	<p>initiative launched by the Israeli Government in September 2012 to engage in this agenda.</p> <p>The OECD reflected on this project, noting that while much of the ongoing international work has focused on creating better measures of contemporary wellbeing, the Israeli report highlights the importance of taking a long-term perspective, looking at the conditions required for well-being to last over time and for communities to be resilient when confronted to unforeseen stresses and shocks. Finally, this report underscores the importance of employing indicators in the policy process to better guide policy formation and execution.</p>
<p>Relation to policy portfolio</p>	<p>This chapter portrays the backdrop of the emerging field of wellbeing, progress and sustainability indicators, in which similar initiatives cropped up. Therefore, it makes an integral part in the policy portfolio catalogue of paper.</p>

No. 9

Name (role)	Towards an Environmental Justice in Israel: A Strategy, State of Israel (chief strategist, author)
Category	Government report
Time and length of authorship	10 months, published 2013
Produced prior to DPA	Yes
Link	http://www.sviva.gov.il/AboutOffice/EnvironmentalJustice/Pages/default.aspx ; http://www.sviva.gov.il/aboutoffice/documents/equal-environment-17062014.pdf ; http://www.sviva.gov.il/AboutOffice/EnvironmentalJustice/Pages/EnvironmentalJustice.aspx ; http://www.sviva.gov.il/subjectsEnv/Waste/Equal-Env-Waste/Pages/default.aspx ; http://www.sviva.gov.il/subjectsEnv/Waste/Equal-Env-Waste/waste-beduin-negev/Pages/Waste-Management-Bedouine.aspx ;
Description	<p>The collection of strategies, policies, reports and presentations deal with the equitable distribution of environmental costs and benefits that lie at the heart of the Ministry of Environmental Protection’s environmental justice strategy: the right to clean air and water, to habitable land, to free access to landscape and heritage sites, and to protection from environmental pollution and hazards. This list of interventions represents the inextricable link between environmental injustice and social injustice, the ministry sought to highlight and solve. It is a showcase of the steps taken towards integrating environmental justice principles in the ministry's programs, policies and actions. This basket consists of some \$450 million investments into environmental infrastructure and services in Arab, Druze and Bedouin settlements and cities (waste to energy facilities, waste bins, waste collection systems, and</p>

restoration of lands for rest and recreation). It also includes the set-up of a national environmental service to introduce a new track of civilian national service in the field of the environment, which would be specifically targeted at the Israeli Arab and ultra-Orthodox Jewish populations (500 volunteers). The program, which is based on the Swiss and Norwegian models of environmental-national service, will be implemented by the Volunteer Association, which is dedicated to empowering Israeli society through volunteerism, in general, and within the framework of civilian national service, in particular. In addition, the collection consists of an Environmental Justice Covenant based on wide-ranging consultations with academics and NGOs in the country.

Relation to policy portfolio

The ministry's environmental justice strategy is not the subject of the analytical paper but is mentioned in the reflective report. It adds to the portfolio of projects that the author of this annex oversaw, and for this reason, supports the findings and conclusions of the policy portfolio.

No. 10

Name (role)	Sustaining the Quality of Life in Israel: A Question of Capital Management (author)
Category	Peer-reviewed academic paper, Ecology and Environment a Peer-reviewed Journal for Science and Environmental Policy, ISEES (Hebrew)
Time and length of authorship	1 month, published 2016
Produced prior to DPA	Yes
Link	http://www.magazine.isees.org.il/CurrentIssue.aspx?Issueld=45
Description	This peer reviewed article in Israel's environmental sciences and policy journal published in Hebrew, intended to outreach to the local professional and academic community in the field of ecology, environmental sciences and public administration. The article discusses the role of the government with regards to sustainable and inclusive wellbeing. It explores how demographic, economic, environmental and technological trends are expected to disrupt and degrade wellbeing, and the ways by which the monitoring, measurement and management of society's capital stocks (taking a broad definition of capital stocks and resources) should allow government to cope with these challenges. It highlights the main benefits of the capital approach to sustainable development.
Relation to policy portfolio	This document is an example of how the ministry practiced its intentions to target and reach as many specialized and particular groups in the Israeli population; to raise their awareness, garner their attention and include them in the participatory process and consultation circles.

No. 11

Name (role)	Government Resolution no.2494, 19 April 2015, re: National Wellbeing and Sustainability Indicators, Prime Minister's Office, Government of Israel
Category	Government resolution
Time and length of authorship	2 months, published 2015
Produced prior to DPA	Yes
Link	http://www.pmo.gov.il/Secretary/GovDecisions/2015/Pages/dec2494.aspx
Description	Included in its complete form in the analytical report.
Relation to policy portfolio	It is mentioned in the policy portfolio and it was a vital part in the national process of developing wellbeing indicators. It also gave the Ministry of Environmental Protection the mandate to co-lead the national endeavor.

No. 12

Name (role)	The Capital Approach to Sustainability in Practice (producer and scriptwriter)
Category	Animated short movie
Time and length of authorship	1 month (base on the Hebrew animation), published 2016
Produced prior to DPA	Yes
Link	https://www.youtube.com/watch?v=dXP6SqNOjyo
Description	Sustainability: a trending concept, immensely popular, but what does it mean? This animation presents the Capital Approach for Sustainability in simple terms. This methodic approach calls for a new role for governments, as stewards of capital assets. This role requires long-term investments in human capital, economic capital, social capital and natural capital. Applying this approach, governments can ensure long-lasting wellbeing. For more information the animation directed viewers to the governmental website: http://www.wlb.gov.il/
Relation to policy portfolio	With over 100,000 views on YouTube and an additional 135,000 views on Facebook, this short animation contributed to an overall successful media campaign intended to introduce the notion of wellbeing and sustainable wellbeing in the public discourse. It is mentioned in the analytical paper.

No. 13

Name (role)	The Capital Approach to Sustainability in Practice, Hebrew version (producer and scriptwriter)
Category	Animated short movie
Time and length of authorship	3 months, published 2016
Produced prior to DPA	Yes
Link	https://www.youtube.com/watch?v=fbA_QFyTLJY&t=1s
Description	Identical to the English animation, the Hebrew version targeted the local population.
Relation to policy portfolio	With 96,000 views on YouTube and an additional 150,000 views on Facebook, this animation contributed to the successful launch of media campaign intended to introduce the notion of wellbeing and sustainable wellbeing in the public discourse. It is mentioned in the analytical paper.

No. 14

Name (role)	How's Life in Israel? The State of Wellbeing, Hebrew version (producer and scriptwriter)
Category	Animated short movie
Time and length of authorship	3 months, published 2016
Produced prior to DPA	Yes
Link	https://www.youtube.com/watch?v=fbA_QFyTLJY&t=1s
Description	An animation in Hebrew presenting the meaning of wellbeing in the public policy context and providing some statistics on the state of wellbeing in Israel at the time of the release.
Relation to policy portfolio	With over 550,000 views on YouTube and Facebook, this animation was released on the day of publication of the complete statistical book in 2016. It was an integral part of the media campaign and helped to introduce the notion of wellbeing and sustainable wellbeing in the public discourse and in policy making. It is mentioned in the analytical paper.

No. 15

Name (role)	GDP: Out, Wellbeing Indicators: In, Interview for Ha'aretz Television (interviewee)
Category	Television interview
Time and length of authorship	1 week, published 2014
Produced prior to DPA	Yes
Link	https://www.themarker.com/tv/1.2314814
Description	A broadcasted interview for Ha'aretz Television, a daily printed and online media outlet. The interview presented the government's resolution to develop a national system of wellbeing indicators. The interview is one example of how the ministry executed its marketing strategy to raise the awareness to the need for complementary measures of the state of wellbeing.
Relation to policy portfolio	Together with many press releases, this interview was an attempt to make the concept of wellbeing more popular in the public. It was intended, among other purposes, to involve the general public in the participatory process. It is referred to in the policy portfolio analytical paper.