Developing Environmental Education in
Kuwaiti Middle Schools:

An Islamic Perspective

Volume 1

KHADIJA ALI AL-NAKI

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Abstract

The main purpose of the thesis is to develop a greater understanding of the place of environmental education (EE) in Kuwaiti middle schools. The study examines whether present educational practice is adapted to the present and future needs of Kuwaiti society and to the environmental aspirations of an Islamic ethos.

As a theoretical basis for developing EE in Kuwaiti middle schools, the study attempts to link Islamic teachings to concepts of Western environmental ideologies. The main concepts of interest to the study are those concerning Man-Man and Man-nature relationships[*] in the Islamic tradition, such as concepts of Man, Earth, conservation of resources, oneness of human race and the Divine outlook of the Universe. Comparisons are made with key environmental concepts in the Western tradition, such as moderation in consumption, the Gaia Hypothesis and sustainability.

A literature study, in Chapters 2 and 3 undertakes a deep discussion of Islam and Islamic ethics and an explanation of EE using Western literature sources. This is followed in Chapter 4 with a discussion of the methodology of the thesis as a whole, linking the conceptual and empirical aspects of the research. This chapter also spells out how the focus of the research evolved and changed significantly. Chapter 5 introduces an environmental audit of Kuwaiti textbooks in two areas of the curriculum. Further empirical work, including a teachers' survey in Chapter 6, shows that:

• there exists both the need and the potential to develop EE within the Kuwaiti curriculum framework. This requires willingness to learn from Western practices, those which are compatible with Islamic ethics and teaching, and a revival of Islamic environmental ethics within the curriculum.

• teachers require assistance in order to contribute to this process.
Specifying and meeting teachers' needs is therefore an important part of the way forward, and as a contribution to this, an in-service workshop on EE for Kuwaiti middle school teachers was developed, implemented evaluated, and reported in Chapters 7 and 8.

The thesis concludes, in Chapter 9, that in order to ensure the effective provision of EE, priority should be given to in-service training of teachers of all subject disciplines. It also suggests that Islam could have a central place in the educational curriculum as a unifying theme. As a means to revive the Islamic environmental ethics, Western EE concepts and pedagogy could be incorporated within the Kuwaiti educational system, Islamic ethics being used to 'carry' environmental education into the subject based curriculum. An extensive set of appendices is provided in Volume 2, showing research instruments, raw data and materials used in and generated by the workshop.

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[*] The word "Man" is being used throughout the thesis, as translated from Arabic (al-Insan), to infer any human being or individual person.

Acknowledgements

To my late father from whom I learned
the ethical teachings of Islam and
gained the inspirational commitment to
this study

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LIST OF ABREVIATIONS

EE   Environmental Education
EfS   Education for Sustainability
ENSI   Environment and School Initiative
EMU   Evaluation and measurement Unit
ERCC   Educational Research and Curriculum Centre
ERU   Educational Research Unit
GDA   Growth and Development Administration
GCC   GULF Co-operation Council
INSET   Inservice training/ proffessional development
IT   Information Technology
IUCN   International Union for Conservation of Natural Resources
KSDAC   Kuwait Society for Development of Arab Child
KRSC   Kuwait Research and Studies Centre
ME   Ministry of Education
MEW   Minisry of Electricity and Water
MI   Ministry of Informatiom
MP   Ministry of Planning
RE   Religious Education
OECD   The Organization for Economic Co-operation and Development
OHT   Overhead transparency
SSCE   Secondary school certificate examination
UN   United Nations
Unesco United Nations Scientific And Cultural Organization
UNEP   United Nations Environmental Programme
WCS   World conservation strategy
WWF   World Wild Fund for Nature

Chapter One

The Kuwaiti Education System: the context and origins of this thesis

1.1 Introduction

This chapter is concerned with establishing the national context of this thesis. It furnishes a background description of Kuwait's formal educational system, and the Kuwait Ministry of Education's (ME) efforts in developing its educational policy. It refers to the views of some Kuwaiti scholars concerning the present status of formal education in Kuwait. The chapter goes on to discuss the value of the research problem for the Kuwaiti school curriculum and identifies particular research questions.

1.2 Geographic background of Kuwait

Kuwait lies at the north-west corner of the Arabian Gulf. To the north and west it shares a border of 240 km with Iraq, and to the south and south-west it shares a border of 250 km with Saudi Arabia. To the east it has a coastline of 290 km of the Arabian Gulf (see Figure 1.1).

The total area of the state of Kuwait is 17,818 sq. km. Due to the location of Kuwait in the Sahara geographical region, Kuwait's climate is characterized by long hot and dry summer, short warm rarely rainy winter. Air temperature is characterized by sudden changes. The highest temperature recorded was 51.5C. Thunderstorms frequently occur particularly during March – April and are associated sometimes with violent dust storms during which visibility may drop to zero. The nature of the barren desert and the arid climate conditions offer no prospects of agriculture. Most of the Kuwaiti mainland is a flat sandy desert, gradually sloping down towards sea level. The Kuwait mainland, having no mountains or rivers or other natural features, was for a long time a transit area for nomadic tribes. Such freedom of movement made delineation of borders rather difficult, one of the issues which resulted in the Iraqi invasion of Kuwait in 1990.

There are six seaports on Kuwait's coast constructed mainly for oil exports. Other shorelines are utilized by the water desalination plants, anchorage, petrochemical industries though elsewhere are private villas and chalets; 35% of the beaches mainly in the northern part are not as yet exploited.

Figure 1.1- Kuwait's map, position and main cities (source: MP,1999).

THIS IMAGE HAS BEEN REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES

1.3   Historical background of Kuwait

Kuwait began to prosper under the Al-Sabah ruling family in around 1752. At that time, Kuwaitis struggled for survival against the harsh conditions of life in the desert, where the main source of their income was fishery, pearl diving and sea-borne commerce. Their culture, which sustained their living in an environment of scarce resources, was moulded by the Islamic Shari'a (the Divine code of law, see Vol. 2, p11). The biggest problem of

everyday life was lack of sweet water. Kuwaitis depended on rainwater and on underground brackish water. From 1907, when rainfall became scarce, drinking water was shipped from the neighboring country, Iraq. A Protection Treaty was signed in 1899 with Britain, which confirmed Kuwait's security against any outside invasion. The treaty remained in force until 1961, when Kuwait was declared an independent state.

In 1938 oil gushed out of the biggest oil field in the world at that time, which brought Kuwait to be among the oil city-states, and changed the course of Kuwaiti people's living. Since then oil revenues have been the main source of income, causing sudden socio-economic changes in Kuwait society. From 1951, the housing scheme, the sewerage system, natural gas distribution, power plants, water desalination plants, hospitals and schools, have been developed.

The economic upheaval created by the oil boom has caused a radical change in all aspects of Kuwait society's life. Manual work has become the job of foreign labour. Old generation cultural values and outlook towards nature seemed inappropriate to the new circumstances, and were no longer attractive in the young generation's culture. Modern luxury has reached all sectors affecting the day-to-day life of the population. Urban expansion such as motorways, modern roads, multi-story complexes, shopping centers luxurious residential villas and continual acceleration of the flow of exotic consumer goods are the features of modern Kuwait. Kuwait imports more than 85% of its daily needs, while its main export goods are crude oil and petrochemicals. Based on the statistics of the population census conducted in 1995, Kuwait's population is around 1,575,570, with 653,616 being Kuwaiti nationals and 921,954 being non-nationals. The majority of the native workforce (91.3%) is occupying government-related jobs (MP,1996:42).

The generation of electric power in Kuwait is linked with seawater desalination processes at five shore-plants. The government's subsidy of the electricity utility made it possible to ensure selling the KW hour at a price of two fills, although the production of the KW hour costs the government 30 fills[*]. Since the Iraqi invasion, the period of oil revenue boom

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[*] 1 penny was worth approximately 5 fils in 1999

has begun to fade (ibid:135). This is largely due to the fact that, for successive years, a large portion of the revenues was used to rebuild the State's infrastructure in addition to the effect of the decrease of oil prices.

Kuwait's constitution was established in 1962, defining the framework and principles underlying the structure of the society. Kuwait society possesses a unified religious identity, where around 95% of Kuwaitis hold the Islamic faith and ethos based on Qur'anic concepts and Prophetic traditions and practices. Therefore, Islamic manners still occupy a distinctive place in the Kuwaiti culture and lifestyle. Consequently, Islam the religion of the state, is the main source of legislation, and because of its significance to this research, particular attention is paid to it in Chapter 2.

1.4 The education service in Kuwait

An Amiri decree (issued by the Amir of Kuwait) in 1961, established the first Ministry of Education (ME) in Kuwait in place of "the Directory of Information". In 1965 the decree of compulsory education was issued. According to this act, all Kuwaitis male and female, were obliged to attend school at the age of six and for 8 scholastic years, to cover the elementary and middle stages. Educational administration is the responsibility of the ME (which is the central governing board). It is situated at the Capital educational area, Kuwait City (see Figure1.1). Educational services are completely financed by the government, and account for about 10% of the state budget. Approximately 30% of the total population of Kuwait are learning or studying (MP,1996:181). In order to encourage Kuwaitis to continue their higher education, the government grants students studying some specified branches, and those of low income pursuing higher education, a monthly allowance.

The curriculum is centrally controlled and is described in terms of subjects. Thus, governmental schools follow the Kuwaiti national curriculum for all school stages. All operations related to making decisions, curriculum planning and all educational responsibilities such as study plans, book editing, examination boards, teacher's appointments and promotion, teacher in-service training are the domain of the ME. The

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Ministry has four sectors. An assistant under-secretary heads each sector; each reports directly to the under-secretary. As an attempt to apply decentralization, the country is divided into five educational areas distributed geographically: Al-Ahmadi, Al-Jahra, Hawally, The capital, and Al-Farwania; each area has its own board of education. A director general is appointed for each to monitor the execution of the policies and plans of the ministry by all the administrative staff and schools under his authority.

The General Goal of Education in Kuwait

The document of the general goals of education in the state of Kuwait, issued by Decree No. 4-1987, provides the following statement of purpose.

"Education aims at providing opportunities for the students, helping them integrally and comprehensively, to develop spiritually, intellectually and physically within the ultimate limits of their attitudes and potentials. It shall do so within the context of Islamic principles, the Arab legacy, modern culture, the nature of the Kuwait society and its traditions. Such education should ensure balance for the students' self realization and qualify them to contribute to the advancement of the Kuwaiti society in particular, and the Arab nation in general."

In accordance with the similarities between the societies of the Gulf region states, the educational Ministries of the Gulf Co-operation Council States (GCC) was formed in 1985. It is a joint high committee whose function is to draw a unified educational strategy for the whole Gulf region.

1.4.1 Formal structure of Kuwait education

The Kuwaiti educational ladder is a 4-4-4 pattern: primary, middle and secondary stages, each extending to four years. This general education is preceded by a two-year kindergarten. Except for the kindergarten, pupils of all schools are uni-sexed. Mixed gender of teachers is not allowed in governmental schools. Appendix 1.1, in Vol. 2, shows (1998-1999) statistics on the numbers of students, teachers and schools of the general governmental education in Kuwait.

The educational stages are described as follows. The paragraphs set out the background of schooling in Kuwait.

Kindergarten

This stage was introduced in 1954; it is not compulsory. Kindergarten is only confined to Kuwaiti children, or children of diplomats working in Kuwait. It covers two years. Children are usually introduced in a formal way to very basic ideas in the following subjects: Islamic religion, Arabic language, arithmetic, elementary science, arts, physical education and music. The teachers, who are all female, are provided with a teacher guidebook.

The Primary Stage

This stage covers four years and serves children ages 6-10. It is an obligatory stage. There are two types of boys' primary school where the staff is either all female or all male teachers. Girl's primary schools have all female staff. Children's promotion depends on monthly tests. Those who fail to achieve the passing grade in more than two subjects are asked to repeat the school year.

The Middle Stage

Middle school teachers and the middle school curriculum are the main focus of this thesis. The stage is of four years duration; it is obligatory and serves pupils ages 10-14. 'Computer-based learning' has been introduced, starting in the academic year 95/96 at four schools, and is expanding to 40 other schools every following year. General tests are held at the end of each school year. Subject teachers in the school write the tests, after consultation with subject advisors. The stated objectives of middle schooling are to help students:

- be acquainted with Islamic teaching, in order to acquire a balanced attitude towards life and the universe.
- acquire the fundamentals of knowledge, be informed of its sources, develop positive attitude towards scientific thinking, and develop the ability of self-learning.
- acquire knowledge, attitude, and skills that would develop his/her self-acceptance, self-control and capacity to take responsibility.
- acquire the facts about the Arab Islamic community and culture, and develop positive social attitudes and an ability to contribute effectively towards a changing society.
- acquire knowledge related to physical growth, and to instil in him/her positive attitudes towards healthcare and hygiene.   (EMU,1997:22)

The Secondary Stage

This stage again is of four years duration, and serves pupils ages 14-18. It is not an obligatory stage. Students can enrol at the secondary school after four successful years at the middle stage. Assessment procedures are test dominated at the end of the scholastic year. The Secondary School Certificate Examination (SSCE), is solely the responsibility of the Department of Examination in the ME. It is prepared by the subject advisors. If any student does not achieve the pass mark (50%) in any subject, he/she can repeat the exam in the same subject at the beginning of the following academic year. Students are not allowed to repeat more than three subjects. If so, the student is required to sit at the same grade the following year, and this will be his/her final chance.

1.4.2 Interdisciplinary activities in middle schools

The overt curriculum divides the learning experience into subjects. There is no encouragement for implementing inter-disciplinary themes within the subject timetable. Yet middle schools are assigned one hour per week for 'school activities' led by a teacher from any subject discipline depending on the availability of the teacher, or his/her willingness to undertake such task. The session is mainly devoted to athletic activities, agriculture, research, projects in science or the recitation of Qur'anic verses. However, according to the interest of the school administration and members of the teaching staff, the school has the chance to implement projects or activities of their own, with the ME's permission. It is the task of the school administration (ME,1994:40) to receive instructions, pursue activities, and periodically report school events to the respective director general of the educational area.

Environmental issues are not currently being addressed through an interdisciplinary approach. The Kuwait ME has the potential to run contests or activities on environmental issues which could be implemented during the activity hour. There is a shortage of qualified teachers in environmental issues but here too, the Ministry has the potential to act, for example by offering training.

1.5 Teacher preparation in Kuwait

Since the initiation of the modern educational system, Kuwait has faced a shortage of teachers. The Ministry annually recruits a vast number of teachers from other Arab countries. They occupy the deficiency posts of the 'basic subjects' mainly physics, chemistry, mathematics and English.

Pre-Service Teacher preparation

Pre-Service preparation in Kuwait is undertaken by two educational establishments. Students are accepted after they have successfully passed the SSCE.

- The Public Authority for Applied Education and Training. It offers a four-year course with a curriculum geared to providing knowledge of educational theory and practice in order to prepare teachers, particularly for the primary stage.

- Kuwait University, Department of Education. It also offers a four-year course geared to prepare teachers for all three stages.

In-Service Teacher Preparation

The 'Administration of Growth and Development' (GDA) was set up in 1987, and since then has become the sole authority (GDA,1997) for identifying the needs of in-service training courses, which is under the aegis of the ME. Teachers assigned to teach a new syllabus or implement changes in a syllabus, or those assigned to teach a new subject when added to the school syllabus, are able to participate in the training courses after being nominated by the concerned educational headteacher.

Fields of in-service training courses

The following list, published by GDA (1997) specify the fields of training implemented during the 1996/1997school year:

- school activities
- Islamic education (RE)
- practical studies
- educational aids
- computer
- special education
- fine arts
- musical education

- science
- Mathematics
- library
- social services
- Arabic language
- English language
- French language
- kindergarten

(GDA,1997)

The above list shows that INSET courses do not explicitly include EE programmes. It could be that some of the teachers may find ways to introduce environmental concepts through their subject areas, but within the provided training courses no overt guidance exists.

1.6 Curricular development in Kuwait from 1972

The Ministry of Education claims (ME,1998b), that ever since the establishment of the formal education in Kuwait it has been careful to relate the educational content to the needs of the Kuwaiti society. It claims that it has taken several consecutive measures as a means of developing all sectors of education. In this section the events and measures, taken during the period 1972-1998, are described in brief.

The First Conference on Curriculum, (1972)

The first attempt for curriculum development and reform took the form of a conference entitled *'General Conference around the Curriculum'* which was held in 1972. Participants of the conference were ME officials who were members of subject discipline committees.

The aims of the conference were to:

- gather the committees' remarks on the curriculum of each subject
- suggest means of developing the curriculum.

The prominent themes of the conference revolved around the following issues:

▪ Islam and the Arabs	▪ Comprehensive development
▪ National unity	▪ Cultural changes
▪ Society and the environment	▪ Democratization.

(EMU,1997:16)

It is interesting to see from this list that the ME had recognized the place of the environment within the curriculum ever since its initial developmental stage. It could be argued that most of these themes are perennial ones, and still are the most prominent themes that need to be infused within the existing educational curriculum for Kuwaiti youngsters.

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Formulating the General Goals of Kuwaiti Education, (1976):

In the light of the first conference, the ME formulated in 1974 a committee of educationists from Kuwait University, the Public Authority for Applied Education (previously called 'Training Institute of Teacher Education'), along with members of the ME. In 1976, the committee issued its document *"The General Goals of Education in the State of Kuwait"*. The document (ME,1976) specifies the subject fields for accomplishing the stated educational goals as such:

- Islamic education
- Social studies
- Practical studies (mathematics and science)
- Physical education
- School activities
- Fine arts
- Language studies

(ibid:19-20)

In addition to the stated 'subject fields', the document maintained that the accomplishment of the formulated goals exceeds the boundaries of the traditional subject disciplines. As a means of exposing the learner to real life experiences and connecting him/her to their environment, the document emphasized the endorsement of what it called the 'new fields'- similar to cross-curricular 'themes' and 'dimensions' in the national curriculum for England and Wales. The document proposed 10 such fields, some of which relate directly to this thesis:

- Citizenship education
- Education for 'informed consumption'
- Aesthetic education
- Family & population education

(ibid:20)

The document emphasized that the educational system should frequently review its curriculum in relation to the educational goals. Such a review, the document stated, should be in accordance with the developments of the content of the subject fields, assessment techniques, educational goals and the relationship between those fields to each scholastic year.

The ME states that the educational goals were derived to accord with the:

- characteristics of Kuwaiti society, its philosophy and its conditions,
- characteristics of present modern life,
- needs of learners and their characteristics,
- current educational trends.

(ibid:10)

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In this earlier publication the ME might have assumed that since Islam is one of the main characteristics of Kuwaiti society Islamic ethics need not be stressed. Although, in later publications, the ME acknowledges the significance of Islamic teachings for the derivation of educational goals. Moreover, it is stated that the Kuwaiti educational goals were derived to comply with the characteristics of present modern life. The environmental aspect, which is a major characteristic of modern life, is no where expressed.

In a much later report (ME,1994), prepared for an international conference in Geneva, the Kuwait ME revised its educational goals. The following two are particularly pertinent to this thesis, spiritual Islamic ethics and teacher training. Direct translation of the two goals is as follows:

- To pave the way for Kuwaiti students to encounter the scientific and technical revolution. As such, to realize the significance of the Arab and Islamic heritage in elevating the spiritual ethics of the individual, and deepening those values relative to 'citizenship'.
- To pay due consideration for upgrading the teacher's educational skills.   (ibid:17)

Such stated goals emphasize that, as part of 'citizenship education', the Ministry aims to acquaint the young with the fundamental spiritual teachings of the Islamic tradition. In the context of this thesis the Ministry's overt mention of 'citizenship education' is perhaps significant, as is the absence of any direct mention of environmental concerns. It is also clear that it approves developing the qualifications of teachers through in-service training.

The First Conference on General Education, (1987)

The first conference on general education, convened by the ME, was held in 1987. The objectives were to:

- examine the status of public education at all stages,
- identify significant problems,
- define the general frame for future developments in the education sector.   (ME,1987:1)

Participants were high officials from the ME, members of Kuwait University, school principals and some representatives of parent boards. The final report of the conference made several proposals. In relation to the field of teacher development, the following was one of the conference suggestions:

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- Allow the school administration flexibility to support teachers to implement creative and innovative plans and activities. (ibid:30)

In relation to the curriculum the reference suggested to:

- Implant in the teachers as well as the learners Islamic principles and values to support the development of 'good citizens'.
- Review educational goals relating to scientific and technical development.
- Review the school curriculum in relation to the characteristics of Kuwait society.
- Insure that educational plans concur with wider development planing, in order to prepare the learners to live within the frame of the society's development.
- Explain environmental approach to planning the school curriculum, in particular, in the fields of science and social sciences. (ibid:33)

The forgoing are repeated statements declared by the ME. They give an indication of the government's inclination for establishing and reviewing the educational policies. It does so, conscious of the states' wider development planning, Islamic teachings, the needs of the Kuwait society, learners and the teachers. On the other hand, in spite of the Ministry's statement of 'the environmental approach to curriculum planning', suggesting some environmental concern, such a statement lacks specification. In summary, the conference report betrayed a relative lack of attention to issues of implementation.

The Second Conference on General Education, (1989)

The Second Conference on General Education in 1989, was entitled 'Education a Shared Responsibility'. Participants were delegates from several governmental and non-governmental bodies concerned with education. The issues discussed at the conference were mainly technical and professional matters:

- Integration and co-ordination between all stages.
- Cheating in exams.
- Student's misbehaviour.

In relation to the first of the three issues recommendations included the proposal to:

- Review the home economics curriculum, to be replaced by 'Family Education' or 'Education for Life' for both sexes,
- Improve co-ordination and integration between the ME, educational institutions, governmental and non-governmental organizations, to ensure achievement of educational goals.

Potentially both of these proposals have great bearings on the development of EE in Kuwait. For example, EE could take place as a major theme within the proposed 'Education for Life'. Moreover, allowing non-restrictive flexible co-operation between the schools and other interested bodies or individuals in educational matters can be considered a major opportunity. Such openness to outside parties would certainly assist schools and teachers for the promotion of EE, as was the case in this research, when the researcher was allowed, eventually to implement her workshop (Chapter 7).

In relation to the issue of student behaviour, one further proposal was made of interest to this thesis:

- to review teaching 'citizenship education' to include 'sufficient' concepts around nationality and aspects of daily life that could reinforce the learners' sense of responsibility and sense of belonging.

(ME,1989b)

Again, throughout the conference, the Ministry repeatedly accepted the need to review the curriculum in order to address problems in connection with the priorities of current life and the needs of Kuwait society. Apparently, the ME is recurrently faced with the generally perceived need to educate the youth to refrain from anti social behaviour, including that which shows a lack of environmental awareness. Promoting the Islamic environmental ethics through carefully planned teaching techniques could make a significant change in the attitudes of the youth towards preserving the environment. The issue in relation to this thesis remains the apparent gap between the level of intention or goals, and the use of 'effective' means for implementation of change.

The Second Conference on the Curriculum (1993)

It was not until 1993 that the Ministry felt the need to convene a second general conference on the curriculum under the title *"Curriculum-Growth and Development"*. Representatives from every sector of the Kuwaiti governmental and non-governmental bodies and educationists from Kuwait University, Institute of Applied Sciences, Chamber of Commerce and Industry, as well as teachers and students from the ME, were called to participate in the conference (ME, 1993). The ME confirmed that:

"the role of all participant parties which represent all sectors of Kuwait society should not end with the closure of the conference. Their efforts should continue in guiding the educational process and following it up".
(ibid:54)

This condition, which was initiated by the ME, of permitting all sectors of the Kuwaiti community to participate in the Ministry's educational affairs, was ruled out at the following 1998 conference*.

In his speech for the inauguration of the conference, the newly appointed Minister of Education stated that:

"we undergo several problems concerning the curriculum; there is an unrealistic disparity between our curricula and our society's needs. The concern of the quantity of knowledge presented to our learners does not extend to quality ... a great deal of such knowledge might not be needed ... there is lack of a clear philosophy and defined educational policies". (ibid:21)

The Minister stressed the curriculum's role in fulfilling the needs of the development of the society, maintaining that curriculum should be revived and related to the "realities of life". The speech was significant in that it plainly asked for radical changes in Kuwaiti educational policy in order for the curriculum to comply with issues of real life. It also called for recognition of teacher's role in educational development.

The conference was organized under three domains, entitled:

- Towards curricula achieving the general goals of education.
- The status of Kuwait society and its future needs.
- The role of curricula in fulfilling the needs for growth and development of the State of Kuwait.

There is no doubt that these domains are major themes and that EE could play a major role in resolving many of the issues concerned. The conference's report listed no fewer than 81 recommendations. Appendix 1.3, in Vol. 2, lists the goals of the conference. It also lists some recommendations of relevance to the concern of this study.

In relation to this thesis, three broad areas of development from the recommendations can be emphasised:

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* The ME has specified the attendants of its Educational Strategy Conference being 'The Personnel of The Ministry of Education'. It was boldly stated on the conference's paper file coverage distributed to each participant (see Vol. 2, Appendix: 1.2). Albeit, the narrow representation of the conference's participants was not justified by the ME and this fact was revealed nowhere else within the conference's publications.

- emphasizing the role of Islamic doctrine in setting up the curricula,
- recognizing the need for developing students attitudes towards the natural and man-made environment,
- developing in-service training for teachers.

Such recommendations are argued to be of relevance to needs for the promotion of EE.

While it is true that the ME guidelines for reform would need considerable time and effort, in the light of the ME stance in restating the agenda of reform, one would expect action plans towards fulfilling those recommendations. The final judgement will depend on the ME's ability to undertake actual measures to correspond to such aspirations*.

Conference on Educational Strategy (1998)

More than five years after the 1993 conference, a conference was held entitled '*A preliminary Future Strategy for Kuwait Educational Development to 2025'*. The final report of the conference declared the main focus of debate to have been:

- The severe challenges confronting Kuwait, the unknown future consequences these challenges might bring up, and the requirements for establishing the 'Kuwaiti individual'.
- The role of education in pursuing social and national security and development.
- The role of education in developing the learners' awareness of the anticipated future changes, and developing their thinking skills and capacities.
- The issue of future thinking in general, which has become a major national duty that concerns every individual, and needs to be supported by education.   (ME,1998c:3-4)

Such debates can be regarded as an invitation to consider the role of EE. Indeed the Ministry of Education confirmed (ME,1998a) that the basis of the proposed strategy was built initially on a 'local' study conducted in 1997. It stated that it has taken into consideration several educational development plans of other countries, first: were the suggestions proposed by Jaques Delors in 1996 presented in a paper entitled '*The Hidden Treasure'*. It called for a series of differentiated goals: education for knowledge, education for career, learning how to live together and with others, and education for 'being'. Secondly, the Ministry stated, that it was influenced by the British government's 'White Paper' of 1997, entitled '*Excellence in schools*' (ibid:14).

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* It is of interest to note that Dr. M. Morsi, Director of Educational Research Center in University of Qatar, attended a debate held at Kuwait University in 1975, entitled, '*towards a better future'*. After more than a decade, since his first visit to Kuwait, he revealed: "even though more than a decade has elapsed since that seminar was held, the recommendations reached are still alive and represent valid directions and a starting point for the Arab Gulf education process. Eventually only some of them had been implemented in one way or another" (Morsi,1990). It seems that to this date this statement reflects a case that still exists.

It is worth mentioning that the quoted papers were not fully referenced within the document. The document was satisfied with referring to the Arabic translations of the authors' names and the titles of their papers. Moreover, there was no explanation or justification for the rationale of the Ministry's reliance on those papers in particular. Specifically, there was no reference to the success or failure of the suggestions of policy proposals in their native countries; this makes it difficult to evaluate them as models of educational development in Kuwait.

The proposed strategy for Kuwait consisted of 14 'streams' for educational development. The conference was arranged into nine committees each concerned with one or two of the 14 streams.

The ME gave precedence to two 'streams' in particular:

- The value of manual labour and practice.
- The sense of belonging, national pride and citizenship education.   (ME,1998b:19)

Again the Ministry expressed its concern (ME,1998a) for promoting citizenship education at schools and stated that it is:

"concerned to develop the learner's 'awareness of practical problems' and their future implications .. As such the Ministry seeks to 'enable' the learner to take responsibility for confronting future difficulties, those which would be totally different from the ones encountered while living an affluent life. Such awareness, would help develop in the learner the *sense of care* for public utilities .. Within this *stream*, the learner is assisted to develop analytical and critical thinking that is built on *correct* information".   (ibid:23-24)

In a recent publication (1998), one would expect a carefully worded statement. Once again the ME has acknowledged lack of certain moral and ethical aspects in the education of Kuwaiti youth, yet it did not specify the procedures beyond this level of general exhortation. It did not recognize Islamic environmental ethics nor the attitudinal and affectional aspects of education. It has repeatedly stressed 'awareness' in order to develop in the learner the 'sense of care'. Moreover, the ME acknowledged the learners' need to be aware of long-term effects of present day 'practical problems' but no reference has been made to the means of 'enabling' him/her to confront the implications of present day environmental issues. In the light of the rhetoric within the ME's documents there remains the question of whether the ME is fully committed to implementing its own

recommendations. There exists a gap between stated goals and serious intentions of planned actions.

1.7 A critique of Kuwait formal education system

Periodically, the ME, Kuwait University and the Kuwait Teacher Society convene conferences and debates around educational issues. Through such conferences a substantial number of Kuwaiti scholars and educationists have expressed their concerns around the status of formal education in Kuwait, and many have presented suggestions for development or reform according to their experiences or research. This section discusses criticism of the formal Kuwait educational system. In particular, discussion is founded on analysis of the Kuwait educational strategy, school curricula and the issue of teacher qualification.

1.7.1 Kuwaiti educational strategy and educational goals

With regard to the Kuwait educational strategy, Al-Hamad (1997:83), suggested that:

"Kuwaiti educational strategy required educational philosophy that identified the society's ultimate goals stemming from Islamic faith, Arab culture, Arab and Islamic civilization, contemporary scientific development and human civilization".

Al-Mehaini holds (ERU,1996) that in Kuwait there is no defined educational policy or explicit strategy. What exists, he argues, is an un-planned and un-evaluated educational system of diverse experimental attempts and endeavours on the basis of personal opinions. He suggests that education should be the responsibility of all sectors of society and not to be the concern of educationists only. Al-Haroon expressed agreement (ERU,1996) on this emphasizing 'with no exception'. He added that educational policy in Kuwait is founded on individualized views and not on a constitutional system, thus agreeing with Al-Mehaini.

With regard to educational goals Al-Umar, argued that the committee responsible for deriving the educational goals of 1976 did not represent the major sectors of Kuwait society (EMU,1994:41). The Kuwaiti Society for the Development of Arab Child

(KSDAC, 1992) confirmed this view noting that the general educational goals have not been translated easily into practical objectives. More precisely, it criticized the statement by the ME saying "education should familiarize the learner with the Arab and Islamic tradition and culture and should aim to enforce them". KSDAC assumed that those who formulated the goals suppose that all tradition and culture are in accord with the Islamic teachings. With reference to the goal statement "education should prepare individuals capable of bearing the responsibility of change and development of Kuwaiti society and the Arab nation", KSDAC noted that assigning the responsibility of preserving the tradition and culture of the society to education in the first place contradicts the second goal of effecting change in society.

Regarding other educational aspects, the Kuwait Research and Studies Centre (KRSC, 1997) conducted a survey to identify teachers' views in 93 schools of all levels, concerning the professional difficulties they encounter and their suggestions for professional development. This research is of interest to the present discussion in a number of ways. For example, middle school teachers affirmed (direct translation):

- The need for development of the teacher's professional skills. The need is for in-service teacher training of a non- traditional quality.
- The need for teachers to be informed with the latest developments in education.
- The goals of the activity session – the weekly session assigned for middle school pupils to be filled with any activity being approved by the Ministry - are not clear and the teachers are not trained to implement it.   (ibid:48)

Concerning the curriculum, the following suggestions, among several others, were put forwarding the same research. There appeared to be a need to:

- re-examine the curriculum. In particular, the science curriculum needs to be in accord with the scientific and technical developments,
- re-evaluate subjects which may not satisfy the needs of the Kuwaiti society,
- evaluate subjects not related to the Kuwaiti, the gulf nor to the Arab environment,
- examine concepts needed to deal with social, political, and scientific changes,
- examine the curriculum's progression between the three scholastic stages.   (ibid:51,52,106)

This particular research indicated some dissatisfaction of the implementation of existing training courses. The teacher's responses also imply that they are interested in innovative teaching techniques. More interestingly, they call for guidance to run the weekly 'activity session' imposed on them (see section 1.4.2). Although the concept of 'the environment' is not explicitly mentioned by the teachers, their call for new concepts dealing with social,

political, and scientific changes (which have important environmental aspects) furnishes a significant justification for this thesis.

A study conducted by Al-Sarraff (1993), has shown that 50% of secondary school students, 61% of middle school teachers and 57% of primary school teachers believed the present school curriculum was inadequate to prepare students to confront practical life issues; many found their programmes of work to be prolonged, condensed and boring. Another survey conducted by Al-Hamad (1993) confirmed the school curriculum's inadequacy: where 60% of the inspectors and teachers of middle and secondary schools believed that the current curriculum did not fit the needs of contemporary Kuwaiti society. Of that 60%, 83% called for a fuller preparation of students in citizenship education and sought the formulation of new ideas and concepts in the curriculum. The study concluded that respondents demanded a major and a comprehensive change in the curricula in general. Elsewhere, Al-Hamad (1997) recommended that developments of middle school curriculum and programs should indicate relevance to the learners' life and environment, and should develop their skills for critical thinking and instil in them 'proper' behaviour, self esteem and strong bonds with their community.

More precisely, Al-Khalaf (1993) explained that the Kuwaiti school curriculum is more attached to the past with a stress on rehearsed skills - it is not concerned with aspects that prepare citizens for a future of a new global context and distinctive characteristics. The curriculum, he argued, is not in line with the actual critical events facing the Gulf region (ibid:9). KSDAC (1992) agrees with Al-Khalaf describing the curriculum as detached from the present and the future. Likewise, Al-Hattab (1993:21) adds that:

"the contents of the curriculum lack conviction; in that, they do not match those provided in developed countries. The contents furnish a process of temporary distraction that, in effect, is wastage of the state's time and potential. They create a pattern of learners unable to follow the pace of the modern world".

In a conference organized by Kuwait University in 1993, entitled "General Education and Kuwait's Future", Al-Sheikh (1993:6) is even more critical:

"the curriculum focuses on the lower levels of understanding. It does not contribute to motivating the learner for discovery or creativity, nor learning through problem solving".

Moreover, in his view, the separation of development issues from education is implicated in the rising rates of consumption, a drop in the rates of productivity, the individual's alienation from production, and low skill levels. He recommended that in order to prepare youth for future challenges, education should be connected to development and should be built on political, social, and economic understanding. On the same line, Al-Umar recommended:

"a better balance between needs of the society and those of the individual".   (EMU,1994:42)

In a discussion circle, Hamada (EMU,1994:71) pointed out that:

"learners are not being informed about the economic and developmental plans of Kuwait society".

In response to Hamada's comment, the ME recommended the following:

"the most important task of the educational authority in Kuwait is to relate education with society's needs and problems. This would need thinking of methods and means that include experiences and educational activities that are relevant to those problems".   (EMU,1994:19)

Such a statement clearly states the ME's recognition for the need to integrate the curriculum with the needs of the pupils, the teachers, the society and the issues of current life. One aspect of this would be to consider how EE might meet those identified needs. Passing statements and promises are only one step towards change, but implementation is what matters.

1.7.2 Teacher training in Kuwait

Extending further the earlier discussion of teacher's needs (Chapter 1, section 1.7.1), Al-Sheikh (1993) stated that teachers in Kuwait are not getting the required level of support to enable them to prepare the youth for the future. As a result, he suggested:

"it is a crucial need for the ME to re-examine the INSET service to comply with the pace of development".
(ibid:16)

Unfortunately, he failed to specify whether he meant development in the field of science, economy, education or technology. On the other hand, Al-Hamad (1997) was more

specific in suggesting that the provision of teacher training on the latest developments in specialist subject areas, educational teaching techniques and educational aids to be crucial elements to be included in setting up Kuwait's educational strategy. Furthermore, a study conducted by Educational Research Unit (ERU), recommended developing and renovating teacher training programs for the middle and secondary schools in order to:

"ensure having qualified teachers capable of implementing creative activities".   (ERU,1997:205)

The ME recognized (ME,1998a) that for teachers to be able to instruct pupils on the skills of self-learning, it is imperative that they are convinced of the efficiency of such methods and that they should practice them personally in their professional life. Moreover, the ME confirmed (ME,1998c) the need for reconsidering the role of the teacher to shift from transmission of knowledge and information to guidance and planning. This, the Ministry stressed, would need revising teacher training programs to comply with contemporary needs.

On the other hand, Aba-Alkhail suggested (ERCC,1997) that teachers should be trained in critical and creative thinking. Al-Mesaileem (ERCC,1997) raised the issue of insufficient funding and called for teacher training to be supported by 'adequate' finance in order to afford the provision of highly qualified experts, trainers and programs.

Clearly, these views of some Kuwaiti scholars indicate a general recognition of major shortcomings of the educational system in Kuwait. In relation to the theme of this thesis, these discussions imply that measures taken to develop school curricula and teacher preparation in Kuwait are not consistent with the rhetoric concerning desirable goals. Specifically, there is no legislation or policy regarding the provision of EE for Kuwaiti teachers or pupils. Such views provide a rationale for developing strategies relative to the delivery of 'effective' EE in middle schools in Kuwait.

1.8 Research on the provision of EE in Kuwait

In August 1990, Iraq invaded Kuwait. The Iraqi aggression resulted in serious environmental damage allocated with the burning of 732 Kuwaiti oil wells out of a total of 1080. Besides the oil field fires, hundreds of crude oil lakes spread over the Kuwaiti desert, and the damaged oil pipelines polluted large coastal areas of neighbouring countries. The oil spills on the Arabian Gulf, the oil lakes on the desert land and the burning of fossil fuels are sufficient causes for concern to warrant EE in Kuwaiti schools. The damage may have had direct as well as long range adverse effects on the issue of the health of the people, the survival of marine and desert species and on the quality of the air, water and soil of the whole region (Al-Hassan,1992, Al-Shatti & Harrington,1991). It is worth noting that natural gas which spurts out during oil excavation is routinely burnt. The sight of hundreds of constantly blazing gas flames has become a significant feature of Kuwait's modern landscape. Hopefully, the day will soon come when the government will view such squandering of a natural energy resource as a crude and unsustainable act. In the meantime, there is some concern by the government about the rapidly growing population and per-capita consumption of resources. The government's action against potential shortages of resources is conducted through the media in an *ad hoc* manner by occasionally campaigning for cutting down the use of electricity and water. There is also a growing sense of concern of a small part of the elite population that the current way of life is unsustainable (Al-Shiekh,1993; Abal-Khail, 1997; Al-Sar'awi,1994).

With particular reference to the Kuwaiti school curriculum there is a substantial body of research evidence (Al-hamad,1993; Al-Sarraf,1993; Abal-Khail, 1997) showing that the present practice of teaching in school is not compatible with the current life issues. However, more specifically, literature survey reveals that research on the status of EE in the Kuwaiti schools is scarce. Thus, while there is general unease about the relevance of the school curriculum to current and future issues, the issues of EE have not yet been addressed seriously in Kuwait.

One library study by Chraq *et al* (1995) is confined to identifying some aspects of EE within the science, social studies and Arabic school textbooks of the primary, middle and secondary levels. Chraqh *et al* have identified a list of environmental aspects. Their study

is built on the proposition that wherever any environmental concept, environmental problem, environmental attitude or environmental behaviour is presented in the school texts, the identified environmental aspect is considered to be included in the curriculum. This is done regardless of the implied ideology, qualification of the teachers, relevance of the concepts to the learner, local or global issues, methodology used, specified or identified for delivery or the question of the availability of educational resources. They affirm their conviction that the actual practice of EE depends on the teacher's qualifications and teaching methodology, but these did not form part of their study, so their proposition that the ME has already met the needs of the in-service teachers might need to be treated with caution. Nevertheless, the study reports significant results. Its statistical analysis shows that, in general, for all the three scholastic stages, all science, social studies and Arabic school curriculum are significantly deficient in all environmental aspects which they have specified. The study indicates that, in general, the science curriculum contains more environmental concepts than the other subjects. More specifically, the study concludes, that the middle school science curriculum contains more environmental aspects than those of the other stages.

The study recommended the following:

- Assessing environmental attitudes and concepts held by in-service teachers in order to prepare a plan for in-service training courses or workshops.
- Infusing all aspects of EE within the science, social studies and Arabic language curricula, for all stages.
- Conducting educational research in order to identify methodologies of teaching EE for all the scholastic stages.
- Training pre-service and in-service teachers on methodologies of teaching EE.   (ibid:32-33)

Significantly, the study strongly recommended that prior to the development of school textbooks, Kuwaiti teachers need to be equipped and trained to teach EE. It called for urgent need of in-service teacher training in EE. However, a significant aspect of the study is that it does not question the validity and reliability of the concepts presented in the texts and does not look at the material in a critical manner. This thesis is considered a direct response to these findings. A detailed audit of the middle school science textbooks and RE is presented in Chapter 5.

1.8.1 *Motivation for undertaking the study*

The drive for conducting this study springs, mainly, from a personal commitment. The researcher was involved with teaching in Kuwaiti schools as a science and physics teacher at middle and secondary schools in Kuwait. Working presently at the ERU, she is closely acquainted with the policy of curriculum planning and school textbook preparation.

The researcher attended an in-service training course on health and EE in September 1997 (see Vol. 2, Appendix 1.4). In spite of the prestige and compliments it received at the time, the researcher was not satisfied with the course's impact. The event stimulated the researcher to question the reliability of the routine procedures in aiding in-service teachers to practice the theoretical concepts and teaching methodologies presented. The training course increased the researcher's desire to introduce innovative teaching methodologies such as, those which she had come across during her study in the UK, to the Kuwaiti context of in-service teachers training, in a workshop form. But it was realized that ideas from different cultural contexts could not simply be 'imported'. This thesis, therefore, is concerned with the way in which EE in the Kuwaiti context may be better understood.

1.9 Statement of the problem

Examination of the major research publications within the field of EE in Kuwait reveal that research has essentially focused on identifying environmental concepts in the Kuwaiti pupil's school textbooks. In general, it seems that assessment of the effect of teacher participation in the currently provided in-service courses on their professional development is not addressed. In particular, research on teacher's perception of EE and on their skills in practising educational strategies for the provision of EE are not reported in the literature. The same could be said in regard to assessing teaching resources and identifying school policies and management in relation to EE.

This thesis is built on the conviction that it is not enough to assume that practising teachers are in a position to handle EE relying on generic professional teaching skills. Therefore, it seeks to survey the current position of teaching and learning EE in Kuwait

and to evaluate it in relation to developments in other countries. At the same time bring teachings of the Islamic tradition to bear upon the existing environmental problems and consider the approaches that could be applicable to the Kuwaiti Islamic context. The study calls for the development of EE strategies within the framework of Islamic ethics.

The research problem therefore is to relate EE developments in the West to the introduction of Islamic environmental ethics into the Kuwaiti context. The strategy adopted includes the introduction of a program of in-service training with respect to environmental issues and teaching methodologies, which is evaluated as a source of evidence on which to base recommendations to guide future developments.

1.9.1 The purpose of the study

The main goal of the study is to contribute to a deeper understanding in relation to developing further the provision of EE to Kuwaiti middle schools. It aims to integrate Islamic ethics with Western EE concepts and teaching methodologies. It examines the prospect of involving Kuwaiti teachers and the young generation, through an interactive form of education, in reflective scepticism and futuristic thinking concerning environmental issues. Underpinning those components is the aim of developing the pupils' capacities for intelligent and responsible action towards the environment. It is not only that students and teachers should consider the deteriorating conditions of the local and the global environment but that they should be given chances to effect changes in their community which could provide improvement for humankind and for the diversity of God's creation.

Broadly, the concern of the study is with the apparent lack of Islamic environmental ethics and coverage of local and global environmental issues within the school curriculum. In particular, it is concerned with the lack of EE within the in-service teacher training programs. Specifically, this thesis attempts to contribute to the means of attaining sustainable development for future generations. It considers the possible means of ensuring that education programs in Kuwait reflect on the meaning and ethic of living

sustainably and it describes a particular intervention to promote this objective. It seeks to accomplish its goal by the promotion of collective practical approaches to curriculum pedagogy.

1.9.2 Research questions

The thesis poses the following questions:

1. What is the status of the provision of EE in Kuwait middle schools?

2. What are the principles of the Islamic doctrine that bear on environmental ethics?

3. What key concepts (e.g. Sustainability) of Western EE relate to Islamic schools?

4. How can teaching be supported (e.g. by INSET) in order to develop EE in Kuwait middle schools?

1.9.3 The aim of the study

The aim of the study is to examine the current provision of EE within the school subject disciplines. It attempts to take a critical stance in investigating the ideology underlying the structure and paradigms of the Kuwait formal system of education in order to assess whether the current forms of education in Kuwait promote sustainable forms of lifestyle. It seeks to consider how EE can best be approached and developed in Kuwaiti middle schools. It examines whether it is possible for EE to be built on the Islamic environmental ethics, which are argued to be compatible with those of ecocentric environmental ethics.

1.9.4 The specific objectives

Specific objectives of this study can be identified as follows:

1. Literature review to identify environmental ethics within Islamic teachings.

2. Literature review to identify the concepts and pedagogy of EE in the West relevant to the Kuwaiti context.

3. Survey the practice of EE in Kuwait middle schools through:

- A questionnaire, addressed to teachers, designed to explore the practice of EE at Kuwait middle schools.

- Literature review of the ME's documents, and audit of some school textbooks.

4. Organize an experimental in-service workshop for Kuwait middle school teachers in the pedagogy of EE.

5. Evaluate the effectiveness of the workshop, as perceived by the participants, and an external observer, in promoting the teachers' awareness and skill for incorporating EE at their schools.

The study is a pioneer in the field of EE in Kuwait; although, as the content of this chapter has indicated, there is a growing awareness at the system level of the educational needs to be addressed. The results of the study could have a number of implications for developers of both school and in-service education curricula. These are identified in Chapters 8 and 9.

Chapter Two

Islamic environmental ethics

2.1   Introduction

> 'Whatever aspect of the Islamic ideology one may like to study, he must first of all go to the roots and look to the fundamental principles. Then, and then alone, he can have a really correct and satisfactory understanding of the ideology and its specific injunctions and a real appreciation of its spirit and nature'.
>
> (Mawdudi, 1988:149)

In order to comprehend the Islamic teachings, it is important to furnish an account of Islamic ethics. This chapter provides a comprehensive introduction to the Islamic philosophy of life. It gives an insight into Man's mission on Earth, his duties and obligations towards himself, nature, and other human beings. It utilizes representative selections of relevant matter of the Qur'an and parts of the traditions of the Prophet Muhammad to illustrate Islam's perspectives, giving brief explanations of some of the Qur'anic passages. The study also makes use of citations, arguments and suggestions of several Muslim and Western scholars, relative to the theme of the study. It also attempts to establish a general Islamic outlook in relation to the ecocentric ideology concerning the reaction to world-wide environmental deterioration. Whenever possible, it points out to the differences and distinctions between the Islamic perspective and Western environmental ethics.

Muslims believe that it is God's will that has planned for all His creation, the animate and the inanimate, placed on Earth to be subservient to and in harmony with Man's physical and spiritual needs and desires. God endowed Man with dignity, power of rational qualities and fortified him with freedom of choice. Man is assigned to be the Lord's 'representative' on Earth. As he is bestowed with such bounties, Man is not left without guidance and responsibilities. Over the centuries the Divine commands were sent piece by piece through his messengers of whom Prophet Muhammad was the last to complete the commandments. The essential aspects of Islam are as an ever-living force. The Divine Book (the Qur'an) informs Man that God is the sole owner of the whole universe; Man is just a 'trustee'. The scheme of life envisioned by Islam covers the entire range of human life revolving around the concept of Unity of the Creator. It is considered as a spiritual

vision of reality. It is a Divine outlook that leads Man towards consciousness of ethical responsibility in his daily conduct. Islam enjoins individual spiritual and moral standards. It relates to all spheres of human life, dealing with a large number of subjects.

The *Shari'ah* is the Divine guidance that can lead towards human welfare and perfection of Mankind on Earth and towards salvation and eternal happiness in the hereafter. In Islam a God-minded Man is one whose outlook on life is permeated with this consciousness; he lives and behaves according to the Divine law. He should give religious connotations to all his actions. He must be aware that he cannot escape from God's sight, and that misuse of 'trust' and neglect to subscribe to the Divine law will have its dire consequence. There will be compensation and retribution according to Man's deeds. Man will reap the reward of his righteousness or else God's wrath will befall for his transgression. The Day of Reckoning is the Day of settlement of all actions, good or evil. Only faith, good deeds and spirituality will benefit. This world is considered the shifting stage from the transient world to the ever-lasting and large world.

The 'Earth' and elements of nature (the mountains, rivers, oceans, trees, animals, the moon, the sun … etc) have preeminent positions in the Qur'an. 'Man' has been positioned in a paramount role as steward responsible to God for the care of the Earth. Islam has due regards to human needs as much as it has consideration for nature. The role of nature for Man is to gain access to God's wisdom; it is an enhancement for Man to ponder His glory. Man is not destined to look upon nature from only the point of view of self-interest; nature is regarded as sacred. Every creature and every inanimate object is praising God in its own way. For a sage, the face of every creature is textured with letters and symbols that reveal God's might. There exist moral and ethical constraints on humankind in dealings with nature and with other fellow humans. According to the Islamic vision, disregard for the spiritual teachings and methods of practice of Islam cause confusion and deterioration of human life.

The present environmental crisis presses upon Muslim scholars to make use of the power of Islamic religion as an ethical as well as an intellectual means of creating citizens with enlightened attitudes towards nature. Muslims need to distinguish between the eternal message of Islam that could lead to prosperity and that of the material secular trends of Western culture that seem to lead humanity to a bleak destiny. The concern of this

chapter is to convey the spiritual insight of the Islamic teachings and present a moral approach as a possible resolution to the present environmental condition facing humankind.

2.2   Introductory ideas about Islam

In this section the main features of Islamic faith are considered in some detail. It furnishes background on Islam, its message, its messenger, its Divine Law, 'The Covenant with God', and the conception of history in Islam. Without this the context of this thesis is not given adequate definition. It is through fully understanding the fundamentals of Islamic teachings that it is possible to see most clearly that dimension through which Islamic theology informs modern secular ideology.

Starting with the concept of religion, Tabatabai (1987:18) speculates that the Arabic word for religion *din* is basically applied to a way, or a pattern of living. He states that neither the believer nor the non-believer is without a path, be it prophetic or man-made. Concerning the concept of the word 'Islam', Ali (1946:757) explains that in Arabic the word *Islam* has wide signification. One implication *Salam*, translated 'Peace', includes a sense of security and permanence, which is according to Islam, not to be found in this world. Other connotations, he adds, imply: soundness, freedom from defects, perfection, preservation, salvation, deliverance, salutation, and accord with those around us. The word Islam (Ahmad,1988; Abdalati,1998; Sardar,1977) literally means peace, submission, commitment and obedience, submission to the Will of God and a willing obedience to His commands. It stands for belief in the Oneness and supremacy of Allah and in all the prophets of God. In general sense, according to Islamic belief Man should give himself up to God; and accept Him *as the* source of guidance. All Islamic principles are based upon and derived from the teachings of the Qur'an and the Traditions of Prophet Mohammad; Muslims should accept whatever he does or commands.

More specifically, Qutb (1982) maintains that Islam urges people to surrender themselves completely to His Divine Will in every detail of their everyday life. In the mean time, in his book *Man and Universe*, Murtaza Mutahheri (1991) forms another connotation stating that there is no doubt that a school, or an ideology, is one of the necessities of social life, but it does not demand submission. It demands faith to be accepted and

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assimilated through free choice. A Muslim is one who has accepted to conform his will to the Divine Will.

Mutahheri et al (1991:70) seem more precise in saying that:

'Islam proposes that religion should be accepted out of free will, coupled with logic and reasoning and not through force and compulsion'.

Islam means knowledge of a specific conception of the cosmos for the intellectual and moral reform of Mankind. It is knowledge of articles of belief and articles of action (ibid:9). However, Qara'ati (1993) as well as Al-Askari (1991) maintain that believers in Islam should not entertain any doubt about the fundamentals of their beliefs and ideology. Muslims do not posses any option but to submit themselves in the matters in which Allah and His Prophet give an order or take a decision. The case is that Man's knowledge (Mutahheri et al,1991; Abdalati,1998) is limited, whereas His knowledge is limitless and He plans on a universal basis. Whatever rules God passes to Man are designed for his benefit and whatever is declared to be unlawful is directly or indirectly harmful for Man, whether this harm is material or moral. The Divine sanction (Chapra,1992:216) makes the rules of behavior absolute and beyond dispute.

Islam has its roots (Nasr,1992; Nasr1994; Abdalati,1998; Sardar,1977) in ancient Judaism and early Christianity as well as in Arab culture. It is a message which contains a doctrine and a method. The prophet is the channel through whom Man received the message. Mutahheri (1991:184) maintains:

'Islam is not a school of philosophy and has not spoken in philosophical terms. It has its own terminology, which is intelligible to all classes in accordance with their particular level of understanding. Its ideology in the form of practical thinking and its world conception in the form of a logical doctrine can easily be deduced from its teachings'.

The principles of the commandments of Islam (Al-Askari,1991; al-Sadr, 1991) are given in the Qur'an; elaboration and practical examples made by the Prophet are in the form of traditions. Therefore, in order to understand Islam, it is necessary for us to refer to both the Qur'an and the *Sunnah* (the Prophet's deeds); they are the sources of the Islamic Law. Ahmad (1988) confirms that the fact that Islam grows from the foundations of the Qur'an and *sunnah* is a unique characteristic of Islam.

Islam is based on a perfect conception of the universe; which is monotheistic (Nasr,1982; Mutahheri et al,1991; Qara'ati,1993). All Islamic schools were based on the doctrine of the One who is both Absolute and Infinite. Mutahheri (1991:56) provides the meaning of monotheistic conception stating that:

'a monotheistic conception means the realization of the fact that the world has come out of a wise will and that its system is founded on mercy, munificence and all that is good. It means that the world is *from Allah* and returns to *Allah*'.

Islam would undervalue life on Earth (Abdalati,1998) only relative to life in the hereafter. The Islamic concept maintains that religion is not only a spiritual and intellectual necessity but also a social and universal need. It has based its philosophy on the spiritual training of Mankind (Mutahheri,1993). Human action (Chapra,1988:174) in every field, including the economic, is spiritual provided it is in harmony with the goals and values of Islam. Islamic ideology (Al-Sadr,1993:98) envelops in its outlook: life, universe, politics, economics and ethics. Islam is an ideology (Ahmad,1988) and a complete way of life. It integrates Man with God, awakens in him a new moral consciousness and invites him to deal with all the problems of life - individual and social, economic and political, national and international - in accord with his commitment to God. Islam brings to bear harmony and equilibrium by the integration of the material with the spiritual. It makes the whole of the domain of existence spiritual and religious. In Islam (Mutahheri,1991) attention has been paid to all aspects of human needs, whether they are carnal or spiritual, intellectual or sentimental, individualistic or social and whether they pertain to this world or the next. Islam (Ba-Yunus,1981) focuses on both the micro and macro processes of human society so that the personal worship of God is not supposed to be an end in itself. Its end product is the establishment of the Islamic state, which others are invited to join. All Islamic teachings (al-Sadr,1993) have a moral aspect. Islam gives many moral directions in the various fields of life.

Man (Nasr,1994) should not be compartmentalized either in his thoughts or actions. Islam encompasses the whole of Man's nature. Every action, even the manner of walking and eating, should manifest a spiritual norm that exists in his mind and heart. Qutb (1988) elaborates saying that Islam is a system of comprehensive human justice embracing all sides and basic factors of human life. It looks at Man as forming a unity whose spiritual aspirations cannot be separated from his bodily desires, and whose spiritual needs cannot

be divorced from his material needs. Moreover, Qutb (1982) states that Islam furnishes Man with a guidebook that will guide him through his entire journey on Earth, into the world of eternity. He explains that although it is true that a traveler, having a guidebook to guide him throughout his journey, toils in the same way as one with no aim and no guidebook, but the first knows that every effort he makes will bring him nearer to his aim and destination. The other travels in restlessness, confusion and the feeling of being lost. The five pillars of Islam (Ahmad,1988; Abdalati,1998) are: faith in Oneness of God, prayer, fasting, charity and pilgrimage.

Islam is a programme of life decreed from Allah upon Mankind and is conformed to the rules of nature. From the point of view of the Qur'an, there has been only one Divine religion from the beginning of human race. Islam is considered superior to all other systems because of its eternal validity; it is never out of date. Every aspect of Islam rotates about the doctrine of Unity, for God 'The Creator' is one. Being based on Unity, it realizes the profound oneness of all existence. Therefore, it has envisaged a total way of life which excludes nothing. It encompasses the whole of Man's life, in which case it takes into account the whole of Man's nature, prescribes for him a number of duties concerning his relationship with his fellowmen, regulates his conduct and utility of God's bounties under his guardianship. In all, it addresses itself to the human condition on Earth as well as the human destiny in the hereafter.

Detailed treatment of Islam: the Qura'n (the message of Islam), its messenger (the holy Prophet, Mohammed), its Divine Law (the Shari'ah) are presented in Vol. 2 (Appendix 2.1).

2.2.1 Man's Covenant with God

In Islam everything belongs to God. Man has been given an honourable and dignified status above all God's Creation. God has endowed Man with intelligence, dignity and the power of making choices; everything is made subservient to him. In spite of being free, Man's role on Earth is to act as agent and representative of God towards other creation. This is considered a sacred mission for Man to fulfill. Man being in charge of save-guarding God's creation has not been left without a delegation for undertaking such grave commitment. A contractual obligation was made between Man and God before his placement on Earth in which he has testified to abide to the Divine tenets. "The

Covenant" is a major aspect of Islamic doctrine; it has a prominent significance concerning the social, economic, political and environmental aspects of human life. It is worth to confirm that this covenant does not only concern those following the Islamic faith because it was not made between God and a particular race. Subsumed within the 'covenant' is the concept of 'trust'; the trust of responsibility to rule according to the S*hari'ah*. Certainly, under the impact of the Western culture, practices of the contemporary Muslim nations reveal that the concept has been abandoned by many Muslims. Whereas the Western ecocentrics perspective concerning the position of Man on Earth and the net-worked connection of all creation is evident from Orr's (1992:134) view:

'a commitment to life requires a thorough knowledge of the natural world based on the recognition that we are only a part of a larger whole'.

Bear and Slaughter (1994:49) imply a similar meaning:

'any approach to knowledge, to our planet, to the cosmos and ourselves which fails to show that we are connected to and responsible for the whole is to be condemned, for it will create disorder, division, and ultimately destruction'.

In Islam, resources are not only gifts, and private property is not an absolute right of Man, they are considered as 'trust'. Therefore, ownership amounts to 'stewardship'. Islam does not permit the use of resources for morally prohibited actions. In return to all the blessings that God has given Man, he is required to pay tribute to God and show his gratitude by being a righteous servant enforcing the Lord's Laws.

The concept of 'trust' is realized by some Western environmentalists. Orr (1994:137) views that:

'the Earth is given to humankind as a 'trust' ..... we cannot forsake the duties of 'stewardship' without breaking another trust with those who preceded us and with those who will follow'.

From the perspective of the Islamic ideology of life, this is considered a narrow perspective. The Western perspective does not explain how and by whom Man is assigned to be as a 'steward', and how has the 'duties' between Man and those who preceded him and those who will follow are being entrusted. Islam identifies the source being the 'Supreme God', and the 'trust' being part of a Man-God 'Covenant'.

In the Islamic faith, the present life is a bridge and a short journey to prepare oneself towards a fulfilling, rewarding and eternal life in the hereafter. Every Man is pledged for his own deeds on earthly life; the real abode is in the after life. Islam promises the believers that they will be rewarded and warns the wrong doers of penalty for 'breaking the covenant', and misuse of the 'trust'. In the Judgement Day, Man will have to give an account of his conduct. The full argument around the concept of the 'Covenant' in Islam is seen in Vol. 2 (Appendix 2.2).

2.2.2 The Islamic conception of history

The Islamic conception of history is a major aspect of theology. The Qur'an points towards history as a punishment of breaking the 'covenant' with Allah. As a result of their wrong doing, God has eradicated those vicious and tyrannical communities of the past. The theme is for Muslims to be cognizant of such narration and to analyze the narrated cases and deduce lessons from the past in order to avoid God's curse that would imply collective mischief. This aspect of the norms of history makes it a useful source of knowledge as for Man to deduce laws and general rules that could help him control his future. Each nation is responsible for what it does. It seems that the ecocentrics (see Chapter 3, section 3.3) have come to a similar perspective, as is evident from Stuart Udall's (1963) quotation:

'history tells us that earlier civilizations have declined because they did not learn to live in harmony with the land.... It is ironic that today the conservation movement finds itself turning back to ancient Indian land ideas, that we are not outside of nature, but of it'.   (Cited in Devall & Session, 1985:59)

Such 'newly developed ethics', from the Western perspective, is argued not to be found only in ancient Indian ideas, the Islamic teachings and traditions hold such ethics from over one thousand and four hundred years ago. The difference is that from the Islamic perspective, it is the disobedience of those ancient people to 'Divine Laws' that led to their destruction. A full argument of this theme is provided in Vol. 2 (Appendix 2.3).

2.3   The inter-connection between Man and Earth in Islam

In Islam, Man is not alienated from the Earth. The issue of the intimate connection between Man and Earth's substance is recurrently stated in passages throughout the

Qur'an. Earth was created prior to Man's creation; God has supplied it with all the bounties necessary for Man's existence and comfort. The Qur'an reminds Man to acknowledge his oneness with the Earth. Man's body was formed from wet clay moulded into shape. Thus fashioned, it was breathed on by the spirit of God, which gave Man a superiority over the rest of Creation and his dignity is raised above that of the highest creatures.

Ali's (1949) commentary on the following Qur'anic verse is that the verse shows that the material world around us was created by God before He fashioned Man and breathed of His soul into him (ibid:1232).

{Behold, the Lord said to the angels: I am about to create Man from clay: When I have fashioned him (In due proportion) and breathed into him of My spirit, fall ye down in obeisance unto him}.
(Ssad 38:71-72)

"إذ قال ربك للملائكة إني خالق بشرا من طين، فإذا سويته ونفخت فيه من روحي فقعوا له ساجدين" .

The Qur'anic verses (Ghafer 40:67; Fater 35:11; Al-Rahman 14:55) are examples which stress the material of the mould of Man's body; others also are:

{Among His signs is this, that He created you from dust}.   (al-Room 30:20)

"ومن آياته أن خلقكم من تراب".

{He Who has Created Man from water}.   (al Furqan 25:54)

"وهو الذي خلق من الماء بشرا".

God has entrusted the task of reclaiming the land to human beings. He has rendered the Earth and made it tractable to Man to enable him to subjugate the Earth to his needs and sustenance. Various contexts throughout the Qur'an assert this concept:

{It is He Who has made the Earth manageable for you, so traverse ye through its tracts and enjoy of the sustenance which He furnishes: but Unto Him is the Resurrection}.   (al Mulk 67:15)

"هو الذي جعل لكم الأرض ذلولا فامشوا في مناكبها وكلوا من رزقه وإليه النشور".

The following verse displays that Man is created from the substances of the Earth and upon his death his body is decomposed to the same substances. In the Judgment Day God is going to bring him back from Earth to life again, to be punished or rewarded according to his conduct.

{From the (Earth) did We Create you, and into it shall We return you, and from it shall We bring you out once again}.   (Taha 20:55)

"منها خلقناكم وفيها نعيدكم ومنها نخرجكم تارة أخرى".

The Qur'an informs Man that he should realize his sacred bondage with Earth. Islam sees the human species as an integral part of nature. Man is a part of a larger spectrum of God's creation in which he exists. Moreover, this Islamic view conceives the naturalness of humans in living in harmony with nature, which is the substance of their existence. The integration of Man with Earth leads Man to sense the necessity of co-existence and alliance with God's creation. During daily prayers - which is one pillar of Islam - and in the prostrating position Muslim's both knees, palms, toes of both feet, and the forehead should touch the ground. It is a daily reminder for Man of the inevitable alliance.

2.3.1   The dual nature of Man

Several Qur'anic verses such as (Al Hijr 15:29; Al Muminun 23:12-14) define human nature, indicating that Man is both soul and body. The soul rational and the body animal; he is at once a physical being and a spirit. Other verses (Al Araf 7:179; Al Furqan 25:44; Muhammad 47:12) translate as follows: Man as unique, not to be compared with an animal. But, when he regresses, and his soul is blinded, he is not only compared with an animal but is worse and degraded.

Al-Faruqi (1981:11) recognizes that:

'the human phenomenon does not consist of 'natural' elements exclusively. Elements of a different order of morality and spirit, enter into and determine the human condition to a pre-eminent degree'.

Tabatabai (1987) points out the difference between the animal and plant kingdoms and Man, saying that the former react according to their inherent knowledge or instinct, while Man, also possessing an inherent knowledge, is equipped with an intellect and the capacity to use or recognize wisdom. The transgressions and violations of the law, in effect, all result from those who use their intellect 'incorrectly'.

Qutb (1982) conveys the same meaning adding that, if Man loses the spiritual guidance attained through awareness, sensibility and consciousness, he would visit destruction upon himself, thus becoming more misguided than an animal. Qutb asserts that the

Qur'an devotes the largest part of the discourse to Man and his servitude. He classifies the issue of Man that is dealt with in the Qur'an according to the following aspects:

- Who is Man? what does he consists of? what are his characteristics and the limits of his energy?
- What is his role, his function on Earth, the end of his existence?
- What is his fate?
- What is the method according to which his life will proceed in this world and the next?

(Qutb,1982:18)

Qutb maintains that all Mankind is subject to the pressure of these questions and they are apt to provide questions for themselves. The answers will outline the path of life for them. Worldly achievements do not shape Man's life; only values shape Man's life and these are dependent upon the kind of answers Man provides to the pressing questions posed by innate human nature.

Mutahheri (1993) specifies that through total submission and complete subservience to Allah, Man acquires self-discipline and gets the ability to control his passions and animal propensities and thus becomes master of himself. By marching on the path of virtue and obedience to Allah, he can advance forward from the animal stage to a position above that of angels. Al-Sadr (1991) adds that Man's clay (origin) draws him to the Earth and calls him to the Earth; it calls him to base desires, material tendencies and all that is low. While the breath of divine spirit, breathed into him, calls him to high and noble qualities. Divine spirit, al-Sadr remarks, invites Man to Allah's endless knowledge, His endless power, His endless justice, generosity, and His other attributes and qualities. Although both these two tendencies are always present, one of them is usually predominant according to the actual condition of society and the level of thinking and education of the individual concerned. Al-Sadr views that Man should regard the Divine attributes as a model, as a practical guide and as milestones on his route to the Almighty. Mutahheri (1993:74) adds that the being human of Man is not confined to his body. Man has an interior and a soul, which constitutes the reality of humanity. The soul and the body have reciprocal influence on each other.

Man is of dual composition, one of Earthly origin, which constitutes his body, the other of Divine origin, which constitutes his soul. Out of all His creation, God has equipped Man with intellectual faculties and freedom of will. Divine guidance was sent to Man to

provide him with the right vision to choose right from wrong. The criteria, which determine a Man's human identity, express the degree of his attachment to the ethical principles and moral values prescribed in the *Shari'ah*, of which his course of action is determined.

The dualistic conception of the human nature as body and soul pertains to the Islamic Divine outlook of the universe (which will be discussed in a later section 2.4.5). It is also associated with the concept of the 'trust' that is under Man's custody (see, Vol. 2, Appendix 2.2). This perspective implies that all the material aspects of this world, including Man's body, are apt to disintegrate and perish on the last day of human history. All will return to its soul owner, God. It is 'the soul' of Man that will abide eternally, either in hell or Heaven; the state of the individual in the next world would depend on his deeds on this earthly world. Islam does not regard Man's material achievement as the supreme goal of Man's existence. The ultimate goal is to develop Man's soul in order to pave its way to abide in ever-lasting happiness. Such a conception does not exist within the ecocentric ideology.

2.3.2 Knowledge, faith and Man's deeds

An insight into the Islamic perception of knowledge is essential for the integration of the Islamic view on the theme of this study, which concerns the promotion of EE in Kuwaiti schools. Islam exhorts in Man the use of his intellect and awakens his faculty of reasoning. With reference to the arguments of several Muslim scholars, and the standpoint of the Qur'an and the *Sunnah*, this section addresses the attitude of Islam concerning the question of knowledge in connection with faith and good deeds. It highlights the significance of knowledge in Islam. It compares and contrasts the Islamic view to the Western view of knowledge.

Faith in the Oneness of God is a basic Islamic principle. God in Islam is recognized as the 'Truth'. Islam conceives that the only 'true' and commendable faith is that which is based on reasoning and the 'correct' mode of thinking.

Al-Sadr (1993), stressing the importance of faith in a Muslim's life, states that:

'if Man is left alone his material impulses that automatically make their way will prevail over his moral impulses which will wither away and remain undeveloped. It is religion that teaches him to obey the Divine command. It trains him to respect moral values and ignore his personal gains inconsistent with them. It does not eliminate self-love from human nature. On the other hand it moulds human nature in such a way that the upholding of moral values becomes a demand of self-love and Man begins to take pleasure in making efforts in that direction'.   (ibid:95)

Mutahheri (1991:16) indicates that:

'today there is no intellectual denying that Man needs some sort of faith. Even if that faith is not religious, it is bound to be ultra-scientific'.

Although, Mutahheri classifies the Western philosopher, Bertrand Russell as having a materialistic outlook, he quotes him as admitting that:

'the work that merely aims at earning income shall not produce good results. For this purpose one should adopt a profession that implants in the individual a faith, a purpose and a goal'.   (ibid:17)

Mutahheri et al (1991:14) explain the Islamic view of knowledge in relation to the study of the universe and nature stating that:

'faith in Islam teaches that limitless knowledge is the source of this cosmos which is like a grand book penned by an erudite scholar. Every page of it, nay every line and every word of it, contains a glaring 'truth' which stimulates us to further study and contemplation'.

From the point of view of the Islamic philosophy, God has given Man mind and freedom of will. Man acquiesces to the 'truth' only if he is convinced of it. On account of his choice and conduct he defines his destiny. Freedom of choice (Masri,1992; Beheshti & Bahanar,1993, Mutahheri,1991) is the main distinction between Man and the animal. It is because of this freedom of choice that Man is considered to be higher in rank than the other animals. Masri (1992) states that Animals too, possess minds and can distinguish between what is good or bad. However, their brains are not developed enough to distinguish between virtue and sin. Man is the only species who has the brain to understand the difference between right and wrong in the moral sense and who can use the power of his mind to choose between the two. Masri maintains that our freedom of choice, based on knowledge and intelligence, puts on us the added responsibility of caring for the rest of God's creation and for those very resources of nature which help all kinds of life on Earth to stay alive.

Al-Faruqi (1982) maintains that Islam has taught Man that God has endowed him with his senses, his understanding, memory and reason. His standpoint is not that of skepticism, but one of certainty and conviction arising from a free and critical application of his faculties to the data at hand. The position of the Muslim on the question of the possibility of human knowledge makes of him a free spirit and a free seeker. The Qur'an never asks Man to acknowledge as 'true' that which contradicts reason. Whatever he wishes to regard as true, whatever argument he wishes to accept as 'rational' and convincing, is his own decision; however, the Qur'an declares him and his faculties responsible for the outcome. Al-Attas (1979:23) asserts that:

'Man is subject to disobedience, injustice and ignorance. In the meantime, he has attributes reflecting those of his Creator. He has the potentiality to contain self-guidance and wisdom, and he has the power and capacity to do justice to him self'.

Ali (1949) maintains that Allah's plan for Man is to use his human will to cooperate in understanding Him and His relation to Man. The ecocentrics also believe that through freedom of will Man has the potential of wrong doing. Once again, it seems that Western thinkers are not aware of the Islamic ideology, as the following quotation by a Gaianist, Sahtouris (1989) reveals:

'human beings, unlike other animals have freedom of choice and self-consciousness. This, brings with it the possibility of destructive as well as beneficial behavior. Only in the present age do we have anything like Gaian knowledge about human affairs and our plan. (Cited in: Burrows et al, 1991:225-226)

Initially, it could be argued that no explanation is given as of how and why humans have gained such freedom apart from all other creatures. Whereas Islamic faith, as argued in this section as well as in Vol. 2 (Appendix 2.2), provides that same concept with a solid answer and comprehensive perspective in relation to such thought.

Place of knowledge and scientific reasoning in Islamic faith

In Islam, knowledge along with faith are equally crucial for human salvation; there is no contradiction between them; both supplement each other. Faith without good deeds or action, in Islam, is as insufficient as action without faith. Initially, Islam lays strong stress on writing, reading and the pen. In fact, the first verse of the Qur'an revealed to the Prophet began with the word 'read'. It ordered him to recite or rehears.

{Read in the name of your Lord and Cherisher, ... He Who taught the use of the pen.}

(Al Alaq 96:1,4)

"إقرأ باسم ربك الذي خلق ...الذي علم بالقلم".

Abdalati (1998:54) states that:

'Man's highest virtues are piety and knowledge, that when such knowledge is acquired and invested according to the Divine guidance, Man's blissful destiny will be assured and his life be serene'.

Several Qur'anic verses such as (Al Baqara 2:31-32; Al Isra 17:70) convey that God granted intellectual capacity to Man far ahead of any other being as well as angels. Yet, his knowledge (Abdalati,1998) is limited, and his thinking is based on individual or personal consideration; whereas, God's knowledge is limitless and He plans on a universal basis. It is knowledge that qualifies Man to be Allah's 'vicegerent' and entitles him to command the respect and allegiance even of the angels. This is confirmed in the following verse:

{And He taught Adam the names of all things

(Al-Baqara 2:31)

"وعلم آدم الأسماء كلها".

Al-Attas (1979) explains that what is meant by 'the names', is the knowledge of everything. Man is given knowledge about God, His Absolute Oneness; and that God is the 'true' Lord. Such Knowledge has bound Man in a 'Covenant' determining his purpose and attitude and action with respect to himself and to God. The laws of nature (Sharifi,1979; al-Sadr,1991) have been put forward in the form of conditional propositions, thus enabling Man to see things in the light, not in darkness. In the light of the laws of nature he can determine his course of action in regard to the world.

Al-Mahdi (1982:109) states that:

'the injunctions of the *Shari'ah* agree with reason because they make reason a precondition for their application, thereby exempting children and insane adults'.

In relation to science and faith Brohi (1979) adds that Islam enjoins observation of facts and recommends its votaries to reflect upon signs in Nature, in their inner self and in history. In this connection, al-Sadr (1991) as well as Mutahheri (1991) point out the Islamic conviction that while science enables Man to know the world, it is unable to solve Man's problems unless and until it runs parallel to 'the course of guidance'; otherwise, it

only adds problems and aggravates them. Through faith, the outcome of self-consciousness, Man becomes aware of his reality.

Qara'ati (1993) maintains that it is through 'wisdom' that worship of Allah is best accomplished. Islam lays great emphasis on knowledge and intellect so much so that it considers intellect as an inner prophet and as such determines rewards and punishments on the basis of intellect. Qara'ati explains that whenever there appears to be some difference between Divine revelations and the human knowledge the actual position is that knowledge is not 'real' knowledge but it is a theory or an ideology and has no connection with revelation, because 'true' knowledge is never opposed to the Divine revelation. On the same line, Naseef (1981) asserts that Allah Has repeatedly told Man to study the universe, learn the essence of creation and acquire authority. At the same time Allah has forbidden us to misuse such knowledge. He has warned us that by doing so Man brings upon himself suffering and retribution. Whenever his findings and analysis come into conflict with fundamental assumptions stated in the Qur'an, Man should realize that he has not as yet found complete data. Naseef maintains that, Islam makes us realize that our knowledge is not complete nor will it ever be possible for any Man or any creature to have complete knowledge. As such Qutb (1979:51) makes clear that:

'Islam argues that religion and science exist side by side within Man's innate nature. There is no contradiction between these two innate tendencies. Religion helps Man to commit wholly to the divine word of God and address Him in awe through duties of worship, while science leads Man to the acquisition of knowledge of God's names and the characteristics and actions in this universe. This will eventually culminate in more God-fearing and God-worshipping'.

In an explicit fashion, Mutahheri (1991) emphasizes the significance of both knowledge and faith in Man's conception and behaviour. He considers that the evolutionary march of Man begins from his animality and proceeds towards the highest point of humanity. He explains that in the beginning of his existence Man is no more than a material organism. By nature Man is an animal. The animality of Man is the nest in which his humanity develops and matures. Humanity is his acquired quality. Human spirit is born in the lap of the human body and then attains independence. With a basic evolutionary movement Man changes into a spiritual substance. In other words, human talents of Man are to be nurtured and promoted gradually in the light of faith. Mutahheri establishes that the performance of this task is possible, only if the sanctity and importance of certain values are imbedded in the soul of Man. He confirms that the Man in Islam is so idealistic that he

often gives more importance to his creed and ideology than to any other value. He may consider service to others to be of more consequence than his own welfare. He feels sympathy with others and shares their joy and grief. Thus, Mutahheri views that not having an ideal and faith, Man cannot experience a healthy life nor can he render a fruitful service to humanity and human culture. Religious belief not only prescribes for Man a number of duties irrespective of his natural inclinations, but also completely changes his view about the world. The dry, cold, mechanical and material world is transformed into a living and conscious world.

Mutahheri goes on to maintain that knowledge and faith are the two basic parts of the humanity of Man. Man's knowledge does not remain confined to any particular place or time. Mutahheri indicates that historical experience has shown that separation between knowledge and faith has caused irreparable losses, and that faith without knowledge ends in stagnation and blind prejudice, and can achieve no purpose. Where there is no knowledge, the faith of the believer becomes a tool in the hands of the clever hypocrite. Where there has been knowledge (according to Mutahheri) but faith has been lacking, as in the case of some modern societies, the entire force of knowledge has been used to serve the cause of self-aggrandizement, amassing wealth, and satisfying the lust of power, exploitation, subjugation and craftiness (Mutahheri,1991).

In order to invite people to embrace the message of Islam, it is a basic stance in Islam to call its opponents into debates and peaceful methods of persuasion. It believes in the power of criticism through arguments and rational persuasion. Al-Sadr (1991) as well as Qara'ati (1993) maintain that considering other schools of thought, it is the duty of Muslims to choose a line of solid arguments. They have to know Islamic views vis-a-vis other views and theories which have emerged in different fields of life. On the same line Hossain (1979) remarks that Islam created an unbounded enthusiasm for acquiring knowledge amongst its followers. Islam makes it incumbent upon the believer to acquire knowledge and enjoins him to observe and to think for himself. It urges Muslims to assuage the miseries of Mankind, bidding them to observe the phenomena of nature, the alteration of day and night, the properties of Earth, air, fire and water, the mysteries of birth and death, growth and decay and the like. Thus, the study of the Qur'an led them to the use of the inductive method which paved the way to most modern discoveries. Hossain argues that the cause of the 'sudden outburst on intellectual maturity' of the

Arabs was due to the revolution caused by Islam in the whole outlook of the people. Thus, Muslims made invaluable contributions in almost all branches of human knowledge.

An idea of the immense incentive provided in the Qur'an for the cultivation of learning and reasoning can be formed from the constant exhortations in it to believers to know, to see, to observe, to think, to ponder and to deduce. The Qur'an praises those believers who seek knowledge. It also prompts them to look at the phenomena of this world within themselves and the law and order of the universe in a contemplative way. In this connection the following verses are some examples:

{Those truly fear Allah, among His servants, who have knowledge}. (Fater 35:28)

" إنما يخشى الله من عباده العلماء ".

{Does not Man regard how that we created him of a sperm-drop?}. (Ya Sin 36:77)

" أولم يرى الإنسان أنا خلقناه من نطفة ".

{Are those equal, those who know and those who do not know? It is those who are endued with understanding that receive admonition}. (Al Zumar 39:9)

" قل هل يستوي اللذين يعلمون واللذين لايعلمون إنما يذكر أولوا الألباب ".

{Thus do We explain the signs by various symbols. ... and that We may make the matter clear to those who know}. (Al Anam 6:105)

"وكذلك نصرف الآيات .. ولنبينه لقوم يعلمون ".

{And a sign for them is the night; We strip it of the day and behold they are in darkness. And the sun runs to a fixed resting-place; that is the ordering of the All-mighty, the All-knowing. And the moon - We have measured for it mansions (to traverse), till it returns like as aged palm-bough. It behoves not the sun to overtake the moon, neither does the night outstrip the day, each swims along in its own orbit.}. (Ya SIn 36:37-40)

"وآية لهم الليل نسلخ منه النهار فإذا هم مظلمـــون. والشمس تجري لمستقر لها ذلك تقدير العزيز العليم والقمر قدرناه منازل حتى عاد كالعرجون القديم لا الشمس ينبغي لها أن تدرك القمر ولا الليل سابق النهار وكل في فلك يسبحون".

Ali (1949) comments that the Arabic words for 'teach' and 'knowledge' stem from the same root. He stresses that it is impossible to produce in a translation the complete orchestral harmony of the Arabic words for 'read', 'teach', 'pen', (which imply reading, writing, study, research, books), as well as the word for 'knowledge' (including science, self-knowledge, spiritual understanding).

Nasr (1982) states that during the periods of Islamic history when Muslims produced world famous scientists and thinkers, there were great debates between various Islamic schools of philosophy and thought such as those which were carried out between

Avicena, al-Biruni, al-Ghazali and Ibn Rushd. Various perspectives were adopted, without these debates harming Islam, since they were all within the world-view of the Islamic tradition. There was always the unifying principle of *al-tawhid,* (the Oneness and supremacy of Allah), and a sense of hierarchy which allowed for intellectual figures to appear, from time to time. They were at once philosophers and metaphysicians of the gnostic school who realized the inner unity of these perspectives within their own being. Nasr believes that among the contending philosophical schools in the modern world such unifying principles are missing.

Al-Faruqi (1982) maintains that Muslim peers paid respect and admiration to the men of knowledge in proportion to their piety, which is tantamount to wisdom and reasonableness. Whenever some Muslims, being over-excited by Islam's affirmation of reason and knowledge, had attempted to raise reason above revelation and sought to give it dominion over all knowledge, the majority's answer was not one of total repudiation of the claim, but the elaboration of a critical epistemology. Wherein reason and revelation being equivalent, no contradiction or disparity between them could be ultimate. The net result of this critical stance was to push, even higher, the Muslim's quest for the meaning of revelation and of empirical nature. The following extracts of the Qura'n remind Man:

{And that those on whom knowledge has been bestowed may learn that the (Qur'an) is the Truth from thy Lord, and that they may believe therin}. (Al Hajj 22:54)

" وليعلم اللذين أوتوا العلم أنه الحق من ربك فيؤمنوا به ".

{And he to whom wisdom is granted receiveth indeed a benefit over flowing; but none will grasp the message but men of understanding}. (Al Baqarah 2:269)

" ومن يؤتى الحكمة فقد أوتي خيرا كثيرا وما يذكر إلا أولوا الألباب ".

Moreover, there are hundreds of sayings of the Prophet in which the supreme value of knowledge is taught. He not only inculcated the necessity and value of knowledge but also urged the cultivation of the scientific spirit of reasoning, inquiry and investigation. Some of which are the following:

(He who leaves his home in search of knowledge, walks in the path of Allah, Lo! The angels offer their wings to the seekers of knowledge).

(Being in a circle of learned men is better than prostrating in prayer thousand times, visiting thousand patients or attending thousand funerals. It was then said, O. Apostle of Allah, is it better than reading the Qur'an? to which he replied, what good, though, is the Qur'an except through knowledge?).

(An hour's contemplation and study of God's creation is better than a year of adoration).

(It is better that a Man should secure a good education for his children than he should leave a treasure of gold and silver for them).

(All cited in Hossain,1979:94-95)

(Seeking knowledge is the duty of every Muslim, man or woman).

(Continue to seek knowledge from the cradle to the grave).

(Cited in Mutahheri,1991:59)

(We the Prophets do not leave gold, silver, or property as our inheritance. Only knowledge and wisdom are our legacy). (Cited in Al-Sadr,1991:204)

In relation to Man's act of exploiting Earth's resources, Qutb (1982:13) maintains the Islamic perspective:

'Islam supposes that the God gifted exploitation of some resources requires Man to know and study the properties of the matter and the ways by which God runs the universe. When Man utilizes his intellectual or muscular energies to exploit the God-given physical energy he is not actually involved in a conflict with nature or subduing it to his will. He is, as Islam depicts him, exploiting what God has created for him'.

A Muslim has the freedom to proclaim his views so long as they do not violate the basic ideology of monotheism. He is free to act and use his possessions within the frame of the *Shari'ah*. As a basis of firm faith and belief in His Oneness, the Qur'an repeatedly confirms the necessity of obtaining solid ground of knowledge of all the signs of existence of God, embedded in all His creation. Islam calls upon people to think and to draw conclusions. It regards thinking as part of worship. The copious quotations from the Qur'an illustrate that there is no conflict between faith and Man's knowledge and the use of this knowledge for the good of humanity.

Classification of knowledge from the perspective of Muslim scholars

From an Islamic perspective all knowledge comes from God. Islam assigns a paramount role to knowledge. This section refers to some classifications of 'knowledge' from the perspective of Muslim scholars. Al-Attas (1979) holds that knowledge is of two kinds. He maintains that The Qur'an is *the* knowledge *par excellence*; The term *ilm* (knowledge) has been applied in Islam to encompass the totality of life - the spiritual, intellectual, religious, cultural, individual and social. In the same manner that Man is of dual nature, from the Islamic perspective (see section 2.3.1), so is knowledge is of two kinds. The initial stage of that first knowledge is the food and life for the soul and the

other is provision with which Man might equip himself in the world in his pursuit of pragmatic ends. The Qur'an, the *sunnah*, and the *Shari'ah* are the essential elements of the first kind of knowledge. Al-Attas states that Muslims must have knowledge of the pre-requisites. They have to practice the knowledge based in deeds and works of service to God. Every Man of Islam must understand the basic essentials of Islam. It refers to knowledge of objective truths necessary for Man's guidance. It unveils the mystery of Being and Existence and reveals the true relationship between Man's self and his Lord.

As regards the second knowledge -spiritual knowledge and wisdom, Al-Attas maintains that such knowledge, when experienced in true emulation of the *Shari'ah*, gives insight into knowledge of God. It is given by God to Man through speculation and rational effort of inquiry based on his experience of the sensible and intelligible. It refers to knowledge of the sciences. It is acquired through experience, observation and research. It is discursive and deductive and it refers to objects of pragmatic value. Islam makes the attainment of knowledge of the prerequisites the basis for the second kind, the first obligatory to all Muslims, and the other obligatory to some Muslims. Both kinds of knowledge have to be acquired through conscious *action*, for there is no useful knowledge without action resulting from it; and there is no worthwhile action without knowledge. Al-Attas indicates that it is perceived that there is a limit for Man to the first kind of knowledge, whereas no limit obtains in the second kind, so that the possibility of perpetual wandering spurred on by intellectual deception and self-delusion in constant doubt and curiosity is always real.

Al-Attas goes on to differentiate between Muslim and Western definition of knowledge. He states that the West admits the second kind of knowledge as the only valid knowledge. It has defined knowledge in terms of the effort of science as control of nature and society. Islam, Al-Attas maintains, is at variance with Western civilization around the concept of knowledge. For Islam (a) knowledge includes faith and belief; (b) the purpose for seeking knowledge is to inculcate goodness or justice in Man as Man and individual self and not merely in Man as citizen or integral part of society. It is Man's value as real Man, as the dweller in his self's city, as citizen in his own microcosmic kingdom, as spirit, rather than his value as a physical entity, measured in terms of the pragmatic or utilitarian sense, of his usefulness to state, society or to the world. Al-Attas holds that for Western civilization, the purpose of seeking knowledge from the lower to the higher levels is, to

produce in the seeker a good citizen. Islam, however, differs in this in that the purpose of seeking knowledge is to produce in the seeker a good Man. Al-Attas explains that the good Man, will no doubt also be a good citizen, but the good citizen will not necessarily be a good Man.

Al-Attas envisages that the knowledge that is now systematically disseminated throughout the world is not necessarily *true* knowledge, but that which is imbued with the character and personality of Western culture and civilization. That is because Western civilization does not formulate its vision of 'truth' and 'reality' upon revealed knowledge and religious belief, but rather upon cultural tradition reinforced by philosophical premises pertaining mainly to secular life centered upon Man as physical entity and rational animal. In Al-Attas's view, there can be no certainty in philosophical speculations, in Western culture, in the sense of religious certainty that is based on revealed knowledge as understood and experienced in Islam. Because of this the knowledge and values that project the world-view and direct the life of such civilization are subject to constant review and change. Al-Attas elaborates saying that religion in the sense Muslims mean, as *din,* has never really taken root in Western civilization due to its excessive and misguided love of the world and secular life and of Man and preoccupation with Man's secular destiny. Absolute values are denied and relative values affirmed.

Hossain (1979) comments that according to al-Ghazali, perfection of the soul consists in knowledge, albeit intuitive knowledge. Knowledge of the sciences dealing with things that God has made is regarded by al-Ghazali as a necessary prelude to the knowledge of God Himself. Hossain indicates that traditionally Islamic learning distinguishes between two classes: the sciences which are connected with body or matter and those which are connected with spirit and ideas. It is also classified in respect of acquisition into the sciences which are connected with the Qur'an and those which the Muslims learnt from foreign people.

Donaldson (1953) provides an overview of al-Gazali's meditation on Man's relation to God and to the world about him. Donaldson maintains that al-Gazali has outlined what we might describe as a moral cosmology. First, al-Gazali considers that there is the physical world that is manifest to the senses. This material world may not be regarded as having a positive or independent existence, for it is composed solely of originated

qualities and accidents. Man, however, has a God-given capacity to attain true existence, but he will not attain this existence in the world that is manifest to the senses. It is not his adaptation to this world that he can reach his true destiny and realize his extra-mundane being. Al-Gazali maintains that for the perception of the second sphere, the mental world, the eyes of the soul are turned within. It is the world of the human mind which he calls 'alam al-jabarut' (reason, will, and power) and treats it to be one of the spheres of the Creator's power. He describes it as "the world of celestial power", or "the sphere of divine omnipotence". In this sphere the reflective soul discovers the limits of human freedom and appreciates the realm of determinism. By a process of reflection, the rational faculty (al-aql) exercises the function of cognition, in seeking to understand the true nature of things, in both their theoretical and practical aspects.

The third sphere of the Creator's power in the world as a spiritual reality is the world invisible, which is manifest only to the spirit. It is spoken of as a region above that of Earthly things, and also above that of real individual things. He who does not ascend to that world is seen to be a brute beast. He is considered more in error than any brute beast, since the brutes are not given the wings wherewith to take flight to that world. He calls the invisible world the 'World Supernal', 'the Spiritual World', and the 'World of Light'. He who is in that world above is with God and has the keys of the unseen. It is rational reflection in the second world which is considered by al-Gazali to be the means unto the end, or the bridge between the first and the third world.

Al-Ghazali endeavours to distinguish a sufficient degree of human freedom of choice to justify his belief in the individual's moral responsibility. In al-Ghazali's explanation of the extent of Man's consciousness of a degree of freedom of choice, on which moral responsibility may be based, special attention is directed to psychological determinations that are accomplished in the 'alam al-jabarut', the world of the human mind. This he sees as the sphere of operation for reason, will, and power, which are evident in the processes of the mind and which lead to actions. The (khawatir) (affections of the mind) are all those impressions that reach the heart (or soul). They are ideas, whether thoughts that come from immediate sensations, or recollections that come through memory. It is in these ideas that al-Gazali sees what he calls the springs of human actions. These ideas are capable of exciting strong desire or inclination (raghba). This inclination must then be followed by (itiqad), which is defined as intellectual conviction, i.e. the decision or

permission of reason. This decision of reason is in turn confirmed or accepted by will (*ira'da*), and the result is directed power, or action (*a'mal*). Al-Gazali expresses the psychological determination of action in an equation form as follows:

khawatir + raghba+ itiqa'd + ira'da = a'mal
Affections of the mind + Inclination + Intellectual Convention + Will = Action

In the decision of reason, in acceptance or rejection by the will, and in the direction of power in action, Man is conscious of a sense of freedom, and it is in the exercise of this freedom that he becomes a responsible agent (Donaldson,1953:153-156).

From the point of view of the Qur'an only that faith which is based on reasoning and a 'correct' mode of thinking is true and commendable (Qara'ati,1993). Al-Saud (1979) argues that the quest for learning has always been regarded as an exalted form of worship. Specifically, he assures that leaning and education are holy commitments for all Muslims. Ahmad (1988) summarizes the main point of this section stating that:

'in order to be a true Muslim three things are necessary: faith, action according to the faith and the realization of one's relation to God ..... When these three cornerstones are in harmony Man maintains the fact that he is the vicegerent of God on Earth'.   (ibid:21,25)

God in Islam is recognized as 'The Truth'. 'True' knowledge is never opposed to the Divine revelation. From the Islamic point of view, the Divine Being is not veiled from Man; it is for Man to try to rend this veil asunder. Islam encourages Man to study all branches of knowledge. It calls Man to use his reason and intellect in the quest to try to know God. The Qur'an constantly calls Man to see nature, to reflect and to understand the secrets of its operations. Islam urges the Muslim to build his faith on well-grounded convictions. Religious faith should be identified in the light of knowledge. This implies that Muslims should strive for 'the truth' through seeking knowledge. Therefore, knowledge in Islam is embedded in faith.

In concluding this section it is suffice to emphasize on the role of 'correct' knowledge for embracing solid faith and activating 'good' practices in a person. In order to attain salvation from God's punishment a Muslim must combine his faith and belief in his daily practice; his faith in God becomes dynamic in his life and his beliefs are translated into

real action. Such a principle, if well embraced, could be the guiding spirit that can enjoin the Muslims to attain knowledge of all aspects of life, and in particular, the knowledge about their current social, economic and environmental affairs. In the mean time, it could be a powerful spiritual incentive that directs them to modify their 'unintentional' prevailing habits that are causing detrimental effects on their environment. As a net result, they will be subscribing to the preservation of the integrity of planet Earth and the welfare of humankind.

2.4   Ethics of Islam

This section seeks to present an insight into Islamic environmental ethics in relation to the notions of justice, equity, moderation in consumption, sacredness of nature, and sustainability.

Ethics and morality are integral parts of Islamic teachings. Islam invokes moral principles over statutory laws. A moral tone underlines all the passages of the Qur'an. It deals with several subjects on moral codes and behaviour. It contains clear-cut commands on punitive actions against sinners. It warns those who adopt the path of evil that they will be paid back in the same coin; it also cheers the righteous with His mercy and benevolence (see Vol. 2, Appendix 2.2). Some verses emphasize that the succession on Earth has been to the 'true' believers; others promise that in a conflict between the right and the wrong, the right always prevails.

Islam addresses itself (Itani,1996; Mutahheri,1991) to the conscience of humanity and removes all barriers of race, status and wealth. If anything is prohibited, it is prohibited for all people without distinction. It sets up a system of social justice and aims at the emancipation of the underprivileged. Islam views any act performed for the sake of God as an act of worship and pleasurable. Abdalati (1998:44) states that:

'the range of morality in Islam is so inclusive and integrated that it combines faith in God, spiritual observances, social conduct, decision making, intellectual pursuits, habits of consumption, manner of speech, and all other aspects of human life'.

The teachings of the Qur'an (Mutahheri,1991) are based absolutely on a sense of responsibility − responsibility towards oneself and towards society, exhortation to what is

good and restraint from what is evil. It refers to the evolutionary course of history (see Vol. 2, Appendix 2.3), and says that the destiny of history is the final victory of faith over infidelity, of piety over licentiousness, of virtue over corruption and of good deeds over bad deeds. One of the characteristics of the Muslim (El-Sayed, 1993) is that he lives according to his Islamic principles which are based on his belief in Allah Almighty, doing what he knows to be right (according to the scripture) and avoiding what is wrong. All deeds (Ali,1991) have their consequences good or ill, but there is always in this life room for repentance and amendment.

Every person will be scrutinized about the manner he performed to possess his wealth and for what purpose he spend it. As the Prophet says:

(On the Day of Judgement, a person will be questioned on the source of his wealth and on what aim he has spent it).   (Cited in El-Sayed,1993:126)

(يسأل العبد: عن ماله مم اكتسبه وفيـــم أنفقه).

El-Sayed (1993) cites Omar Ibn-El-Khattab the second caliph saying:

"Call yourselves to an account before you are called, and weigh your deeds before they are weighed".
                                                                                                   (ibid:127)

قال أمير المؤمنين عمر بن الخطاب – رضي الله عنه–: حاسبوا أنفسكم قبل أن تحاسبوا، وزنوها قبل أن توزنوا.

Every action (Badawi,1979; Sardar,1977) and every endeavour has to be justified in religious terms. From the Islamic perspective, (El-Sayed,1993) there are some normal deeds that are raised to the level of righteous deeds and accepted as acts of worship. For example, (as the following *Hadith* implies):

(If the Muslim plants a garden or grows some crops with the intention of benefiting himself and others for the sake of Allah, he will be getting a reward whenever a Man or a bird eats from it).
                                             (Narrated by Imam Muslim; Cited in El-Sayed, 1993:145)

(ما من مسلم يغرس غرسا أو يزرع زرعا يأكل منه طير أو إنسان إلا كان له صدقه). (رواه مسلم)

Islam called on rich people (Behishti & Bahonar,1993) to spend what they have in the way of Allah and the welfare of the people. The rich should not think that their entire wealth belongs to them. They should realize that on a part of it there is a claim of other Muslims also. The following representative verse conveys the same meaning:

{And in their wealth and possessions the right of the (needy)}. (al-Zariat 51:19)

وفي أمــــــوالهـــم حــق للســـــائل والمحــروم".

The Prophet went to the extent of saying:

(He who sleeps satiated while his neighbour is hungry, is not a Muslim).

(Cited in Behishti & Bahonar,1993:422)

"من نام وجاره جائع فهو ليس بمسلم".

The believer's conviction (Qara'ati,1993:85) is that this world is not a place for eternal comfort. Therefore, he is apt to exercise patience whenever he confronts hardship and misfortunes. This world is a place where he sows the seeds for the passage to his permanent abode. Islam (Al-Faruqi,1982:156) sees ethical values as affirmation and promotion of the processes of life on Earth, under the moral law. Badawi (1979:112) affirms that:

'modernity without moral guidance, religious ethics and the belief in Allah and the destiny of Man, can bring more unhappiness and cause more disorder and misery'.

Izzi Dien (1992) asserts that duties do not have to be described by the law since they form part of the general Islamic ethical manner. He predicates that if Muslims were to feel that they were responsible for the protection of the environment as a part of their religious and ethical duty, then hopefully future generations would not have to live on a polluted and mutated Earth. Sardar (1977) attributes the current problems of environmental destruction to alienation between Man and Man, and between Man and nature, on the conventional rationalist ethic; while Islam, Sardar maintains, favours reduction of consumption and needs and emphasizes self-sufficiency and self-reliance. This, Sardar recommends, should be the corner stone of all planning and futuristic thinking. The present course is diametrically opposed to this way of thinking .

In order to approach God and obtain his pleasure Islam emphasizes spiritual illumination and moral uplifting. It places a deep consideration of Man's well-being and awakens in him the spiritual faculties. By the acquiescence of the Divine Law, Man is expected to know the effects of his deeds. Islam places a greater emphasis on duties than on rights. Operational ethics give concrete shape to the spiritual and physical values in everyday activities. For a Muslim, spiritual pleasures are more important and more lasting than

material pleasures. A 'true' believer must abide by a certain code of individual and social rules and regulations, laid down by Islam. All aspects of human life are to be judged by those specified ethical and moral standards.

2.4.1   Justice

Islam considers justice as one of the cardinal principles of Islamic faith. The Qur'an embodies over three hundred different expressions of justice and admonitions against justice. It has forbidden undue discrimination, cruelty, and exploitation or damaging the interest of others. While exercising his will, Man is required to be just. God has endowed Man's soul with knowledge of right and wrong things, evil and piety and enlightened him to their resultant effects. The Qur'an says:

{And We inspired the soul, as to its wrong and its right. Truly he succeeds that purifies it, and he fails that corrupts it}.   (al Shams 91:8-10)

" فألهمها فجورها وتقواها قد أفلح من زكاها وقد خاب من دساها".

Behishti and Bahonar (1993:443,367) maintain that:

'according to the Divine law of Islam, Justice means the provision of equal opportunities to all individuals to promote and show their talents, and to go forward up to the limit of their capacity ... the basic criterion for judging the true teachings of Islam in all fields revolve round the principles of justice which governs all Islamic teachings'.

Qutb (1988) maintains that justice in Islam means equality in opportunity and freedom in talents that do not come into conflict with the high ideals of life. Absolute justice demands that men's incomes and rewards should vary. It does not prescribe a literal equality of wealth, the acquisition of wealth depends on men's abilities, which are not uniform. At the same time, Islam forbids luxury which results in creating gross disparity in standards of living. Islam (al-Sadr,1993:157) has defined the limits of justice and has laid down general laws for social life in the various fields of production, distribution of wealth and mutual dealings. It has described any violation or neglect of these commandments as injustice and transgression. Whenever justice is established (al-Sadr,1991:195) Man's contact with nature blooms and a new relationship between Man and nature is established.

Justice (Qara'ati,1993) is a fundamental principle of Islamic belief. Allah's rewards and punishment is based on justice for all. It is through the wisdom and intelligence with

which Man has been endowed by Allah that he differentiates between a good and a bad thing and understands that oppression is a bad thing and justice is a good thing. Islam ordains that a Muslim should be just not only to his fellow Muslim but also to his enemies even in the times of war. In Qur'anic terminology (Mutahheri,1991; Al-Attas,1979) injustice means that Man has wronged his own soul. He has misused it; he has made it exceed or fall short of its real nature. All that he has done entails a violation to his covenant with God.

It is narrated that whenever the Holy Prophet talked with his companions (Qara'ati,1993) he used to glance over to them equally in a just manner without ignoring anyone of them. It is repeatedly stressed in various contexts throughout the Qur'an that God orders Man to be just. The following are representative selections:

{So establish weight with justice and fall not short in the balance}. (al- Rahman 55:9)

"وأقيموا الوزن بالقسط ولا تخسروا الميزان".

{And let not the hatred of others to you make you swerve to wrong and depart from justice: that is next to Piety}. (al- Ma'da 5:8)

"ولا يجرمنكم شنئان قوم على ألا تعدلوا أعدلوا هو أقرب للتقوى".

Islam laid great emphasis on justice and equity. Injustice in Islam is a violation of the 'covenant' and misconduct of the 'trust' (see Appendix 2.2).

2.4.2 Equity

In Islam the concept of justice is aligned with equity. No Man can be superior to others on the basis of his colour, race, descent, language or class. Islam recognizes only piety and knowledge as the touch-stone of superiority.

Mutahheri (1991) clarifies the attitude of Islam towards the issue of equity. He differentiates between discrimination and disparity. Allah has created Men in such a way that they all are in need of each other. The perfect Islamic society is a society that is against discrimination, but is not opposed to disparity. It is a society of equality and brotherhood. It takes into consideration the natural differences of the individuals and does not deprive anyone of his acquired distinctions. It establishes positive equality by

providing equal opportunities to all and by abolishing eminence and superiority. Al-Attas (1979:7) points out that:

'in God's Sight we are not all the same and equal. Indeed we are all the same in that we are creatures of God, human beings, cast in flesh and blood. But our spirits, our souls, though derived from that One Spirit, and though *essentially* the same are, in point of *power* and *magnitude*, not the same, not equal'.

He illustrates that we are like so many candles of varying lengths and shapes and hues and sizes; the tallow they are made from is essentially the same, but greatness of the flame, the light each sheds, is not the same in power and magnitude. The value of the candle is judged by the light it sheds just as we judge a man by those qualities by which he is not the *same* but *excels* another. Acknowledgement and recognition of such lights in man entails knowing one's proper place in relation to him who sheds such light.

Islam teaches (Abdalati,1998) that, in the sight of God all men are equal, but they are not necessarily identical. There are differences of abilities, potentials, ambitions, wealth, and so on. Yet none of these differences can by itself establish a status of superiority of one Man or race to another. The only distinction which God recognizes is the distinction in piety, and the only criterion which God applies is the criterion of goodness and spiritual excellence.

Brohi (1988) has prepared a list of values that upholds what he termed 'the enlightened consensus of Mankind in the mid-twenties'. In Brohi's view it provides a sufficient framework for discussing and elaborating the distinguished characteristics of Islamic school. Brohi argues that each of these items on the agenda on modern man's endeavour (shown below), is fully and adequately supported by various injunctions of the Qur'an and is illustrated by the Prophet's Tradition.

1) Equity, dignity and brotherhood of man.
2) Value of universal education with emphasis on spirit of free inquiry and the importance of scientific knowledge.
3) Practice of religious tolerance.
4) Liberation of the woman and her spiritual equality with man.
5) Freedom from slavery and exploitation of all kinds.
6) Dignity of manual labour.
7) Integration of mankind in a feeling of oneness irrespective of their differences *qua* race and colour (that is, the programme of securing integration of mankind on the basis of moral and spiritual principles).

(ibid:88-89)

Highlighting the characteristics distinguishing the Islamic economic system, Chapra (1988) maintains that action in every field of human activity, including the economic is spiritual provided it is in harmony with the goals and values of Islam. Chapra views that a proper understanding of these is essential for a better perspective of the economic system of Islam. The goals and values he identifies are the following:

a) Economic well-being within the framework of the moral norms of Islam.
b) Universal brotherhood and justice;
c) Equitable distribution of income; and
d) Freedom of the individual within the context of social welfare.   (ibid:174)

While Brohi and Chapra consider that their lists should provide a framework for discussing and elaborating the Islamic view concerning the issue of values and righteous living, both admit that their lists are by no means complete. Undoubtedly, in the light of the arguments that have been advanced so far, it could be asserted that both lists lack reference to the values concerning environmental stewardship. In fact, this issue might well be added on top of each of the above lists.

Islam gives credence to spiritual enlightenment and moral uplift of the individual as well as the society. A true Muslim is aware that he is being watched and supervised at every moment of his life by a supernatural power. Therefore, he is always guided by his conscious. The belief in the Judgement Day creates in the individual moral standards and Divine thinking. He accepts ethical codes and follows rules of behaviour that he is convinced will please God.

2.4.3   Oneness of humanity in Islam - (Globalization)

With regard to the source of creation, original parentage as well as final destiny, Muslims believe in the unity of Mankind. All Men are creatures of One God. Islam emphasizes that the message of Islam is addressed to all Mankind. In general terms, the Qur'an refers to both Jews and Christians as 'people of the Book', so the true believer has to believe in all revealed religions. It points out repeatedly that their original Books came from God. Muslims are asked to live with other nations in peace and not to be aggressive to others if they did not cause Muslims any harm. The following verse, along with several others, convey this fact:

{Mankind was one single nation, and Allah sent Messengers with glad tidings and warnings; and with them He sent the book in truth, to judge between people in matters wherein they differed}.

(al Baqara 2:213)

"كان الناس أمة واحدة فبعث الله النبــــيين مبشرين ومنذرين وأنزل معهم الكتاب بالحق ليحكم بين الناس فيما اختلفوا فيه".

Tabatabai (1987) comments that 'one community' means that Mankind was originally one society living at peace. After a period of time, men differed with one another and as a result God sent the prophets (ibid:77). Nasr (1994) states that Islam is a universal concept that comprehends Man and the universe about him and lies in the nature of things. The Qur'an (Brohe,1988; Mawdudi,1988; Ahmed1993) declares that the truth mentioned by it was also contained in the earlier scriptures. That all Prophets had the same religion; the one originally revealed to Man as the right way for him; they believed in the notion of the one divine God. All of them followed the same guidance; those principles of morality and collective life prescribed for Man at the very outset of his existence.

The Sayings of the Prophet Mohammed supports the essential universalizm of Islam:

(Truly I am the brother of every pious Man even if he is a slave, and opposed to every villain even if he is a noble). (Cited in Ahmed,1993: 31-32)

God refers in the Qur'an to His Covenant with all the Prophets saying:

{Behold! Allah took the Covenant of the Prophets, saying: I give you a Book and Wisdom; then comes to you a Messenger, confirming what is with you. Allah said: Do ye agree, and take this my Covenant as binding on you? They said: We agree. He said: Then bear witness, and I am with you among the witnesses}. (al Imran 3:81)

"وإذ أخذ الله ميثاق النبيين لما آتيتكم من كتاب وحكمة ثم جاءكم رسول مصدق لما معكم لتــــؤمنن به ولتنصرنه قال ءأقررتم وأخذتم على ذلكم إصـــري قالوا أقررنا قال فاشهدوا وأنا معكم من الشاهدين".

Itani (1996) states that the Qur'an encompasses the sources of guidance for Mankind and includes the greatest Divine system and order which makes the achievement of Man's happiness - in both the present life or the after life - feasible if Man believes in it and works according to what it teaches. Ahmad (1988) maintains that Islam aims at producing a Man committed to God and to the welfare of Mankind. It confers equal rights on all without any distinction of color, sex or language.

Just as the name of Islam is not linked to the founder of the Islamic religion it is also not linked to a geographical area (Ahmed,1993). Differences (El-Sayed,1993) of race and color and fatherland do not exist to create division and enmity among humanity, but so that men might recognize and identify each other, and so that the tasks of 'caliphate' on Earth might be distributed among them. Qutb (1988) maintains that according to Islam, humanity is an essential unity; its parts separate only to combine, they vary from one another only to create harmony, and they adopt different ways merely to help one another in the end. Life is a matter of co-operation and mutual responsibility and not a constant warfare to be lived in a spirit of struggle and hostility. Qutb concludes that there can be no sound system in human life until this co-operation and harmony have taken place in the manner that God has ordained.

The fact that the Qur'an (Mutahheri,1991) has mentioned 'the knowing each other', in the following verse, as the philosophy behind the existence of numerous nationalities, indicates that every nation has some special features and that Islam recognizes diversity of cultures. It confirms that Islam is in favour of the establishment of international relations on the basis of equity. It clearly declares that Islam supports nationalism in its cultural sense. What Islam opposes is nationalism in its racial sense.

God addresses Mankind:

{O Mankind! We created you from a single (pair) of a male and a female; and made you into nations and tribes, that ye may know each other (Not that ye may despise each other). Verily the most honoured of you in the sight of Allah is (he who is) the most righteous of you}.

(al-Hujurat 49:13)

"ياأيها الناس إنا خلقناكم من ذكر وأنثى وجعلناكم شعوبا وقبائل لتعارفوا، إن أكرمكم عند الله أتقاكم".

Sardar (1987:228) remarks that:

'as Muslims, we have a responsibility that goes beyond ourselves and beyond our community to the world as a whole. Concern for humanity, for suffering and ailment, for famines and disaster, for cruelty and hunger is only the first step towards this awareness. More important is an awareness of the forces that are a cause for serious concern for humanity'.

Itani (1996:55) states that the divine call of Islam attributes to God the act of creation and organization. One of the aspects of organizing, Itani maintains, is that He has made people's lives social, so that co-operation among them may take place in order to achieve

their happiness. If He had wished otherwise, He would have made them live like animals without civilization, culture, and even without humanity or honor.

Ahmad (1988:30) states that the following verse presents a unified view of the world and offers the vision of an integrated universe; it is the basic tenet to which Prophet Muhammad asked humanity to adhere.

{O, Mankind! worship your Lord, who created you and those who came before you, that you may become righteous. Who has made the Earth your couch and the sky a canopy, and who causes water to pour down; thereby producing fruits for your sustenance; then set not up rivals unto Allah when you know (the truth)}.   (al-Baqara 2:21-22)

"يا أيها الناس اعبدوا ربكم الذي خلقكم والذين من قبلكم لعلكم تتقون. الذي جعل لكم الأرض فراشـــا والسماء بناء وأنزل من السماء ماء فأخرج به من الثمرات رزقا لكم فلا تجعلوا لله أندادا وأنتم تعلمـــون".

Islam preaches that there is no compulsion in religion. Islam ensures freedom of belief and forbids compulsion in religion because freedom of choice is the corner stone of responsibility (Abdalati,1998). The Qur'an enjoins the Prophet defining the right attitude to those who reject Faith saying:

{Our God and your God is One; and it is to Him we bow (in Islam)}.   (al Ankabot 29:46)

"والهنا والمكم واحد ونحن له مسلمون".

Then again:

{To you be your way and to me mine}.   (al Kafirun 109:6)

"لكم دينكم ولي دين".

Abdalati (1998) states that 'peace' and 'Islam' are derived from the same root and may be considered synonymous. He expresses satisfaction that through the Islamic perspective, men of good faith and principles cannot fail to make the world a better world, to regain human dignity, to achieve equality, to enjoy universal brotherhood, and to build a lasting peace. Man's energy (Qutb,1982) which would have been spent on fighting over Earthly pleasures will have to be spent in fighting in the cause of God and establishing divine justice on Earth. It will be spent in consolidating supreme values among people; values which could never be maintained in an atmosphere of conflict.

Islam directs people to spread peace all over and to be humble. Whenever the non-believers or the ignorant (in the spiritual sense) try to evoke aggression, faithful believers should ignore their offences and address them peacefully. The Qur'an says:

{And the servants of (Allah) most gracious are those who walk on Earth in humility, and when the ignorant address them they say "Peace"!}. (al-Furqgan 25:63)

" وعباد الرحمن الذين يمشون على الأرض هونا وإذا خاطبهم الجاهلون قالوا سلاما".

As is shown by the Holy Prophet's own examples, a Muslim should deal kindly and equitably even with unbelievers, unless those are rampant and out to destroy the Muslims. God advises:

{Allah forbids you not, with regard to those who fight you not for your faith nor drive you out of your homes, from dealing kindly and justly with them: for Allah loveth those who are just }. (al-Mumtahina 60:8)

" لا ينهاكم الله عن الذين لم يقاتلوكم في الدين ولم يخرجوكم من دياركم أن تبروهم وتقسطوا إليهم إن الله يحب المقسطين".

Besides many Qur'anic references, there are many relevant Traditions of Prophet Mohammad which testify that God distinguishes between people on the basis of belief, irrespective of ties of ancestry, race or homeland. According to a narration the Prophet says:

(Verily Allah has created Adam from a handful that He has taken from all the parts of the Earth, so the sons of Adam spread out on the Earth; so people of different colors have been created). (Cited in Itani, 1996:18)

(إن الله خلق آدم من قبضة قبضها من جميع الأرض، فجاء بنو آدم على قدر الأرض).

Another saying by the Prophet:

(All creatures of God are from the family of God and he is the best loved of God who loveth best His creatures). (Cited in Ahmad,1988:40)

Al-Attas (1979:3) indicates that there is a hierarchy in the human order and in authority within that hierarchy in the matter of intelligence, spiritual knowledge and virtue. Al-Saud (1979:126) quotes the Prophet saying:

(No Arab is a better Man than a non-Arab; nor is a non-Arab, in any way a better Man than an Arab, except by greater fear of God and good works).

This, Al-Saud maintains, is the proclamation of the Quality of all men, which is of the essence of the Islamic ethos. Thus, since the time of the Message, Islam has abolished all kinds of discrimination whatever the basis.

Over the centuries, history has amply demonstrated that Islam was propagated swiftly, beyond the Arabian Peninsula, and was embraced by nations of different faiths and origins. This confirms that Islam is not confined to a special race. It had proved to have profound influence on Men of all races. It is a guide to every Man to a state of happiness and well-being. A major function of this guidance is to remove differences and conflicts between individuals and societies.

2.4.4 Moderation in consumption

Another fundamental element in the value system in Islam is the use of resources with a sense of responsibility and constraint determined by the Divine Guidance. God advises Man not to be tight-fisted, stingy and greedy, but he should be moderate in his consumption and expenditure and should remember other people's rights and shares while enjoying God's bountiful benefactions. Islam encourages Man to utilize everything that makes his life easy as long as that does not involve extravagance or leads to any unlawful act. The Qur'an repeatedly tells Man to use the resources moderately, to maintain the Earth's balance and not to upset nature's order by doing mischief. Islam emphasizes both the physical and spiritual degeneration of extreme consumption. Man's misdeeds and ungratefulness are the cause of his misfortune and deprivation of God's Mercy.

Beheshti and Bahonar (1993:386) state that:

'natural resources are described in the Qur'an as the treasures of Allah's mercy'.

Concerning Man's expenditure Qutb (1988:106) states that economic life must be taken care of in an ethical fashion. El-Sayed (1993:201) indicates that Islam calls a believer to be moderate and not extravagant. Muslims should keep in mind the poor, the needy, the kinsman, the wayfarer and many others; they have a due share in their wealth. Muslims should spend in the way of God that which is above their needs. Qara'ati (1993:76) goes

further to specify that Islam has adopted a medium course in regard to general expenditure as well as charities. Abdalati (1998) maintains that, as a responsible agent of God and a conscientious trustee, one must always be mindful of others who share the world with him and of those who will succeed him in the future. Being a miser and tight-fisted or extravagant and lavish are signs of un-gratefulness to God's generosity; they are the cause of affliction. The Qur'an discourages consumption beyond the basic needs. On this theme the following exhortations establish such meaning:

{Make not thy hand tied to thy neck, nor stretch it forth to its utmost reach, so that thou become blameworthy and destitute}.   (al-Isra 17:29)

"ولا تجعل يدك مغلولة إلى عنقك ولا تبسطها كل البسط فتقعد ملوما محسورا".

{Eat of the good things We have provided for your sustenance, but commit no excess therein, Lest My Wrath should justly descend on you: and those on whom descends My Wrath do perish indeed}.   (Taha 20:81)

"كلوا من طيبات ما رزقناكم ولا تطغـوا فيه فيحل عليكم غضبي ومن يحلل عليه غضبي فقد هوى".

{Eat and drink from the sustenance provided by Allah, and do not go about acting wickedly on Earth, spreading mischief}.   (Al-Baqara 2:60)

"كلوا واشربوا من رزق الله ولا تعثـوا في الأرض مفسدين".

{But seek, with the (wealth) which Allah has bestowed on thee, The Home of the Hereafter, nor forget thy portion in this world: but do thou good to thee, and seek not (occasions for) mischief in the land}.   (al-Qasas 28:77)

"وابتغ فيما آتاك الله الدار الآخرة ولا تـنس نصيبك من الدنيا وأحسن كما أحسن الله إليك ولا تبغ الفساد في الأرض إن الله لا يحب المفسدين".

{And render to the kindred their due rights, as (also) to those in want, and to the wayfarer, but squander not (your wealth) in the manner of a spendthrift. Verily spendthrifts are brothers of the evil one to his Lord (Himself) ungrateful}.   (al-Isra 17:26-27)

"وآت ذا القربى حقه والمسكين وابن السبيل ولا تبذر تبذيرا إن المبذرين كانوا إخوان الشياطين وكان الشيطان لربه كفورا".

The Prophet advises:

(Excess in the use of water is forbidden, even if you have the resources of a permanent flowing water).

(الإسراف في الماء حرام ولو كنت على نهر جار).

(All people share three things: water, pasture and fuel).
                                                        (Cited in Behishti & Bahonar,1993,p:384)

Islam (Mutahheri et al,1991) allows the use of all comforts and conveniences of life. It tells us that out of the new ideas, customs and usage we should choose what is useful and worthy and discard what is improper and wrong. We must not follow others blindly and

must not adopt anything that is not compatible with human dignity and the spirit of rational thinking (ibid:22-23). In praise of the virtuous people the Qur'an says:

{Those who, when they spend, are not extravagant and not niggardly, but hold a just (balance) between those (extremes)}.   (al-Furqan 25:67)

"والذين إذا أنفقوا لم يسرفوا ولم يقتروا وكان بين ذلك قواما".

The Islamic legislation on the preservation of Earth resources cares for all living creatures; it covers not only trees and plants but also wildlife. Unnecessary cutting down of fruit trees or destruction of crops, or any wanton act of destruction is forbidden in Islam. Islam encourages Muslims to cultivate the land and plant greeneries. It is reported that the Prophet said:

"If the Day of Reckoning was due and any one was holding a plant let him plant it if he had the chance to do that".

(إن قامت الساعة وفي يد أحدكم فسيلة، فإن استطاع أن لا يقوم حتى يغرسها فليغرسها).

It has also been narrated that the Prophet said:

"When you travel where there is plenty of vegetation, you should (go slow and) give the camels a chance to enjoy the benefit of Earth. When you travel where there is scarcity of vegetation, you should hasten with them (so that you may be able to cross that land while your animals are still in a good condition of health). When you make a halt for the night, avoid the road, for the tracks are the pathways of wild beasts or the abode of noxious little animals".   (Sahih Al-Bukhari, 4724)

(إذا سرتم في أرض خصبة فأعطوا الدواب حظها، وإذا سرتم في أرض مجدبة فانجوا عليها، وإذا عرستم فلا تعرسوا على قارعة الطريق، فإنها مأوى كل دابة).

It is also reported that the Prophet said:

"There is none amongst the Muslims who plants a tree or sows seeds, and then a bird, or a person or an animal eats from it, but is regarded as a charitable gift from him".   (Sahih Al-Bukhari, 1071)

(ما من مسلم يغرس غرسا أو يزرع زرعا، فيأكل منه طير، أو إنسان، أو بهيمة، إلا كان له به صدقه).

It is narrated that Ali Bin-abi Talib, the fourth caliph in Islam, wrote in one of his circulars to his officials as follows:

"Sharpen the tip of your pin. Do not leave much space between the lines. Avoid writing in an ornamental style and observe brevity so as to save paper. The paper belongs to the public treasury. The public treasury cannot afford any wasteful expenditure".

(Quated from Bihar Al-anwar, cited in Qara'ati, 1993:116)

It is also narrated (Chapra ,1988) that Abu Bakr, the first caliph in Islam, instructed his general going to a war assignment, not to kill indiscriminately, or to destroy vegetable or animal life even in enemy territory.

Islam upholds that the wealth and all bounties of the universe must be dealt with economy. It forbids wasteful and ostentatious consumption. It calls upon Man, not to renounce the enjoyment of God's bounties, nor to squander them. In all cases a Muslim should take a moderate measure for every action; he is neither extravagant nor miserly; but firmly between the two. He has to show contentment expressing his satisfaction of what God has provided him. Such a manner would ensure that the resources would cater for the well-being of all. From the foregoing Qur'anic citations, it is evident that the Islamic tradition possesses a richness and depth concerning the ethics needed for environmental protection. It is capable of providing the key for the solution of the global ecological crisis. It provides a solution for Man's economic and environmental problems by destroying the quest for materialism in Man's soul.

2.4.5   Divine outlook of the Universe*

Islam argues that if there is law and order in the universe, that is but because there is an Intelligent Being Who determines order and law. Every object has its intrinsic worth or good. God has created all that is in the universe for a designed purpose, even though Man does not apprehend the theme of its existence, even if he believes that its actual value is negligible. God has given Humans permission to utilize constituents of Earth in order to obtain their supply for living comfortably in this material world without damaging or harming any of its elements. The daily perseverance of Man for living involves co-operating with nature, not battling with nature. Upon Man's death on Earth he will be detached from this material world awaiting for the "Judgment Day". According to his personal deeds on Earth he starts an immortal life either in heaven or in hell. At that time, nothing of this world will survive; the whole existing universe will disintegrate. Qara'ati (1993;19) defines the Divine Outlook on the Universe as follows:

'it is a complete enunciation of life. It is that which looks at the universe as a meaningful creation which has come into existence through purposeful intention with a definite purpose, discipline and order'.

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* the term 'nature' as understud in the Western culture is implied in the Qur'an within the recurrently used terms the Universe, Cosmos, the Creation, Earth and its constituents.

Qara'ati remarks that this Divine Outlook on the Universe looks at life from a different angle. According to this outlook, its cogent reasoning establishes that Man is not a perishable creature. His future (in the hereafter) is full of bright prospects and he is compensated for his deeds, small or big. Qutb (1982) maintains that nothing occurs accidentally or haphazardly; everything is predestined and predetermined. The natural laws that govern the universe are not an arbitrary authority inherent in or emanating from nature. They are Divine signs deposited in nature by God. God alone has the power to modify, stop or discontinue natural laws as He pleases without any restrictions being imposed on His will or any external power affecting His infinite ability. Nasr (1992:89) reveals a deep sense of the Islamic perspective of the universe saying that:

'God Himself *is* the ultimate environment which surrounds and encompasses humanity.

This perspective is attested for in several Qur'anic verses such as the following:

{It is He that doth encompass All things }.   (Fussilat 41:54)

" ألا إنه بكل شيء محيط ".

Nasr commentates one meaning of the term 'All-Encompassing' (*Muhit*), mentioned in several other Qur'anic verses, to mean environment. He perceives humans to be immersed in the Divine *Muhit* and are only unaware of it because of their own forgetfulness and negligence. He sees the destruction of the environment as a result of the modern attempt to view the natural environment as an ontologically independent order of reality, divorced from the 'Divine Environment' without whose liberating grace it becomes stifled and dies. Ali (1991) presents the Islamic view of the limits of Man's power maintaining that Allah has given Man the faculty to subdue the forces of nature and to penetrate through high mysteries with his powers of reason and insight. But this is not merely a question of power, for in His Universal plan, all are safeguarded (ibid:1038). Itani (1996:67) affirms that:

'the true Muslim's attitude towards the power of nature is one of curiosity and friendship and not of fear or hostility. Contemplation, knowledge of and coordinated efforts with those powers, is the way to accomplish that friendship. Man studies those powers which are of his Lord's creation and discovers their secrets. In turn they respond and expose themselves for his use. In this way he lives with them in a world full of mutual love and real friendship'.

Islam enforces a strong spiritual sense of respect for nature, as gratitude to the Creator. This is in contrast to the ecocentric position which identifies a set of environmental values and pays respect for nature as a belief in its own right. Itani (1996) believes that the saying *to conquer nature*, used by Westerners, in reference to their success in adapting natural powers for human use, reveals an ignorant view. The Muslim believes that Allah has created those powers according to a unified law, basically for Man's usage, and that they have been made easy to discover and unveil. Al-Sadr (1993) maintains that the concentration of the Western Man on Earth, and the weakening of his relation with God has induced him to evaluate wealth and property in a way conforming to his materialist outlook. The sentiments of freedom and individualism have contributed much to the success of the free economy, along with which came the disappearance of moral responsibility. In contrast, al-Sadr envisions that the Muslim who is religiously trained and guided by Divine missions, is naturally engaged in the metaphysical world first and looks to the heaven before looking to the Earth. Instead of having a sense of competition and contradiction, the Muslim feels closely linked and in complete harmony with his society. The universe is Man's friend; it co-operates with him by the will and command of God. In this connection the Qur'an says:

{And the Earth hath He extended (to a wide expanse); He draweth out therefrom its moisture and its pasture and the mountains hath He firmly fixed for use and convenience to you and your cattle}.
(al-Naziat 79:30-33)

"والأرض بعد ذلك دحـــها. أخرج منها مايها ومرعاها. والجبال أرساها. متاعا لكم ولأنعامكـــم".

Ahmad (1988) predicates that the following passage points to the supremacy of the Divine Power beyond the cosmos. It also presents a unified view of the world and offers a vision of an integrated universe (ibid:30).

{Do you not see that Allah has subjected to your (use) all things in the heavens and on Earth, and has made His bounties flow to you in exceeding measure, (both) seen and unseen? Yet there are among men those who dispute about Allah, without knowledge and without guidance, and without a Book to enlighten them!}.
(Luqman 31:20)

" ألم تروا أن الله سخر لكم ما في السموات وما في الأرض وأسبغ عليكم نعمه ظاهره وباطنه ومن الناس من

يجادل في الله بغير علم ولا هدى ولا كتاب منير".

In Islam there is no gap (Al-Faruqi,1982) in nature. Everything that is or happens does so because of predictable causes and with predictable consequences. That is why nature is a real cosmos, not a chaos. In Islam, nature is creation and gift. As creation it is

teleological, perfect and orderly; as gift it is innocent good placed at the disposal of Man. Its purpose is to enable Man to do good and achieve felicity.

Numerous verses in the Qur'an remind Man that all creation is issuing from One absolute Will. There never exists a minute particle in that universe which is purposeless or useless, or devoid of desired wisdom. Every thing of God's Creation is carefully placed where it belongs in the total scheme of Creation. About God the sustenance giver, the Qur'an says:

{Not without purpose did We create heaven and Earth and all between! That were the thought of unbelievers!}. (Ssad 38:27)

"وما خلقنا السماء والأرض وما بينهما باطلا ذلك ظن الذين كفروا".

God's creation is not haphazard. Every thing goes by law, proportion and measure. It is also created with precise quantities of substances by the Divine Act. This fact has been confirmed in several places in the Qur'an, as the following verses attest to:

{Verily, all things Have We created in proportion and measure}. (al Qamar 54:49)

"إنا كل شيء خلقناه بقدر".

The whole universe (Itani,1996) is built on the basis of right and justice, order and control. The universal truth clearly reveals itself for every one who contemplates the universe. No event takes place without a fixed law connecting it to other parts of life. Mutahheri (1991:56) maintains that:

'every particle of the world is a sign of the existence of an All-Wise and All-Knowing Allah'.

Nasr (1992:89) states that:

'the Qur'an depicts nature as being ultimately a theophany which both veils and reveals God'.

It is from His absolute Will (Qutb,1988) that all existing things directly proceed; and it is by that absolute Will that all things are sustained, organized and conducted. So all creation forms a perfect unity in which each individual part is in harmonious order with the remainder and universally advantageous to all creation. Qutb comprehends that the universe cannot be hostile to life or to Man: nor can 'Nature' be held to be antagonistic to Man, opposed to him or striving against him. The creed of Islam has established that God

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has created all these forces as friends and helpers of Man. If any of these forces harm Man, it is because he (Man) has not approached it properly and is ignorant of the law that governs it.

God has fashioned each creature and given it an essence (Al-Farouqi,1981), a structure which determines its life and from which it never deviates. He has built into it a propensity that never fails to move it in the direction of self-fulfillment. He has placed every creature within the general nexus of nature. To every creature He has ordained a career. He has adequately provided for it the measure it needs to fulfil its destiny. Qara'ati (1993) considers that the Islamic outlook on the Universe is reflected by the following verse:

{Who say, when afflicted with calamity: 'to Allah we belong, and to Him is our return'}.
(al-Baqarah 2:156)

" الذين إذا أصابتهم مصيبة قالوا إنا لله وإنا إليه راجعون ".

Regarding the individual's life Qara'ati (1993) maintains that Man's life involves hardship and difficulties. Hardship affects his body with the result that his soul is strengthened. The Muslim believes (Al-Sadr,1993) that the present world is a place to prepare oneself for the journey towards the eternal world where there will be no affliction or pain. He makes earning the pleasure of Allah the criterion of all his deeds throughout his life. This moral standard ensures individual as well as collective interests.

Cajete (1996:137), an ecocentric, fascinated by the theology and rituals of indigenous people, states that:

'every step was a prayer, every waking moment was a moment spent in relationship and in communion with one's fellow humans .. When one views the world as a sacred place, as a place which reflects a living process and way of being that goes beyond the human sense of experience, the way in which one deals with nature becomes very different …. It was a continuing process of developing one's capacity, one's potential, one's humanness, with the goal to reaching a level of completion'.

It is argued that such theology is in line with the Islamic perspective of life with one fundamental additional concept that Man is in need of ever consciousness of his Lord's existence (Allah) and of the fear of His judgment. It is argued in the following section that while such perception is in agreement with the Islamic perspective, Islam explains the notion of human development and completion being the development of Man's spirit in contrast to the material aspects of his life.

The Islamic view of nature is God-centred; it is based upon the sacred quality of nature. Islam has a great bearing upon Man's attitude and behaviour towards nature. It commands Man to contemplate the beauties of the universe and their Divine prototypes. This action helps Man to acquire a broad outlook of God's creation beyond the sensual world towards the 'total' environment. Its message to Man is not to manipulate the equilibrium state of any part of the Earth. Every form of existence is based on a Divine wisdom. The Islamic outlook of the universe is that Man's life on Earth is a temporary passage for a more rewarding life in the 'next world'. His eternal well-being depends on utilizing the powers bestowed in him and in the universe to the best advantage of humanity, according to the Divine guidance. This conception consequently gives a specific connotation to the Islamic concept of 'sustainability'.

2.4.6 The concepts of 'Development' and 'Sustainability' in Islam

A fundamental principle in Islam is that the day will come when Earth and all material creation will perish. God is the only eternal being in this cosmos. From the Islamic point of view, human life does not expire with the end of the Earth's limited duration. After this world, there exists another world where human beings shall be rewarded or punished. Man is only transferred from one world to another, where he begins a new life. Life continues in another form and the process of evolution does not come to an end. Man in, this transient life, is to strive to develop his soul in order to win an eternal happiness. The Prophet said:

(You have not been created for destruction. You have been created for ever-lasting life. The only thing is that you are moved from one world to another).

<div align="right">(Biharul Anwar vol.VI,p145, cited in Mutahheri et al, 1991:35)</div>

Qutb (1988:125) exemplifies the Islamic conception of existence:

'there is no isolation between this world and that to come, or between daily life and worship, or between the creed and the law. Beyond all this there exists one eternal ever-lasting power, which has no beginning that can be known and no end that can be attributed to it ..... it is the power of God'.

In relation to the concept of development of the material world, Mutahheri (1993) predicates the Islamic perspective that the entire universe is continuously in a state of motion and gradual development. The deficient becomes perfect and the perfect becomes

more perfect. Yet it is not eternal and its pleasures are not without pain. Concerning the issue of the development of the individual Man as well as that of society, Mutahheri (1991) explains that the evolutionary march of Man begins from his animality and proceeds towards the highest point of humanity. It is a characteristic of evolution that the more developing a being evolves, the more that being becomes independent, self-existing and effective and the more it influences its environment. His development means he has been emancipated from the subjection of internal and external environment and attached to creed and faith. This principle, in his view, applies to individuals as well as to society. The more a human society is developed, the more its cultural life becomes independent of its material life. Mutahheri believes that the Man of future will be a Man of culture and a Man of faith, creed and ideology and not a Man of economy, bodily needs and sensual enjoyments. What determines the final destiny of Man is his 'cultural evolution' and his human reality, not the evolutionary progress of the implements of production.

In the same line of thought Qara'ati (1993) posits that this world is a place of development and progress of Man's soul. He suggests that there is some goodness in misfortune. The hardship and discomfort affecting Man's body are meant to strengthening and purifying his soul. Regarding the collective life of a nation or a community, al-Sadr (1991:121) denotes that:

'like an individual, any nation *Ummah* lives, moves and dies .... if the nation goes against the norms of history, plays with the divine laws of nature, it will disintegrate very quickly. It signs its death warrant with its own hand'.

Sharifi (1979:82) speculates that Marxist, materialist and socialist 'utopia' is an inverted image of the paradise in which, the Holy Qur'an describes: 'are rivers of water un-staling, of milk unchanging in flavour ....'. He remarks that whatever belongs to this world cannot maintain itself eternally, for the simple reason that only the 'Truth', the Absolute can be eternal, according to the Qur'anic verse:

{All that is on Earth will perish, but will abide (forever) the face of thy Lord}.

(al-Rahman 55:26-27)

" كل من عليها فان ويبقى وجه ربك ذو الجلال والإكرام ".

The Islamic notion of the abolishment of mankind from Earth or *Gaia*, (as named by some ecocentrics and discussed in Chapter 3), has a strong resemblance with ecocentric

beliefs, which highlight respect for nature and as well predicting the possibility of the extinction of human race. According to Lovelock's (1988:212) conviction:

'Gaia is stern and tough, always keeping the world warm and comfortable for those who obey the rules, but ruthless in her destruction of those who transgress. Her unconscious goal is a planet fit for life. If humans stand in the way of this, we shall be eliminated with as little pity as would be shown by the micro-brain of an intercontinental ballistic nuclear missile in full flight to its target'.

Lovelock does not explain how the 'rules of Gaia' have originated. Muslims respect the whole constituents of the universe as signs of their obedience to the 'Divine order' presented in Vol. 2 (Appendix 2.1). The main distinction between the Islamic perspective and that of the ecocentric is that the ecocentrics hold ecologoical values, that are Earth-centred; some happen to resemble those of Islam, but they are characterized to be man-made laws set within the Western philosophy of life. Lovelock's vision of the Earth's punishment to mankind, as a response to misdeeds, has resemblance to the Qur'anic description of the universal scale explosion, that is believed in Islam to destroy the Earth at the Judgement Day.

{When the sky is rent asunder, and looks like a rose of ointment}.   (Al-Rahman 55:37)

" فإذا انشقت السماء فكانت وردة كالدهان " .

Nasr (1992:90) remarks that:

'the Divine Environment permeates the world of nature and of normal humanity, nourishing and sustaining them, being at once the origin and end of the manifested order".

Brohi (1979) acknowledges that In the perspective of Islam, *this* life is a prelude to 'real life' to come. An individual who believes in such a life necessarily so conducts the operations of his life as to win the reward of *that* life which is *better* and *eternal*. The religion of Islam sets limits to certain instinctive cravings of the 'lower self' of Man in order to enable him to undergo the process of preparation which is required if one is to be admitted to the precincts of the 'higher life'. Humans (in this life) are in contact with only a partial environment, being a mere segment of the total environment that their faculties are able to establish contact with. Islamic belief, therefore, takes Man beyond the evidence which is available to him and gives him a view of the total environment.

Mutahheri et al (1991) maintain that the belief in the next world creates a favourable atmosphere for the promotion of good deeds and abstaining from indecent actions. In

Muslim's belief, Paradise has various divisions, each of the happy lots shall be placed according to the degree of his deeds and virtues. Hell, like Heavens, has various divisions where a transgressor will be punished according to the varying degree of his sins.

The God-loving Man (Behishti & Bahonar,1993) who seeks the pleasure of Allah feels to be attaches with an ever-lasting bond to an eternity and a 'perfection'. He feels to be a being who can never be annihilated and even whose death is the beginning of a new era of life. Behishti and Bahonar comment that Allah Himself says that those who have developed their thinking and their intellectual faculties in a fruitful manner, shall make further progress in their life of Paradise. The Muslim (Qutb,1982) knows that if Man knocks off the shackles that bind his soul to the Earth he will be more competent to control his wishes and desires, within the limits prescribed by God. He also knows that for every excessive pleasure he has forsaken on Earth to please God he will be doubly and trebly rewarded on the day of Resurrection when he will stand in the presence of God.

The Qur'an warns that God will abolish any nation that does not abide by His laws (see Appendix 2.3). Such transgressors will be replaced with those who will be righteous.

{My servants, the righteous, shall inherit the Earth}.   (al-Rahman 55:26-27)

" أن الأرض يرثها عبادي الصالحون".

In Islam eternity is not to be sought in this material world. The whole material universe is apt to demolition in the assigned day of Resurrection. Sustainability is for the Divine Being. The concept of sustainability for Man in the Islamic faith refers to Man's life in the hereafter. This earthly environment is considered a futile segment of 'the wholesome and the perfect environment'. This conception is in contrast to the concept recognized from the Western world view, which concerns Man's sustainability in the material world.

2.5   Earth -The living unit in Islam

The concept of Earth as a living organism is not confined to Greek theology, nor to the modern concept of the Gaia hypothesis. Numerous verses in the Qur'an designate to the Earth and its constituents distinctive features of life and human qualities, that of

awareness, obedience, will of choice (at some stage), and the potential to witness Man's deeds. In the Day of Judgement it will reveal the truth of Man's mischief. The universe and its constituents are subservient to God and execute His commands; they are in a state of constant worship to God. In Islam, this is an absolute fact which Man does not usually comprehend. From the Islamic point of view, the sound of thunder, the flashes of the lightning and the movement of the wind are examples of the heaven's worship. This belief, for a Muslim, is sufficient to conclude that all nature adores Allah.

The verse (35:41) gives assurance that God is the sustainer of the heavens and the Earth. He gives His direct attention and constant care throughout the universe. According to Islam (Abdalati,1998; Beheshti & Bahonar,1993), everything in the world, all the powers such as the sun, the moon, the clouds and so on, i.e. every phenomenon other than Man is administered by God-made Laws. The entire physical world is obedient to God and submissive to His Laws (Abdalati,1998:9), which, in turn, means that it is necessarily in a state of Islam, or it is Muslim. Islam asks that we follow our nature (Ali,1991) and make our will conformable to Allah's will. Ali takes the following verse to mean that all matter created by Allah willingly obeys the laws laid down for it.

{He Comprehended in His design the sky, and it had been (as) smoke: He said to it and to the Earth: "Come ye together, willingly or unwillingly". They said: "We do come (together), in willing obedience"}.   (Fussilat 41:11)

" ثم استوى إلى السماء وهي دخان فقال لها وللأرض ائتيا طوعا أو كرها قالتا أتينا طائعين".

The following verse conveys the same meaning:

{And among His signs is this, that heaven and Earth stand by His command}.   (al Rum 30:25)

" ومن آياته أن تقوم السماء والأرض بأمره ".

The following passage states that even things superior to Man and as hard as the mountains cannot endure the fear of the presence of God:

{Had We sent down this Qur'an on a mountain, verily, though wouldst have seen it humble itself and cleave asunder for fear of Allah }.   (al Hashr 59:21)

" لو أنزلنا هذا القرآن على جبل لرأيته خاشعا متصدعا من خشية الله ".

All matter created by Allah celebrates Allah's glory and stands at His command. The following verse which refers to David, the messenger of God, conveys this fact:

{O Ye mountains! Sing Ye back the praises of Allah with him! And ye birds (also)! And We made the iron soft for him}.   (Sab'a 34:10)

"ياجبـــال أوبي معه والطير وألنا له الحديد".

The Earth and the heavens obey God's orders in punishing the transgressors. The following verse confirms this fact and refers to the disobedient son of Noah who broke away and suffered the fate of unbelievers.

{Then the word went forth: "O Earth! Swallow up the water, and O sky! Withhold (they rain)!" and the water abated, and the matter was ended. The Ark rested on Mount Judi. And the word went forth: "Away with those who do wrong!"}.   (Hud:1144)

"وقيل يا أرض ابلعي مائك ويا سماء أقلعي وغيض الماء وقضي الأمر واستوت على الجودي وقيل بعدا للقوم الظالمين".

In several occasions the Qur'an refers to the fact that the Earth has emotional feelings of happiness and depression. Mutahheri (1991) refers to the Earth as 'the world'. He maintains that as far as its relation with Man is concerned, the world being a living unit and being administered by conscious forces (the angels managing the affairs of the world), it is a world of action and reaction. It is not indifferent to a good Man or a bad Man. The rules of retribution, recompense and remuneration operate in this world as they do in the Hereafter (ibid:190). Ali (1991) comments that Pharoah who claimed to be a supreme god and those who followed him were proud monopolists. They were drowned in the sea, and the inheritance went to other hands. They died, "unwept, unhonoured, and unsung" (ibid:1286).

{Thus (was their end)! And We make other people inherit (those things)! And neither heaven nor Earth shed a tear over them}.   (al Dukhan 44:28-29)

"كذلك أورثناها قوما آخرين. فما بكت عليهم السماء والأرض".

God addresses the rational Man to recognize the symptoms of life on Earth:

{A sign for them is that the Earth that is dead We do give it life, and produce grain therefrom, of which ye do eat }.   (Yasin 36:33)

"وآية لهم الأرض الميتة أحييناها وأخرجنا منها حبا فمنه يأكلون ".

{And He sends down rain from the sky and with it gives life to the Earth after it is dead. Verily in that are signs for those who are wise. And among His signs is this, that heaven and Earth stand by His Command}.   (al Room 30:24-25)

" وينـــزل من السماء ماء فيحيى الأرض بعد موتها إن في ذلك لآيات لقوم يعقلون. ومن آياته أن تقوم السماء والأرض بأمره".

The Prophet says:

(Earth comes back to life when justice is administered and divine laws of punishment are enforced).
(Cited in Qara'ati,1993:105)

According to the Islamic perspective, the sage would love nature because he is able to hear the prayers of God's creation. The whole creation in the universe worship God in their own way, they bow to Him and glorify Him. At many occasions, the Qur'an confirms this phenomenon.

{The seven heavens and the Earth, and all beings therein, declare His glory: There is not a thing but celebrates His praise: and yet you understand not how they declare His glory!}. (al Isra 17:44)

" تسبح له السموات السبع والأرض ومن فيهن. وإن من شيء إلا يسبح بحمده ولكن لا تفقهون تسبيحهم".

{Seest thou not that to Allah bow down in worship all things that are in the heavens and on Earth, the sun, the moon, the stars; the hills, the trees, the animals}.   (al Hajj 22:18)

"ألم تر أن الله يسجد له من في السموات ومن في الأرض والشمس والقمر والنجوم والجبال والشجر والدواب".

Ali (1991) comments that even inanimate things are spoken of as recognizing Allah and humbly worshipping Him. Their shadows turn according to the light from above to celebrate the praises of Allah. The 'shadows' suggest how all things in this life are mere shadows of the 'true' reality in heaven (ibid:649). The Qur'an refers to this fact at several places.

{Do they not look at Allah's creation, (even) among (inanimate) things how their (very) shadows turn round, from the right and the left, prostrating themselves to Allah, and that in the humblest manner?}.   (al Nahl 16:48)

" أولم يروا إلى ما خلق الله من شيء يتفيـــوا ظلاله عن اليمين والشمائل سجدا لله وهم داخـــرون".

The Hour of Judgement is heralded by a mighty Convulsion. The Earth will stand witness on the Judgement Day; it will give up her secrets and tell her tale of all Man's doings. The following passage reveals this fact:

{When the Earth is shaken to its (utmost) convulsion, and the Earth throws up its burdens (from within), and Man cries (distressed); 'what is the matter with it? On that day will it declare its tidings: For that thy Lord will have given it inspiration}.   (al Zalzala 99:1-5)

" إذا زلزلت الأرض زلزالها وأخرجت الأرض أثقالها وقال الإنسان مالها يومئذ تحدث أخبارها بأن ربك أوحى لها " .

At this stage, it is suffice to conclude that from these extracts of the Qur'an it is clear that in Islam, even inanimate objects, do have some sort of sense in them. All creation has some qualities of living beings and obedience to God's Will. It is argued that a close examination of the Islamic perception of all God's creation, and in particular, the planet Earth indicates a degree of resemblance between the Islamic theology and the Gaian hypothesis (see Chapter 3, section 3.3.2).

2.6   Conditions of contemporary Muslims

There is a considerable dissatisfaction among contemporary Muslim writers concerning the material conditions of the world, in general, and that of Muslim nations, in particular. This section presents the thoughts of several Muslim scholars on possible factors that have led to the backwardness of Muslims from the economic, political, social, environmental, educational .. etc, aspects. It also presents their suggestions for elevating these conditions. Upon serious consideration of the thoughts and ambitions of those representatives of Muslim scholars, solutions to the deterioration of the Muslim nations be it social, economic, political, moral, environmental, or educational could be deduced.

Ahmad (1988) points to the belief that Man has reached the apex of civilization. But on reaching the apex he faces a new and greater void. He finds himself and the civilization he has built threatened with forces of his own creation. Ahmad accuses Western civilization of producing an economic and political plenum and, in the same breath, a social and spiritual void. Behishti and Bahonar (1993) indicate that the cause of the confusion and vulgarity of humanity is that human life has been bereft of the element of *eiman* faith and that Man is concentrating his efforts on material progress. They envisage that moral values are being looked upon only from material angles. Mutahheri (1993) suggests that a school or an ideology is one of the necessities of social life, a comprehensive and perfect ideology which may unite humanity give it an orientation, a common ideal and a common standard to judge what is right and what is wrong. Qutb (1982) believes that modern

people are lost, perplexed, restless, miserable and have strayed away from the 'straight path' of life because they have not worked out satisfactory answers to the pressing questions about the nature of Man, his role and his fate on Earth and the method according to which his life will proceed in this world and the next. If side by side with progress faith and piety are not there, in Qara'ati's (1993) view, it can be nothing but destruction.

Reflecting on the general situation in the Islamic world, several Muslim thinkers seem to agree that contemporary Muslim people are under the influence of the Western perspective, and that the infatuation of Muslims with Western secularism and its materialist ideology represent the external sources and causes of Muslims' dilemma. Sardar (1987) brings to attention that, at this stage of Muslim history, Muslims are unable to distinguish between good and bad. In his view Occidental things are the cause of Muslims' lack of understanding of Islam and appreciation of their contemporary reality. El-Sayed (1993) offers a critique of what he calls the superficial charm and the false glamour of the present Western civilization which has captured the minds of many Muslims. He fears that many Muslims began to ignore and forsake many of their principles; the case which led them superficially to believe in the weakness of the teaching of Muslim religion.

A similar message is conveyed by Mutahheri et al (1991:19) stating that:

'Islam is not properly introduced to the succeeding generations ... disregard for 'true' teachings of Islam resulted in the backwardness of many Muslim countries'.

Al-Attas (1979) identifies the basic problem with Muslims to be the lack of 'proper' and adequate Islamic education. He explains that *"The loss of adab"*, is the loss of 'discipline' of body, mind, and soul. It is, he explains, the loss of the discipline that assures the recognition and acknowledgement of one's proper place in relation to one's self, society and community. Moreover, it is the loss of recognition of one's proper place in relation to one's physical, intellectual, and spiritual capacities and potentials. Al-Attas warns that if the underlying principles and methods of anthropology, sociology, linguistics, psychology and education brought about by the West are not made subject to some kind of Islamizing formula they would continue to be harmful to the welfare of the Islamic community. Al-

Attas stresses on the role of the individual in seeking a just solution to the problem rather than the society and the state.

Sardar (1987) points out that Muslim communities everywhere are in need of self-assurance and a pride in their traditional way of life. He emphasizes that the traditional systems have stood the test of time and their superiority is now beginning to be realized. However, Muslims must not get carried away: not all the products of the contemporary world are inherently bad. Indeed, in his view, some can integrate well with the traditional system to produce genuine improvements. The challenge is to filter that which can enhance and improve the Islamic way of life from that which can take us away from the state of Islam. Abdalati (1998) expresses his hope in re-acquainting Muslims with a spiritual insight into the universe and a moral approach to the human condition. On the same line, Ahmed (1993) attests to the general notion, felt among many Muslims, that the renewal of society necessitates a return to Islam.

Al-Sadr (1993) considers that a Muslim's preoccupation with spiritual matters is a reflection of the principle of Man's 'vicegerency' of Allah on Earth. If spiritual principles are applied to the worldly affairs, and the bounties of nature are utilized with a spirit of devotion, the spirituality itself can turn into a motivating force for the attainment of the highest degree of economic development. Al-Sadr (1991) indicates that Rules relating to every situation that existed during the time of past Muslim scholars were deduced from religion. Scholars of our time, he suggests, must also study the problems of today topically and deduce rules relating to them from the general principles of Islam so that jurisprudence may expand horizontally to the required degree.

In Islam, any one who desires to improve his condition should start first with his own soul. As such, if a nation wants to change its state it should begin to carry out the change from within itself. The Qur'an says:

{Allah will never change the grace which He hath bestowed on a people until they change what is in their (own) soul}. (Al-anfal 8:53)

"ذلك بأن الله لم يك مغيرا نعمه أنعمها على قوم حتى يغيروا ما بأنفسهم ".

In particular, concerning the Muslim's condition from an environmental viewpoint, Professor Seyyed Hussein Nasr, a contemporary philosopher in Islam argues that much

that is Islamic today lies hidden behind the cover of Western cultural, scientific, and technological ideas and practices. He believes that:

'the Islamic peoples have often been misguided by Western industrial civilization, leading to the degradation of the environment'.   (Nasr,1992:86)

However, he believes that the 'destructive trends' can be reversed by a recovery of the traditional Islamic understanding of the interrelation of God, humanity, and nature. He contends that:

'the Islamic world can find the foundations for an ethic adequate to an age of environmental crisis in this theoretical vision of the sacredness of nature and in the revealed truth of the Shari'ah, the Divine Law'.
                                                                                              (Nasr,1992:87)

Nasr identifies the reasons of the failure of the Islamic world to avoid an environmental crisis despite the religiously positive and caring attitude of Islam toward nature as such:

- Colonial domination by the West. This brought about economic exploitation and resulted in many Muslim countries discarding much of the Divine Law.
- The Islamic world is at the receiving end of an ever-changing technology.
- Economic and political factors.
- The great poverty in mach of the Islamic world works against reawakening an active concern for nature.   (ibid:98-101)

In the face of the devastating environmental crisis, Nasr (1992) proposes two programmes for Muslims to undertake.

- Formulating and making clearly known the perennial wisdom of Islam concerning the natural order, its religious significance, and intimate relation to every phase of human life in this world. This must include a critical appraisal of both modern science and scientism, as well as an examination of the significance of traditional Islamic science.

- Expansion of the awareness of Shari'ah teachings concerning the ethical treatment of the natural environment. In addition to passing laws of a civil nature against acts of pollution, cruelty to animals ....etc, so that environmental laws will be seen by Muslims to be impregnated with religious significance.   (ibid:103-104)

On the other hand, Izzi Dien (1992) views that duties do not have to be described by the law since they form part of the general Islamic ethical manner. Therefore, if Muslims were to feel that they were responsible for the protection of the environment as a part of their religious and ethical duty, then hopefully future generations would not have to live on a polluted and mutated Earth.

The common belief among recent Muslim theologians is that Muslims have lost touch with the inner core of their faith, that Islamic principles are not operated comprehensively, and that there is a wide gulf between *the Shari'ah* and the actual practices in Muslim countries. They agree that Islamic world today needs to give the Islamic answer to modern day problems. One aspect of the ill-practices of Muslims that concerns this thesis is their lack of realization that resources at their disposal are considered as 'trust' from God.

There can be no doubt that Islam embodies a treasury of spiritual teachings concerning Man, Earth and the interaction between them. It has the potential to contribute in building the 'inter-faith community' that is currently sought for by many leading bodies around the world. Islamic views have a hold upon the minds and souls of its adherents. Therefore, the worldwide emergence of a shared ethical concern about the deterioration of the environment is a significant condition for Muslims to set forth for the revival of their traditional Islamic views related to the environment.

2.7   Conclusion

To summarize, Islam lays great emphasis on knowledge, this is in common with the secular worldview. But, from the Islamic perspective, the condition is that the acquisition of knowledge should be within the boundaries of the Divine Law the *'Shari'ah'*. Science leads Man to acquire knowledge of all the signs of existence of God, that which qualifies him to be 'representative' of God.

Islam bears concern about all God's creation, the human and the non-human. It calls upon its believers to abide by the *Shari'ah* , which stresses social justice, rejects materialism, and makes fewer demands on the planet's resources. Muslims consider the *'Shari'ah'* as a Divine guidance that covers all elements necessary for over-all human well-being in accordance with nature's laws. It constrains human actions through imposing the concept of 'stewardship' that is implied in the 'covenant with God'. By bearing hardships in the course of earthly life, Man will be recompensed in the afterlife; life on Earth is considered a passage towards eternal life. The belief in the continuity of life and the accountability before God plays powerful role in containing the self-interest of an individual. Evidently, such a concept does not exist in the Western secular ideology.

Many Muslim thinkers have a deepening awareness that present day practices of the majority of Muslims are at variance with the fundamental Islamic ethics. There is an apparent consensus between them that neglect of traditional Islamic doctrines by Muslims has led to the decline of Muslim nations in all aspects of life. They speculate that it is via abiding with the route of Islamic ethics rather than the Western ideologies that Muslims can better their wellbeing and improve their environment. In relation to the theme of this thesis, it could be concluded that abandoning the Islamic views concerning the spiritual significance of nature and the necessity to live in harmony with the rest of God's creation has led to the deterioration of the environment of Muslim countries.

An overview of this chapter which provides a deep look into the Islamic principles can reveal the Islamic view of nature. It could be concluded that, perhaps a solid solution for the deterioration in our living conditions might lie in the resurrection of the intrinsic Islamic ethics. Seeing how deeply the spiritual concept of nature is embedded in Islam, the task of teaching the Islamic world to respect and care for nature seems not to be difficult; one can appeal easily to the Muslim's religious sensibilities.

One aspect of consideration of the thoughts and ambitions of Muslim scholars, could be to highlight the urgent need for Muslims to lay the foundations of productive programmes in EE based on an Islamic view of nature inculcated with modern educational teaching strategies. Focusing more specifically on the Kuwaiti society, there prove to be a need for the worldview underlying the structure and paradigms of Kuwaiti formal system of education to be analyzed. It ought to be firmly based on Islamic ethics in order to seek to diminish some of the effects of the environmental crisis.

Building on the arguments presented in this chapter and Chapter 1, it could be concluded that developing EE in Kuwaiti middle schools involves a need to uncover the Islamic ethos about nature and the place of human beings on Earth. To do so, it is necessary to examine the Western worldview, in relation to the Islamic tradition. This is going to be developed in the following chapter.

Chapter Three

Western environmental ideologies and education for sustainability

3.1 Introduction

Following the emergence of environmentalists in the Western world in the 1960's, their significance in debates about conservation and various global environmental issues has become more and more visible. Leading writers in different fields have expressed the thought that humanity is at a crucial point in history. Serious concern about human impact on the global environment (Burrows et al,1991; Bear & Slaughter 1993; Bowen,1994a; Blackmore,1994; Leiss,1994) is now widening. The scale of human impact on the major ecological cycles and the balance of nature appear to have gone beyond a critical threshold; it has according to Orr (1994) and Pepper (1984) exceeded the Earth's 'carrying capacity'. Reckless use of natural resources is depleting irreplaceable natural capital. Apparently, the world is facing ongoing environmental threats. Unsustainable assumptions, theories and practices cannot be continued. The view that nature exists for Man's exploitation is now challenged.

A major feature of such emergent changing world-views is a shift in attitude to modern science. According to various authors such as O'Riordan (1981), Redclift (1984), Yearly (1992), Orr (1992), Merchant (1994), Pepper (1996), all prominent voices in environmental debates, the claim of science being value-free and dispassionate in its orientations and methods is no longer universally tenable, and the modernist mechanistic theory of nature is held responsible for the present ecological crisis. Such triggers of change have hastened the process of the emergence of 'a new consciousness'; though it is important to note from the outset that this is far from universally accepted and is also contested. For example, Philip Stott (http://www.ecotrop.org) who takes an opposite stance, defends progress, and argues on behalf of scientific and technical development.

'Environmentalism' attributes the moral failure of human beings to live in peace and justice with one another and the rest of creation to a deep spiritual failure. Much of its message is concerned with finding new forms of understanding and co-existence with nature. Nature is seen to be in need of protection for its own sake, not merely to preserve its potential for Man. The nature of 'human nature' is a crucial matter for

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environmentalists. In a common effort to find solutions, some environmentalists (e.g.: Sterling,1993; Elliot,1994; Posch,1998) call for dialogue between all religions in the search for a shared paradigm of thinking and a new ethic in relation to 'sustainable development' and obligation to future generations. Their interest also involves the implications of such a 'shared norm' for educational practices. Education is being seen as a means to stimulate an awareness of the ethical and social dimensions of human actions. It is often hoped that through education environmental protection and sustainability become social concerns, which relate to everybody.

Examining different contemporary environmental ideologies and understanding the discrepancy between their philosophies could be the basis for understanding the underlying principles of the dominant practices of environmental education (EE) in any educational system. Consequently, it might also help in outlining proposals for EE reforms. This thesis argues that taking some EE concepts and teaching methodologies developed in the West into an Islamic context could form a solid basis for translating the deep philosophical and moral aspects of Islamic environmental tradition into the educational system. It is, however, beyond the scope of this chapter to enter fully into the debate over the development and the philosophical basis of environmental ideologies in the West. On the other hand, an outline of the growth and development of Western environmental thought is necessary.

The concern of this chapter is therefore to review the main strands in environmental thinking; specifically, to outline the assumptions of the contemporary 'ecocentric' movement's environmental ethics. It also seeks to clarify the concept of EE and outline the potential of EE, as understood in the West, in helping to bring about the transition to a sustainable society, and encouraging the learner to support and practice sustainable forms of activity. It researches into educational philosophy in the West from the ecocentric perspective. No attempt is made to be all inclusive. The purpose is to articulate the Western environmental ethics and in particular, following on from Chapter 2, to enable comparison with the Islamic principles, mainly the ethics for ensuring a sustainable living in order to reveal what is common and distinct between the two perspectives in relation to the environment. Cross-references to Chapter 2 will appear in the text in the appropriate places.

3.2 Main strands of Environmentalism: Green ideologies

The environment has a different meaning for people depending on their various interests and values. Out of the different strands of the environment/ecology movement spectrum, this section attempts to highlight the perspectives of the 'ecocentric philosophy' in order to provide the context and the background for us to consider the perspective of 'deep ecology' and the 'Gaia hypothesis', which are argued to be in close harmony with the Islamic philosophy of Man and nature.

Environmentalists (Huckle,1990; Ekersly,1992; Fien,1993; Hicks & Holden,1995; Job,1996) remain in dispute in their analysis of environmental issues and their support for perceived solutions to the associated problems, so that there is still no consensus on a single environmental perspective or ideology. As such, environmental ideologies represent various explanations and propositions for solutions of environmental problems, which have a particular social and political agenda. For example, Dobson (1992:12) states that:

"an ideology asks about the bases and validity of our most fundamental ideas and involves us in critical thought about the most hidden presuppositions of social and political life".

Huckle (1983:100), on the other hand, believes that:

"environmental ideologies may offer diagnoses and prescriptions which appear to explain environmental problems and offer solutions, yet they are a means of diffusing public discontent and maintaining the existing form of economy and society".

The different ideologies associated with the environmental movements reveal different perspectives on the causes and solutions of environmental problems. There appears considerable overlap (O'Riordan,1981; Job,1996) between the various currents of environmentalism. Nevertheless, in order to distinguish between the main strands of environmental thinking and their ideological underpinnings, it could be of interest to get an overview of the different sets of criteria used by different commentators on environmentalism. They have developed different spectrums of environmental thought.

Huckle (1987) categorizes environmental ideologies into three types:

- Conventional environmentalism. This maintains that ecological dangers can be avoided without major social and economic change. It appears to sustain the existing social order and its related inequalities.

- Utopian environmentalism. This believes that nature not only helps us understand ourselves and our world but is itself a source of moral values, which impose limits on economic development.
- Radical environmentalism. This regards disparities in environmental well-being as examples of more general disparities in social justice. (ibid:101-103)

Stevenson (1992) presents two broad political scenarios which are adopted within environmental ideologies, and are interesting to compare to Huckle's ideological categories:

I.   Conservative reform (within the present system)

a)   The technical approach: Its adherents believe that scientific and technological expertise can provide the basis for resolving quality-of-life issues without the need for social and economic changes.

b)   The political approach: involves working within the present political system. These reformers foresee a need for improving legal, political, economic and technological decision making, but without addressing the structure of our social and economic institutions.

II.   Radical reform (of the present system)

a)   The socially critical approach: treats environmental crises as symptoms of the dominant role of economic considerations and the unequal distribution of resources. It regards major economic reorganisation as the only way to rectify violations of both environmental quality and social justice.

b)   The alternative approach: rejects traditional forms of society and advocates a virtually pre-industrial life-style. (ibid:72)

Eckersely (1992), however, takes a different approach and classifies *anthropocentric* and *ecocentric* orientations of the environment, representing the two opposing poles of a wide spectrum of differing ecological orientations toward nature. He maintains that these currents of thinking vary markedly in their comprehensiveness and philosophical basis. Those environmental streams clustering toward the anthropocentric end of the spectrum, in Eckersely's view, can be more readily accommodated within existing political traditions.

The ecocentric political theorists, Eckersely maintains, adopt an ethical position that regards all of the various multi-layered parts of the biotic community as valuable for their own sake. The ecocentric approach regards the question of Man's place in the rest of nature as prior to the question of what are the most appropriate social and political arrangements for human communities. Eckersley's response is to the philosophical challenge accepting that we must widen the ambit of political discussion to include the question of our relationship to, and impact upon, the non-human world. He argues that

the ecocentric philosophical orientation provides the most comprehensive, promising, and distinctive approach in emancipatory ecopolitical theory.

O'Riordan (1983) voices a similar perspective to Eckersely. He describes environmentalism as having two fundamental orientations:

Technocentric- a human-centered (anthropocentric) view of the environment, which gives rise to a manipulative managerial approach to resource use and environmental protection. This is essentially founded on the reductionist/mechanistic worldview and, in terms of economic and social relations, it is largely a 'status quo' position.

Ecocentric- is based on a holistic nature/Earth-centred view of the world, which gives rise to a nurturing approach.   (Cited in Sterling,1993:83)

Table 3.1 represents a simplified version of O'Riordan's model of the human-environment relationship.

Table 3.1- Perspectives on the human-environment relationship

Holistic Ecocentric		Reductionist Technocentric	
Gaiaism	Communalism	Accommodation	Optimism
Deep ecology	Soft technology	Managerial	Cornucopian
Dark-green	Red-green	Light-green	Non-green: Grey

(O'Riordan, 1983, cited in Sterling,1993:83)

Drawing from O'Riordan and others, Job (1996) explicitly specifies two sets of criteria that can be applied to exploring the many genres of environmentalisms. One relates to the worldview regarding the relationship between people, nature and the Earth. He identifies a spectrum of positions. The technocentric perspective at one end of the spectrum is normally linked with a people-dominant view of the Earth. It is characterized by a view of the Earth as a machine whose operation can be understood, predicted and managed using the tools of classical science. A central feature of its outlook concerns the nature of progress in terms of material advancement, increasing level of consumption and development of high technology. The opposing ecocentric perspective at the other end of the spectrum encompasses a collection of positions that are based on a sustainable Earth with an equality of rights, which include all species, landscapes and resources.

The second set of criteria specified by Job is dominantly political and relates both to the perceived causes of environmental degradation and to the social, political and economic changes which are thought to be required to achieve sustainability. Again, Job distinguishes a spectrum of positions, with free-market environmentalists drawing inspiration from the political right at one pole and an amalgam of ecosocialist and ecoanarchist perspective at the other end (see Table 3.2).

Table 3.2 –Summary of some of the distinctions between technocratic and ecocentric perspectives.

	Technocentric	Ecocentric
Earth view	*Mechanistic/Reductionism* The earth and its subsystems can be likened to a machine whose behavior is pre-dictable in cause- effect terms. The whole is viewed as the sum of the parts.	*Gaianist/Holistic* The earth is likened to a single living organism, which adjusts its environ-ment in ways that sustain life. The whole is greater than the sum of the parts. The complexity of its feedback mechanism and the possibility of chaos are constraints on understanding and predictability.
Knowledge and under-standing of the earth	The functioning of the earth machine can be understood by scientific investigation of its parts. Future states can be predicted and changed through the environmental man-agement.	Understanding of the earth is not limit-ed to scientific knowledge based on logical positivism. Sensory, emotional and spiritual ways of knowing have equal validity.
Perspective on resource depletion and pollution	Human ingenuity can solve environmental problems through resource replace-ment. Technical solutions can be used to control pollution.	Fundamental changes in lifestyle are needed to live in a compatible way with the earth, involving restraint on energy and resource use. Pollution can be solved by eliminating waste and using natural processes to purify water.
Perspective on develop-ment issues	Poverty can be eliminated by limiting human numbers and developing industrial technol-ogy to increase production and relieve people from drudgery.	Excessive consumption in rich coun-tries is the main cause of degradation of the earth. Poor countries in dept are forced to over-exploit the recourses.
Social/ Political perspective	Technology extends and amplifies human experience, freeing people from mundane tasks and liberating creativity.	Inner, personal ecology is linked to outer ecology. Abuses of nature by people are seen as extensions of social patterns of domination. Excessive con-sumption attempts to compensate for inner emptiness. Solving environmen-tal problems lies within our selves and society.

Source (Job,1996:25)

Gough et al (2000) challenge O'Riordan's analysis and offer a counter-weight to his model. In their view, O'Riordan's model takes insufficient account of cultural pluralism and is incomplete by virtue of its failure to incorporate a position which balances the anthropocentric and the ecocentric. Their main critique concerns the positions of the 'communalism' column under the ecocentric heading and the 'accommodation' column under the technocentric heading arguing for a blurring of fixed relationships - between the extremes of the ecocentric/anthropocentric polarity. This, in their view, raises significant issues for the purposes and practice of EE.

Redclift (1993:42) summarizes the essence of the environmental message as follows:

"unless we cultivate attitudes worthy of our status as human beings, we may well end up in using our knowledge and skills in our destruction".

As a response to Redclift's claim and for the purposes of this research, the principal focus of the following section is to explore more fully the ecocentric philosophy, that which is argued to be in close harmony with Islamic environmental ethics.

3.3   The Ecocentric perspective

Ecocentrism is a rejection of a purely anthropocentric perspective; it is grounded in a vision of nonexploitive science and technology. The ecocentric movement has been a response to modernity's dehumanizing tendencies and its destruction of the environment. The modern ecocentric ethic was first formulated by Aldo Leopold during the 1930's, who argued for the importance of education in creating obligations towards the land and towards other people (Merchant,1992). A central concern of the ecocentric ideology is its ethical position; an ecocentric ethic guides the thinking of most deep ecologists. It maintains that all things in the cosmos have moral significance and restores a moral and cooperative relationship with the rest of nature. Ecophilosophy perceives the natural world (Robottom & Hart,1993; Milbrath,1996) to be vested with the same values as the human world; this leads to notions of stewardship. It regards reality holistically in terms of complex web-like relationships, which are interdependent with the systems of which they are part. It is a worldview that reintegrates mind-body, and fact-value dichotomies.

Ecophilosophy has a strong sense of respect for nature. It reflects the awareness by many people that something is wrong concerning the human treatment of the biosphere. It recognizes the interconnectedness of all things and the human place in the network. It advocates the enhancement of harmony with each other, other beings and the planet. Its view of life is the 'new paradigm' emerging to replace the mechanistic worldview.

The significance of an ecocentric perspective in the context of this thesis can be comprehended in connection with Chapter 2, which displays the moral contribution of Islam for the preservation of the integrity of the Earth's constituents. Deep ecology and Gaiasim are classified under the ecocentric perspective, and we now go on to consider these in some detail in order to justify their relevance to Islamic theology on Man and nature.

3.3.1   Deep Ecology

The Western/industrial world-view was based on certainty, predictability, control and rationality (Yearley,1992; Bear & Slaugher,1993; Pepper,1996), all being the outgrowth of modern Western science. Critics of the Western technological worldview (O'Riordon, 1981; Devall & Session,1985; Eckersley,1992; Orr,1994) believe that its ultimate vision is the total conquest and domination of Nature and that it promotes destructive values which destroy the basis for stable human communities. It tends to isolate consequences, rather than realizing how net-worked they are. If that kind of isolationist thinking persists, it is feared that it will lead to a bleak future for mankind.

Bear and Slaughter (1993) believe that:

"the current frame of reference had its origins with the age of scientific enlightenment, constructing a way of looking at the world which permitted later generations to believe – mistakenly – that they were 'masters of nature', separate from, or above, natural processes ... We are learning the hard way that this is simply not true".   (ibid:13)

Bowen, (1994a:113) adds that:

"we are estranged from reality and inclined to treat as valueless everything that we have not made ourselves".

Human domination and destruction of nature constitutes deep ecologist central concern. The first influential use of the term 'deep ecology' is credited (Dobson,1992; Pepper,1996) to the Norwegian, Arne Naess in 1972. He developed two norms or 'intuitions' which reveal the importance of moving to the philosophical and religious level of wisdom:

- Self-realization. This requires an identification, which goes beyond humanity to include the non-human world.
- Biocentric equality. This intuition is that all organisms and entities in the ecosphere are of equal intrinsic worth.

'The practical implication of these norms is to suggest that we should live with minimum impact on other species and on the Earth in general'.   (Naess: cited in Devall & Session,1985:66-68)

Since then, several leading writers have promoted 'deep ecology' as the philosophical basis of green practices and lifestyle. For example, Devall & Session (1985) identify the concept of 'deep ecology' as follows:

"it goes beyond a limited piecemeal shallow approach to environmental problems and attempts to articulate a comprehensive religious and philosophical worldview .... the wholeness and integrity of person/planet together with the principle of 'biological equilitarianism' are the most important ideas in deep ecology".

(ibid:65,132)

The notion that humans are intimately a part of the natural environment fosters the deep ecologists' claim that the universe is made of one basic spiritual and material entity symbolized as 'God' or nature (Pepper,1996), which implies 'monism'. This core belief shares the Islamic monotheistic conception, as discussed in Chapter 2, section 2.2. Deep ecologists also hold that they would question whether humans really need so many goods in the first place. As also discussed in chapter 2 (section 2.4.4), Islam promotes moderation in consumption.

Many thinkers and leading scientists in the West are questioning some of the premises of the dominant Western world-view. A holistic philosophy guides deep ecologists so that they do not totally rely on ecological science; they also value emotional knowledge and spiritual notions, which they call 'eco-wisdom'. The ultimate goal of deep ecologists is for humans to contemplate nature. Deep ecology is seen to have certain fundamental values that can provide a motivating force, aimed at saving the planet from human

exploitation and domination. It presents a spiritual perspective for the solution of the environmental predicaments. It recognizes that success of such spiritual path depends mainly on the determination of the individual for affecting any change. Deep ecology basically seeks transformation of values and social organization. It deals with value clarification and restrains the activities on the part of human beings with respect to resource use and domination over other individuals, communities and all of nature.

In essence, Islam stresses the cultivation of the individual's soul as a basis for the sustenance of the human community. The principles of deep ecology are seen in this thesis to be consistent with some basic spiritual approaches in Islam. They seem to fit closely to the associated Islamic believe in the 'covenant with God', the 'trust from God' and the position of Man on Earth as discussed in Chapter 2. A specific aspect of deep green thinking is based on the 'Gaia hypothesis' which is distinctive and has also resonance with the Islamic view of Earth and nature. It is to this we can now turn.

3.3.2 The Gaia Hypothesis

The Gaia Hypothesis was originally formulated by James Lovelock in 1968 and was presented in 1979, in his book Gaia: *A New Look to Life on Earth.* Lovelock considers himself speaking out for Gaia. Gaia (the Earth goddess), is the concept of Mother Earth as it was called by ancient Greeks. Lovelock (1988) defines Gaia as the largest 'creature' on Earth. She is a complex entity involving the Earth's biosphere, atmosphere, oceans, and soil; the totality constituting a feedback or cybernetic system which seeks an optimal physical and chemical environment for life on this planet. The thesis is that the Earth itself is a coherent system of life, self-regulating, self-changing, a sort of immense organism, and since the Earth is alive, it can also become sick. The health of the Earth is most threatened by major changes in natural systems. In order to maintain the health of Gaia the theory advocates reduction of growth, pollution and waste. This view has become an important model for the Green movement, and one of the bases of its philosophy about the need for a harmonious relationship between Man and the environment (Lovelock, 1988).

The Gaia Hypothesis is seen by its advocates (Lovelock,1987; Burrows et al,1991; Merchant,1994; Clark,1983) as a holistic ecocentric concept that contrasts with that of

anthropocentric perspectives. It is seen to be able to underpin the kind of spiritual change that they feel necessary if humanity is to ensure its ecological survival. It pushes the ecological worldview further by asking the question: Is the Earth a living organism?

Gaia could be considered a new theory that views planet Earth, and all its life as part of one great organism. The significant implication of this theory is that the survival of human species is not necessary to the survival of the planet. Any species that adversely affects the environment is doomed, but life goes on.

Following Lovelock, Burrows et al (1991:218) outlined the theory that Earth, its rocks, oceans and all its life can be viewed as part of one great organism, evolving over nearly four billion years of geological time. This ties in with Clark's (1983) statement that the Gaia hypothesis assumes that the biosphere has operated as does a living organism, modifying its own environment and so maintaining conditions suitable for its own survival. The hypothesis assumes that Gaia has survived disasters in the past, but there must come a time when so many species have been eliminated, so many connections broken, that Gaia no longer has the internal diversity needed to adapt to changing circumstances. Gaia subsists on the changes and relationships of species and ecosystems. Her stability is not that of unchanging emptiness: different elements play their parts and can depart, and we have no guarantee that the human species has any different sort of lease. We may perish too; even Gaia may die. What matters is the maintenance of Gaia and her constituent ecosystems, not the preservation at all costs of any single line (even our own).

Clark envisages that:

"if we are lucky we may yet have time to slow down our destruction of our kin, and rediscover that we share a commonwealth. If we are not, Gaia's ancient defences against usurping elements may yet prove strong".   (ibid:196)

The message is that, since Gaia is liable to be sick (Dobson,1992), it deserves protection, and this is an anti-anthropocentric message in that it demands that humans should bury their projects if they prove harmful to the health of Gaia. Lovelock (1994) considers that in Gaia, Man is just one of the species, neither the owner nor the steward. Yet he holds that the future of Man depends much upon the right relationship with Gaia, and that

living with Gaia is not so different from a human relationship. It is an affair of the heart as well as the head. For such a relationship to succeed it has to be conducted lovingly, and must be renewed on a daily basis.

The idea that the Earth is a living organism is at the outer bounds of scientific credibility. Nevertheless, there is a growing international awareness that the entire Earth is a living system (Capra,1996), and that modern industrial consumerist lifestyle has had its diverse impact on the planet's health. The Gaia hypothesis assumes that humanity might be signing its own 'suicide note' by subjecting nature to the violence of exploitation and pollution. The general thrust of the philosophy is the displacement of Man from his assumed position at the centre of creation. It assumes that the myth of the great Mother is part of most early religions and tries to show that God and Gaia, theology and science are not separate but a single way of thought. Its followers stress its spiritual dimension and are aiming that Gaia should be a way to view the Earth, ourselves, and our relationships with living things. Its inventor (James Lovelock) admits that the idea has existed since ancient times in many cultures, and that he has simply brought new life to it.

A relatively similar metaphor to Gaia has existed and still exists in the Islamic tradition, as described in detail in Chapter 2, section 2.5. According to Islamic theology, the integration of spiritual and material aspects of reality regard all constituents of nature as sacred and ever praising God. The notion of perceiving planet Earth possessing living attributes, as well as the position of Man in relation to other creations, and most distinctively the need for constraining Man's actions have their resonance with the Gaia hypothesis. Unfortunately, its proponents have not recognized such close connections between their hypothesis and the Islamic theology.

3.3.3 Arguments around 'The Gaia Hypothesis'
Gaian discourse involves a questioning of the current nature of scientific inquiry. Many scientists felt indignant about Lovelock's claims, while it was seen (Dobson,1992) by the green movement to be potentially useful to its cause. Bear and Slaughter (1993) point out that many writers claim to see the Earth in its wholeness, and reveal their concern for the Earth if humans consider themselves disconnected from it. They hold that the piecemeal

approach, encouraged by the division of human knowledge into subjects and disciplines has closed our eyes to seeing Gaia as one living system. Therefore, they believe that Lovelock's theory about life on Earth seems to be working in the right direction. Lovelock (1988) admits that Gaia has remained a hypothesis but he believes that like other useful hypotheses, she has already proved her theoretical value, if not her existence, by giving rise to experimental questions and answers. Supporters of this idea claim (Yearley,1992) that it has helped them understand the ecology of the Earth through the emphasis on the contribution which living organisms make to the maintenance of the world. Yearley sees that the pragmatic strength of the Gaia hypothesis is that it offers to combine environmental science with morality.

Burrows et al (1991) indicate that the theory has encouraged the emergence of new paradigms about evolution of life and Man. They predicate that the concepts of neo-Darwinism, concerning evolution theory, are beginning to be perceived as inadequate to explain the behaviour of the biosphere, as a single living system where constituent parts co-operate to achieve stability. With reference to Elisabet Sahtouris's book 'Gaia – the human journey from Chaos to Cosmos' (1989), they show how, by understanding Gaia and the true roles of co-operation and competition in evolution, answers to great problems, whether of economic, ecological, political, human, or spiritual concern, may be discovered. Conversely, Myerson & Rydin (1996) point out that some commentators within science argue that the Gaia has failed to satisfy the entry requirements to biology, since it is contradicted by the defining framework of all biological theories.

Dobson's argument (1992) maintains that if Gaia is a self-regulatory system, it might just be able to respond adequately to maintain the status quo (humans included) irrespective of what we throw at it. If this were to be confirmed, Dobson argues, then Lovelock's Gaia hypothesis might just turn out to be a more potent weapon for the green movement's opponents than for the movement itself.

Furthermore, Yearley (1992) states that:

"most arguments have been addressed to the logic of the Gaia hypothesis. Thus it is argued that there are problems about the idea of ascribing purposes to Gaia. If it is to be more than a metaphor, Gaia would seem to need to have purposes in the way that only humans and (conceivably) a few animals do. If one accepts that it might be possible to talk of the planet's purpose, it is impossible to know what that purpose is".   (ibid:146)

According to Lovelock (1987) the only serious criticism of Gaia has been raised by some biologists, namely that there is no way for natural selection to lead to altruism on a global scale. Such an event, they say, would require foresight and planning to be included in the genetic structure of living organisms. In defending the Gaia concept Lovelock argues that the answering of this very constructive criticism begs questions about the validity of current views of evolution and theoretical ecology. He adds that, like a religious belief, it is scientifically un-testable and therefore incapable in its own context of further rationalisation.

The Gaia Hypothesis (Lovelock,1988; Burrows et al,1991) has been the subject of considerable debate and much scientific work has been undertaken to test the theory. But it has gained a central place within environmental arguments, and adherent of ecocentric views base their thinking on aspects of the Gaia hypothesis (Merchant,1994; Pepper,1996), and have drawn from it. No doubt, sustaining human life on Gaia is a fundamental concern to humanity. It is with reference to this notion that it could be useful to examine the concept of sustainability from other perspectives, as in the following section.

3.4 'Sustainability' and 'sustainable development'- Western Perspective

The rising level of problems caused by environmental degradation in recent decades have generated growing concerns over the stability of ecosystems, the sustainability of present patterns of development and the quality of life to be enjoyed by present and future generations. The word 'sustainable' is used in several combinations, such as 'sustainable development', 'sustainable economy', 'sustainable society', 'sustainable living' etc. 'Sustainability' and 'sustainable development' have now become the guiding principles of environmental policy; or at least an environmental part of the rhetoric surrounding policy. However, sustainability takes a range of meanings, and different ideological perspectives can give different interpretations. The process of defining and clarifying the concept 'sustainability' in operational terms has not ended.

The term 'sustainable development' has been criticized as ambiguous and open to a wide range of interpretations. The Stockholm conference on *The Human environment* held in

1972, formed the immediate frame for the development of the ideas of sustainable development. Sustainability was defined by the Bruntland report as being:

"development that meets the needs of the present without compromising the ability of future generations to meet their own needs".   (Cited in Adams,1990:59)

Trzyna (1995) indicates that sustainability is not a precise goal but a criterion to guide attitudes and practices. One of its main characteristics is that it forces us to look at many dimensions of a situation. Adams (1990) comments that, sustainable development, like environmentalism, is a blend of technocentrist and ecocentrist worldviews. He suggests that, as a definition, it is superficially attractive, but it is a better slogan than it is a basis for theory. He argues that the ideology of sustainable development is eclectic and often confused. Environmentalists have attempted to capture some of the vision and rhetoric of development debates. Adams expresses his regret that they often have no understanding of their context of complexity. He warns that environmentalist prescriptions for development, shorn of any explicit treatment of political economy, can have a disturbing naïvety. Engel (1992) defines 'sustainable development', for example, as the kind of human activity that nourishes and perpetuates the historic fulfillment of the whole 'community of life' on Earth. He defines world development being more than economic process; it is a matter of moral commitment to human solidarity.

Myerson and Rydin (1996) have discussed the 'rhetoric' of such thinking and maintain that 'sustainability' and 'sustainable development' apply to many situations including the economic, cultural, and environmental. The terminology promotes new thinking: new ethics, new politics, and new economics. Viederman (1995:37) has a similar notion, defining 'sustainability' as being:

"a vision of the future that provides us with a road map and helps to focus our attention on a set of values and ethical and moral principles by which to guide our actions ... to ensure to the degree possible that present and future generations can attain a high degree of economic security and achieve democracy while maintaining the integrity of ecological systems."

Huckle (1996:3) maintains that:

"like liberty, justice and democracy, sustainability has no single agreed meaning. It takes on meaning within different political ideologies and programmes underpinned by different kinds of knowledge, values and philosophy".

Hicks and Holden (1995) also agree that the term sustainability is a contested one. It is used to mean any thing from 'accelerated economic growth' to the integration of social, ecological and economic goals on an equal basis in a low or no-growth society. Beare and Slaughter (1993) indicate that for something to be 'sustainable' it must be able to continue in indefinite use without causing excessive disturbance or damage. In resource terms it implies continuous use without significant depletion. Their argument is that looking at the Earth simply as a resource to be used implies that humans have intrinsic rights to exploit without being subject to any limitations. Different perspectives on sustainability become linked to different perspectives on sustainable development, economic development, environmental protection, social or equity considerations.

Sterling (1996) has also usefully discussed the 'background' of differing interpretations of sustainability. The technocratic view sees sustainability as a matter of making adjustments to present human activities. The ecocentric view, at the other end of the spectrum, integrates ecological sustainability with social justice. He concludes that sustainability presents a learning imperative that challenges the adequacy of many established goals and educational processes.

Sustainability requires a high degree of 'ecological literacy'. Orr (1992;1994) argues that the requirements of sustainability will lead us to recognize that individual and collective well-being is tied to that of the larger fabric of life. Ecological sustainability, he argues, is the task of finding alternatives to the practices that got us into trouble in the first place. It will require reduction in consumption in wealthy societies and changes in the kinds of things consumed toward products that are durable, recyclable, useful, efficient, and sufficient. This, Orr predicts, will occur when enough people choose to consume less or when scarcity is imposed by circumstances and enforced by government fiat.

Other writers take a holistic perspective. Khan (1994) notes that a sustainable society requires deep changes in the way we perceive, think about and value environmental systems. She summed up the principle of sustainability being related to:

- People as part of nature.
- Environmental values and ethics.
- Quality of human life (as opposed to standard of living).
- Bio-diversity.
- Natural cycles.

- Depletion of finite resources.
- The Earth's carrying capacity. (ibid:24)

On the same line of thought, Milbrath (1996) considers that we are the only creatures that can imagine their own extinction; we cannot make a society sustainable without changing the way we think. A sustainable society, he implies, would support only a simple lifestyle. It would reaffirm the belief, once held in primitive societies, that knowledge of nature's workings is basic to being educated. It would recognize that we are part of a global bio-geo-chemical system; and that our destiny is tied to the continued good functioning of those systems. Everything is connected to everything else. This idea of course, is closely linked to Capra's thesis of the web of life (1996) supported by Harvey in his analysis of nature (Harvey,2000).

Sterling (1993) echoes a similar perspective, arguing that in order to overcome our 'ill-being' we must follow certain norms for living and change our present practice of life. Slocome and Bers (1991) maintain that seeking sustainability means redesigning society so that human activities do not have long-term negative impacts on either the environment or on society. Huckle (1996) maintains that in order to move toward sustainability people should develop a personal ecophilosophy and practical lifestyle. Only by 'treading lightly on the Earth' will they reunite mind and body, people and nature. Engel (1992) raises an interesting point by suggesting that approaches to sustainable development must differ depending on the cultural heritage and religious traditions of a society.

Apparently, sustainability is a concept that is provoking a strong debate in the Western literature. The opaque nature and flexibility of the term poses substantial challenge to economic orthodoxy. All actions have either positive or negative consequences for the environment. Environmentalists question the viability of continued growth; they throw light from many angles on the different aspects of sustainability, but fundamentally, development cannot continue indefinitely with depleted environmental resources. The agreed understanding seems to be is that we must not take from nature more than what nature can replenish. This means adopting lifestyles and development paths that respect and work within nature's limits. In summary, sustainability depends on accepting, individually and collectively, a duty to seek harmony with other people and with nature.

There is a moral tie between Man and nature in Islam; Islam takes the preservation of the integrity of the Earth's constituents as a primary issue. Man has been endowed with considerable power over the Earth, but keeping with God's orders implies that he has the obligation to care for every thing in his 'trust'. Islam enjoins its followers to limit their unnecessary wants. Development in Islam is not only an economic phenomenon; it is also a vehicle for betterment of human life on all its levels. This section in conjunction to Chapter 2, argues for the need to reiterate the Islamic view on sustainable development with regard to the crisis facing humanity today within the collaborative attempt to steer the 'spaceship Earth' to safety.

3.5   Western environmental ethic- international dialogue

The modern scientific worldview seems to be constrained by emerging ethical considerations. From the perspective of the deep ecologists, the Western world-view is now being seen as fragmented, not connected. Man is an integral part of nature, not 'over' or apart from nature. Several international documents now underpin most contemporary environmentalist thinking on defining the ethics for global 'sustainable development'. The *'World Conservation Strategy'* (WCS) was published in 1980, prepared by IUCN in co-operation with UNEP, Unesco and WWF (IUCN,1991). It marked the first official notice that ethics was a matter of explicit concern to the international conservation movement (Engel,1992). It attempted to outline an 'achievable strategy', to restore balance to the life of the planet. However, opinion about the WCS was divided. It has been criticized as being resource oriented and human-centred. Adams (1990) was not convinced by the WCS's view about development. He holds that it suffers from being primarily theoretical rather than applied, and is concerned with the local scale of development rather than the global. Palmer (1992) as well as Posh (1998) hold that the document paid scant attention to any value system other than science-based conservation ethic. They believe that it is weak because it is ultimately concerned with humans rather than with valuing nature. Baez (1986), on the other hand, considers that the long-term implementation of the strategy's goal implies the generation of an environmental ethic.

In 1987, the Brundtland report *'Our Common Future'* was presented to the UN General Assembly, setting out a global agenda for change. It became highly controversial among environmentalists. Ecocentrics (e.g.: Adams,1990; Sterling,1993) saw the report as an

extension of the WCS based on the reductionist, mechanistic world view. Its point of view was not seen as occupying an ecocentric philosophical position. Its prescription was based on an economic and not an environmentalist vision. The argument against it was based on the insight that the report saw poverty as is putting pressure on the Third World environment, and that it is economic growth which is the means of removing that pressure.

In a publication entitled *'Caring for the Earth'*, the IUCN, UNEP and WWF, in 1991 set out a strategy proposing that the respect and care humans owe each other and the Earth ought to be expressed in an 'ethic for living sustainably'. It extended and emphasized the message of the WCS, and attempted to contribute to the recognition of the need for sustainable development and international equity. The principles for sustainable living were identified as follows:

- respect and care for the community
- improve the quality of human life
- conserve the Earth's vitality and diversity
- minimize the depletion of non-renewable resources
- keep within the Earth's carrying capacity
- change personal attitudes and practices
- enable communities to care for their own environments
- provide a national framework for integrating development and
- conservation
- forge a global alliance.   (IUCN, UNEP,WWF, 1991)

The establishers of the strategy acknowledge that the principles are described in broad terms and are meant to be interpreted according to the context of each country.

Following this, the United Nation's *'Earth Summit'* was held in Rio de Janeiro, in 1992. It endorsed 'Agenda 21', a blueprint for the actions needed in order to promote sustainability. It focused attention on the crucial role of EE in relation to sustainability; again its proposals and agreements were far from acceptable to all. Ecocentrics (e.g.: Huckle,1996; Sterling1996) derided the whole approach of the Rio declaration on environment and development. In their view the real causes and solutions were masked by rhetorical talk in the interest of the rich. Sterling (1993) comments that:

"while some rhetoric may not have changed much since the UN conference held twenty years earlier, the quality of the environment has deteriorated .... Social change requires us to know where we are, why we got here, how to change direction and what direction to take if we wish to create an ecological sustainable world".

Other radicals (e.g.: Beare & Slaughter,1993; Marcuse,1994) claimed that while reform was necessary the conference's declaration was not enough to effect change. They call for a new spirit and a 'new outlook'. The response of the media and the public to the conference's outcomes was the emphasis on a new consciousness and new remedies for environmental crisis (Myerson & Rydin,1996).

Khan (1995) identifies some elements of environmental ethics as including:

- Appreciation that humanity is not above and apart from the rest of nature, exempt from its dynamics and constraints.
- Recognition that there is intrinsic value of the conservation of all naturally occurring life and land forms, separate from any instrumental value that they may have for humans.
- Given that all living involves some use of other living beings, acceptance of an ethos of 'treading lightly' in all respect. (ibid:43)

What is striking about this list is how very closely those elements of ethics seem to parallel the fundamental Islamic principles of Man's position and relationship to nature, as discussed in Chapter 2. Ecocentrics consider that the future of humankind demands a new ecological and environmental conception, a 'new-world ethic' as a guide towards a sense of oneness with the rest of nature. Islam addresses the needs of modern society, yet it engenders in its believers a sense of subduing the Earth with the mood of care taking appreciation and stewardship ethic towards the rest of God's creation. It advocates the rational utilization of natural resources.

In 1993 an international assembly of religious and spiritual leaders, called the 'Parliament of the World's Religions' met in Chicago and endorsed a declaration entitled 'Towards a Global Ethic'. The principal focus of this section was to provide the justification for the recognition that such a 'Western ethic' is a matter of concern of most religions, and to turn the attention to the links between the 'Western world ethic' and the Islamic environmental ethics discussed in Chapter 2.

3.5.1   The role played by Western religion

Considerable effort has been expended by some 'deep ecologists' in showing that the dominant motif in Western philosophy has been anthropocentric. This search has sparked dialogues between religious leaders and conservationists which began with Lynn White's 1967 thesis (O'Riordan,1981; Engel,1992; Merchant,1994) on the role of 'Judaeo-

Christian teaching' in determining environmental cognition. There is disagreement between ecologists on the role of the Judaeo-Christian tradition in enforcing the development of a mainstream Western worldview. White recognized the moral significance of religion and theorized that the domination of nature and quest for progress at all costs has stemmed from the 'Judaeo-Christian mandate'.

O'Riordan (1981), on the other hand, notes that Black (1970) argued that the ecological 'crisis' is not so much a product of Judaeo-Christian teaching. In analyzing the 'stewardship' idea, which is referred to in the Genesis story, Black maintained that the mediating check against potential disruption is the middle path between destruction and ecological determinism. According to Black, in Biblical times the steward had the dual role of managing the estate for profit while also ensuring its long-term viability. The steward was God's deputy or representative in a symbolic sense. The execution of stewardship was therefore the ultimate act of God's will on Earth through his designated manger, Man. Equally central to the stewardship symbol was the notion of property. The original text and various interpretations are all ambivalent as to the precise relationship between God, Man, and Nature. This perspective, as argued in Chapter 2, is revived and replicated later in Islamic theology.

Attfield (1983) concludes that the assumption of the dominance of humankind over nature is an inaccurate interpretation of the Jewish and Christian belief. He goes further to claim that proposals for an environmental ethic are a re-expression of long-standing themes of Western culture, albeit of themes of which most (and possibly all) other cultures have counterparts. Therefore, in his belief, it is neither necessary nor possible to consider proposals for a *new* ethic. It is only by exploiting themes already present in Western culture, ethical, and religious traditions that an adequate and useful environmental ethic will be developed.

Some ecologists (e.g.: O'Riordan,1981; Baez,1986; Sterling,1993) refute Attfield's claim, maintaining that the eco-centric root of modern environmentalism is nourished by the philosophies of the romantic transcendentalists of the mid-nineteenth century and call for a new sense of humanity to be born in humans.

Ogilvy (1996:67), an advocate of the technocratic perspective, totally rejects the role of religion and spiritual aspects of life in effecting solution for environmental problems. He contends that:

"in place of the Christian heaven on Earth we are confronted with a plurality of religions: Muslims, Buddhist, Christian, Jewish, and any number of other sects. In place of the modern idea of secular progress we find a plurality of standards for a more perfect humanity. So it's hard to name a norm and claim that it applies to everyone everywhere."

This view seems at odds with the attempt to find universal values and wisdom evolving in the West, as well as with the Islamic perspective of globalization and oneness of humanity. Ogilvy continues his disdain:

"virtually every form of orthodox religion seems to me to be subject to charges of childishness, wish fulfillment, and an indulgence in magical thinking ...... multiplicity of religions means that they are in danger of doing more harm than good. We don't need more *jihad*."   ibid:76)

However, those reflecting the ecocentric perspective (e.g.: Holdgate,1990; Gosling,1990; Engel,1992; Merchant,1992), express their commensurate loss of trust in the capacities of modern science to bring humanity into harmony with the environment. For instance, Palmer (1998) argues that there are no right or wrong religions and maintains that the most important principles of deep ecology are included in some basic principles, which all religions share.

More particularly, Holdgate (1990:94) argues that:

"the world needs prophets today as much as it ever has done and that we need recognition that tomorrow's environment is the responsibility of everyone today".

3.5.2 Emerging ethics and the educational challenge

Despite of the diversity of views around the origin of ecocentric perspectives, it appears that there is a widespread call for profound change in human attitudes and actions based on new ecologically oriented value system. A number of high level calls (Unesco-UNEP,1983; IUCN,1991) have dissociated themselves from Western perspectives which see Man as an outside force separate from the environment and destined to dominate and conquer nature. Humanity is seen as the only species whose activities are putting the whole life on Earth at risk. Modern ecocentric environmentalism recognizes that the problems facing humanity today (O'Riordan,1981; Milbrath,1984; Orr,1992; Myerson

and Rydin,1996) reflect the inadequacy of the structures of modernism. It demands that a new ethic, embracing plants and animals as well as people, is required for human societies to live in harmony with the natural world.

Elliot and Gare (1983:x) define an environmental ethic as being:

"an ethic, which allows that future generations, non-human animals and non-sentient nature are all morally considered".

In the same vein Holdgate (1990) considers that the basis of our action must be a shared ethic, and that it must be based on a code of values that reflects a deep sensitivity to the ecological interdependence of our planet, and a respect for life in all its forms. Viewed from another angle, Tough (1996:181) believes that humankind needs a better understanding of common beliefs that have caused the present crisis. We need to know why people behave as they do, undermining the chances of a flourishing future, and how such things can be changed.

There is a consensus among eminent statesmen (e.g.: Al Gore,1993) and the environmental literature that in order to meet the steady degradation of our living conditions there is a need for a 'world ethic of sustainability'. It is as if the world today is beginning to realize that the roots for the ecological crisis reach deep into human nature (Unesco-UNEP,1987; IUCN,1991; Engel,1992; WWF,1994; Bookchin,1994). This has led to the appreciation of the potential contributions of religion for evolving a new life-style with new methods of production and new patterns of consumption. The emerging worldview, considered as a statement of values, is claimed to be rooted in ecophilosophy (Pepper,1987; Redcliff,1993, Palmer,1998) and is having profound effect on the environmental movement. The 'ecological ethic' derived from this is based on the idea of sanctity of life. It is the hope of many Western environmentalists that all communities inhabiting the Earth should adopt such a perspective, on a universal scale. It is the belief of its proponents that people need to understand the relatedness between living and nonliving resources and to be motivated to conserve them from exploitation. This is seen to be unachievable without fundamental changes in Western values. Such an ethic represents an educational challenge.

This section has argued that the role of religion might no longer be pivotal in Western culture. In Muslim culture, as argued in Chapter 2, despite the accommodation of modernization that has carried with it a consumeristic lifestyle, religion is still prevalent today. Those sentiments for more enlightened attitudes towards nature called for in the Western culture, are strongly reflected in Islamic theology. It seems that Western intellectuals are not aware of the Islamic environmental ideology. The sacred tradition of Islam includes the vision and wisdom needed to address the spiritual problems that underlie the environmental crisis. More importantly, the possibility for Islamic tradition to contribute to the newly emerging shared 'Western environmental ethic' would seemingly help consolidate the claim of a universal significance.

The following sections provide radical proposals and suggestions, from the perspectives of some Western scholars, for the need of educational reforms and for the justification of introducing the concept of education for sustainability (EfS) for school aged students.

3.6   Towards re-orientation of education - Ecocentric perspective

There seems wide agreement that education has the potential for catalyzing change. Our filtered perceptions, cognition, and beliefs about nature (Pepper,1984; Orr,1992; Robottom,1992; Fien,1993) are a powerful determinant of what we do in the environment. It is the curriculum which acts as a principal 'filter reflecting one or more environmental ideology'. Such ideologies differ according to how curriculum planners perceive the purpose of education, the social role of school, the curriculum, and the teaching and learning itself. Each ideology highlights differing orientations to education. Considering the two poles of the environmental spectrum discussed in Section 3.2, technocratic worldviews preserve rather than challenge critical consciousness concerning environmental problems. This section tries to highlight the philosophy of education from the ecocentric perspective.

A number of radical educationalists (Orr,1994; Hicks,1996; Sterling; 1996; Huckle,1996) express their skepticism about existing educational organizations. They consider that prevailing education systems emphasize cognitive development, are being used as a means of maintaining the political and economic status quo, and are designed to further the conquest of nature. Orr (1992) builds his argument on the notion that the crisis

humans face is first and foremost one of mind, perception and values. In his view, graduates of modern educational institutions are becoming more ignorant because they are not assisted to gain knowledge about how to inhabit their places on the planet sustainably. He poses questions around the role of education:

"if education does not teach us that we need to renew our commitment to a sustainable human future and to be aware that our well-being is inseparable from that of nature, then what is education for?

(Orr,1992:147)

Such criticism connects to Robottom's (1992) assertion:

"behind any educational process lies a philosophy, a moral philosophy .. the educated individual should be in a position to ask such questions as: who took this decision? According to what criteria? With what immediate ends in mind? Have the long-term consequences been calculated? In short, he or she must know what choices have been made and what value system determined them? .. professional development in EE needs to be seen as problematic and amenable to change."   (ibid:83-84)

Elsewhere Robottom (1995) suggests two alternatives to the dominant technocratic approach in education. First, redefining curriculum content and second, re-defining the role of the academy, which may need to change from a centrally determined 'solution' in the form of curriculum materials to conditions for teachers in their respective communities to carry out their theories, practices and educational predicaments.

It seems that calls for changes in educational practices are widely debated; though views would vary on to why changes are needed and on to the means for effecting the proposed changes. Concerning teacher professional development, Kealy (1995) expresses his hope that teacher educators consider pre and in-service development to be based on the ultimate goal - getting school children to learn what is important for them to learn. More critically, Papadopoulos (1995) views that educational systems should be equipped with greater flexibility to respond to new needs. The greatest need, Papadopoulos believes, is for some fundamental rethinking of the traditional structures and educational organizations.

Along with the upsurge of interest in EfS, Hicks & Holden (1995) believe that EfS provides a clear focus for work in futures education. Several other future studies advocates (e.g.: Hicks,1994; Slaughter,1996) argue that futures study is a core dimension of all the key areas of educational practices including curriculum innovation, teacher preparation, and professional development and point out its significance for insuring a

sustainable future. They view that all educational processes require a forward-looking or prospective orientation. Beare and Slaughter (1993) argue that education for the whole person needs a futures dimension. Therefore, the educator's role is to attend to building perspectives about the future into their work. Page (1996) asserts that 'futures education' is characterized by a strong ethical and philosophical orientation, which seeks to instill in students a sense of a 'truly global web of social and ecological relationships'. One of the key strategies of futures education is the ability to 'probe beneath the surface' of accepted norms and conventions. This is mirrored by Hicks' (1996) assertion that future study clarifies alternatives, which give rise to choices, leading to the need for responsible action. More specifically, it is important to focus on people's images of preferred futures, so they can provide the basis for creating a more just and sustainable future.

This section has outlined arguments showing that threats to life on Earth can be resolved by creating a community aware of environmental issues, in possession of understanding of what is needed and citizens ready to make critical and informed judgement in regard to the environment. It also highlights the pressure, from many prominent educators to support a transformative paradigm for education relative to the changing nature of modern life. Education is seen to provide a balance between knowledge, skills and values. The stress is on the need for a global ecological dimension in the curriculum and an active approach to learning. Technicist approaches are seen to reduce the involvement of teachers and learners in the curriculum improvement process. The message to be gathered from their work is that the concern for a stable confident future and sustainable lifestyle should be given a central place in educational reforms, by reconstructing the school curriculum and professional development of teachers.

For education to play a role in helping manage change and enhancing future environmental security, it requires a forward-looking approach, which is socially critical and open to new and radical insights. Futures study is seen to help the learner to choose the way he wants the future to be so he can move in the 'right' direction. The Islamic environmental ethic, it is also argued, has the potential to contribute a spiritual and ethical dimension to education.

3.7   The development of Environmental Education (EE)

This section briefly charts the rise of EE, pointing out that the concept, goals and approaches of EE are in constant change. During the final quarter of the last century EE has been a recurring theme of conferences across the world, and its significance has been widely recognised. The first international conference was held in Tbilisi in 1977, and is now considered a landmark in EE (Palmer & Neal, 1994). Its initial focus was on environmental problems of industrialisation, and identified strategies for the development of the school curriculum and the training of teachers. It promoted the role of critical thinking and problem solving, in an interdisciplinary approach; emphasizing that:

"EE should take into account the various components of the educational process, the objectives, content and methods, teaching materials, training of personnel and research and evaluation activities".

(Robottom,1992:91)

The following are the guiding principles that came out of Tbilisi. EE should:

- consider the environment in its totality;
- be a continuous life-long process;
- be interdisciplinary in its approach;
- emphasise active participation in preventing and solving environmental problems;
- examine major issues from a world point of view, while paying due regard to regional differences;
- focus on future and current environmental situations;
- examine all development and growth from an environmental perspective;
- promote the value and necessity of local, national and international co-operation.

(Blackmore,1994)

The general goals and detailed objectives of EE would vary according to the underlying ideologies and local perceptions of environmental problems and possible solutions, which determine the state of the environment and the perceived solutions. Some educators (e.g.: Robottom & Hart,1993; Sterling,1993) have judged that these stated goals are quite dated, vague and in need of revision, according to the ever changing and accumulating environmental crisis. They argue that emphasis on a single set of goals of EE is acceptable only if we could be assured that they have been, and continue to be, subject to critical appraisal.

A second international conference followed ten years later, in 1987, organised by Unesco-UNEP and held in Moscow. The goals and objectives of EE originally adopted at the Tbilisi conference were re-affirmed, and indeed, Blackmore (1994) believes that the principles from the first conference have not changed. However, he expressed discontent

over the outcomes of the conference, stating that there are still major environmental problems in contemporary society and questions to be raised about the role of education.

The Rio Earth summit of 1992 raised the profile of EE in relation to sustainability, but as we noted in section 3.5, its proposals and agreements were far from accepted by all (e.g.: Sterling,1993; Pepper,1996). EE is seen (e.g.: Robottom, 1992; Elliot,1993; Posch,1996) to be more of an approach to the curriculum than additional content. Learning to act reflectively in relation to the environment is not so much a process of acquiring information, but rather a matter of learning to deliberate about the practical problems in relation to the environment.

3.7.1   EE as a catalyst for change?

Responding to the global upsurge in concern about the environment has led many educators and researchers to call for rethinking the initial assumptions about the goals of education. Many such individuals (Orr,1992; Stevenson, 1992; Fien,1993a; Sterling,1993; Elliott,1993; Khan,1994) believe that EE should be the goal of all education, and a way of ensuring that present human activities will safeguard the survival of future generation. Palmer (1998) suggests that EE must be placed at the heart of policy and curriculum development processes. Following this point, Fien (1993b) stressed that EE seeks to provide lifelong learning experiences through which people may take a place in society as informed, committed and active citizens by caring about the needs of all species, and by speaking out and acting against social and ecological injustice. Engel (1992) contents that the long-term task of EE is to foster or reinforce attitudes and behaviour compatible with the 'new ethic'.

Martine (1991) holds that:

"EE is not about the natural forces that hold the environment together but the unnatural forces that determine the way people relate to and use the environment, the forces that determine whether human environmental management is careful or careless. It enables people to find their own route to the careful and sustainable use of the environment and to demonstrate it effectively, in their lives as producers and consumers".   (ibid:41)

Efforts are still being made on an individual, national and international level to develop the concept and the aims of EE. It may take several forms reflecting various ideological

tensions, and depending on each particular context. A project sponsored by OECD (The Organization for Economic Co-operation and Development) and entitled 'Environmental School Initiative' (ENSI), was launched in 1985 in a number of European countries. Based on the practical outcomes established by action researches conducted within the project, Mayer (1994) identified a set of values as the general aims of EE programmes. These are summarized as follows:

- The awareness that Man is part of nature.
- The awareness that Man needs nature for his physical and spiritual survival.
- The awareness of our responsibility toward the whole human species for the present and for the future.   (ibid:93)

Moreover, Mayer postulates the more specific aims of EE to be:

- Broadening environment awareness, extending the scope of EE, integrating various disciplines in moving towards a culture of complexity and overcoming the obstacles of a reductionistic and mechanistic approach to reality.
- Influencing the learning-teaching process. The educational process fosters 'dynamic qualities' in students.
- Teaching children to recover their past and to be aware of and identify themselves with their future.
- Teaching children to 'predict the unpredictable'.   (ibid:94)

Palmer (1998) relates the achievement of EE goals to young people's ability to engage in informal debates about environmental issues.

It is thus possible to identify some kind of consensus between authors such as these as to the meaning of EE in very broad terms. This is despite the contested nature of environmental debates and disputes over methods and immediate goals. The disputes and difficulties can, however, be illustrated by the failure at the practical level to successfully introduce EE into the subject specific national curriculum of England and Wales. Thus, In 1990 the UK national curriculum has introduced EE as a cross-curriculum theme. In practice, attempts by schools to enact such a theme in their classrooms are not widespread. It was thought of as three linked components: education about the environment (knowledge), education in or through the environment (a resource), education for the environment (values, attitudes, positive actions). But placing such overtly cross-curricular matter in a subject specific curriculum context has proved very difficult.

In Scotland too, where EE is usefully distinguished from its predecessor 'environmental studies', the agreed goals are also very much in advance of widely adapted and successful classroom practice (SOED,1993). The Scottish National Guidelines for EE states that:

"the aim of EE is to provide the basis for pupils to make informed decisions about their own behaviour".

(ibid:6)

It defines EE stating that:

"EE should go further than environmental studies, by encouraging and providing opportunities for the development of informed attitudes towards the environment".

(ibid:2)

But evidence to show convincingly that such goals are being addressed is very hard to locate. This section has sought to remind us that many thinkers and organizations in the West have undertaken pioneering work in the development of EE. It is their consensus that EE seeks to educate for a critical perspective on political, social and economic aspects relative to the environment. It focuses on improving the quality of life of all humankind; in other words, it is seen as a catalyst for fundamental change. In order to address EfS in the long term, EE attempts, following the Earth Summit, to enlighten learners that they have significant 'power' to effect change in their environment and to exercise some control over their destinies. This usually plays out for children to become workers for ecological stability rather than agents of economic growth. The ultimate aim of EE is preparing students for life conducted in harmony with their environment, and to foster or reinforce attitudes compatible with the 'new-world ethic'.

3.7.2 Deficiencies of the provision of EE

A stream of educationalists have examined the limitations of traditional EE practices. Dorion (1993) determined that EE often seems to be associated with the search for solutions to problems; this, in her view, may provoke in young people a response of alarm and disillusionment rather than encourage them to take action for the environment. She suggests that pupils should have the opportunity to enjoy and appreciate the environment. Naybour (1992) voices a similar concern and believes that telling people about the threat to the environment can provoke a response of alarm and rejection rather than encouraging them to find out more and to take action.

On the other hand, Blackmore (1994) believes that appreciation goes beyond aesthetics and that, although experiential learning relating to the environment encourages environmental appreciation, in his opinion this is often thought of in terms of the beauty of the environment. He believes that it is often only when something is lost that its value is appreciated. As such, he adds that environmental appreciation may come from viewing both beautiful and degraded environments. For instance, fieldwork can develop an appreciation of environmental utility or loss of utility, biological diversity or loss of diversity, and can encourage students to value the environment.

In reality, the power to initiate effective environmental action is mainly a political matter. An individual who might hold ethical beliefs and moral responsibilities towards the environment would be prevented from exhibiting his convictions by the economic and political structure of the society, if they ran against the interest of the system. From a personal level, social and cultural norms can also inhibit individual's actions. In Orr's (1992;1994) belief, it is the influence of such factors that causes the failure of the existing practices of environmental programmes in changing the way people live. He expresses his dissatisfaction with the student's failure not to be able to make the leap from 'I know' to 'I care' to 'I'll do something'. Sterling (1993) echoes the same view concluding that EE is not achieving the ambitious goals set down in the Unesco conferences. He relates this failure to the in-built contradictions of a social order, which constrains the critical aspects of EE and the overall educational context. Personal and social change will be limited where the nature of the EE practised is heavily influenced by the educational and cultural paradigm in which it operates. Fien (1993b, 1994) argues that those involved in EE, at whatever level, need to activate the socially critical or reconstructionist tradition in education and promote approaches to curriculum planning and pedagogy that can help integrate ecological sustainability into a vision and a mission of personal and social change. Approaches to EE, which ignore the issues of justice and ecological sustainability are guided by technocratic rationality and behaviouristic goals of reductionist, Western approaches to development. Huckle (1990) and Robottom (1992) attribute such failure to the adoption of a technocratic perspective, grounded in a scientific domain, and which often excludes social, economic, political and cultural concerns.

Ebbutt (1992) criticizes the approach of teaching about, through and for the environment. 'About the environment' does not seem to indicate the need for an in-depth understanding of the forces that determine the way people relate to and utilize the environment in their day-to-day lives as producers and consumers. 'Through the environment' implies that it is necessary for EE to take place out of classroom. Ebbutt argues that the issue is not where you teach or what you teach but how you teach. The outdoor lesson can be didactic and boring and the indoor lesson open-ended and stimulating. It could also be argued that sitting reading a poem in a darkened room is as potentially effective in helping people to explore feelings about the environment as it is to take them for a walk in the woods. 'For the environment', Ebbutt maintains, seems to be highly prescriptive. It implies that EE ought to lead to one specified view of the environment and that there is only one route to environmental concern. Prescription of values, he argues, is limiting because it fails to address differing or alternative value systems as they contribute to the current perceptions and utilization of the environment. It also completely avoids the notion of dissent, a notion which, must be addressed if EE is not to be 'green brainwashing' (see Aldrich-Moodie and Kwong, 1997).

Ebbutt concludes that the problems and issues thrown up by concern for the environment itself can be controversial, complex and potentially difficult to handle in the classroom. However values come into especially sharp focus when EE is considered. Viewed positively, the potential is there for innovative forms of teaching and curriculum organization. Viewed otherwise, cross-curriculum themes will be seen as vulnerable when faced with time tabling imperatives for core and foundation subjects.

In Sterling's (1993) view:

"the in, about and for model of EE and its lists of separate skills, knowledge and values is no longer sufficient. To be an effective agent of change, educational practice needs to be informed by a holistic philosophy".   (ibid:91)

Orr (1992:94) emphasises that:

"the study of environmental problems is an exercise in despair unless it is regarded as only a preface to the study, design and implementation of solutions".

An empirical study, conducted by Szagun & Mensenholl (1993) on German adolescents assessing their ethical and emotional concern about nature, recommended that for

affecting a long-term change in people's awareness of nature and the way they treat nature, it is not sufficient to impart knowledge or carry out practical projects. It is necessary to reach people's deep convictions and their emotions, which inform ethical values. In the English education context, Hart (1998) seems to agree concluding that EE is justified in terms of basic values, which don't demand subject area knowledge as much as a commitment to instil in children what is right and good and of proper value.

The result of a great deal of debate within the writings of ecocentric educationalists seems to confirm that the critical aspiration of EE is being undermined and practice does not meet the expectations nor the priorities of EE. The prevailing practice of EE is seen to support rather than challenge the dominant technocratic approaches to sustainability; if not, it instils guilt into pupils. Education, they recommend, should enable the learner to view environmental issues in their complexity. They call for a stronger form of EE practice, and suggest that the organizing concept at the heart of EE needs to be sustainability.

3.7.3   Education for Sustainability (EfS)

Over the past three decades, since the Tbilisi conference, fundamental changes in the approach and content of EE have occurred. Significant work has taken place in redefining EE to incorporate concepts of sustainable development. Education for sustainability (EfS) is still a developing field, influenced by different streams of thought, traditions and ideas. Yet, schools are assumed to take responsibility for the safeguard of the environment. For example, schools in England and Wales have a statutory responsibility to ensure that sustainability is taught, mainly through the geography curriculum.

Fien (1993b) concedes that many aspects of traditional approaches to EE contribute to education for sustainable living. It requires a re-conceptualization of some aspects of EE and some of the assumptions upon which it has been based. He points out that the World Conservation Strategy (WCS) considers education for sustainable living as a new direction for EE. It argues that education has a vital role to play in ensuring that people accept living in harmony with other people and with nature. Furthermore, to educate for sustainability (WWF,1995) is not just about EE, although it is an ideal context in which

to teach it. It is to teach a philosophy and a way of thinking. Sterling (1996) has argued that EfS may be part of a move away from the values and norms associated with modernity towards the alternatives associated with constructive post-modernity. It requires fundamental 're-orientating' of much present thinking. He writes:

"education for sustainability is not an agreed set of ideas education can tack onto existing thinking and practice to allow them to say 'we are doing sustainability". (Sterling,1996:19)

He considers the characteristics of education for sustainability as: contextual, innovative, focused and infusive, holistic and human in scale, integrative, process oriented, critical, balancing, systemic and connective, ethical, purposive, inclusive and lifelong. WWF (1994), more plainly, states that EfS is a collection of tools set within an assumption that we should leave a living, healthy planet to our children and enable people to meet their needs within that sustainable system. The problem, in Mayer's (1993) view, is not teaching sustainable development nor respect for the environment, but of understanding what this means in the concrete situation the pupils' are living. This point puts an interesting and challenging spin on the IUCN position, when EfS is described as:

"a process, which develops human capacity and creativity to participate in determining the future, encourage technical progress, as well as fostering the cultural conditions favouring social and economic change to improve the quality of life and more equitable economic growth while living within the carrying capacity of supporting ecosystems to maintain life indefinitely". (Cited in Khan,1995:6)

Khan considers that this definition does not easily accommodate the notion of "sustainable development". The framework Khan describes includes both transferable knowledge and transferable skills in terms of learning outcomes. She illustrates that every student should be able to:

- understand the principles of sustainability,
- appreciate the relationships between local, national and global actions which shape environmental change,
- recognise the environmental impact of his/her choices and decisions. (ibid:6)

Slocombe and Bers (1991) believe that (EfS) can encourage the generation of creative solutions and can help identify possibilities for sustainable development.

Education for sustainability is challenging for educators because it calls for radical transformation in our ways of thinking about nature and our relationship with it. It

empowers the learner to effect changes consistent with the 'new-world ethic for a sustainable society'. Through EfS students should gain the conviction that they have significant power in shaping the community's future, so they would be willing to make sacrifices for the sake of the environment.

The moral contribution of Islamic tradition consists of the belief in the sacredness of all God's creation. Enhancement of natural beauty in Islam is seen as the completion of His creation. The principle of 'treading lightly' on the environment is also a fundamental principle in Islamic tradition. Its stewardship tradition enjoins Muslims to care and improve their surrounding. Islam accepts justice as an integral part of moral behaviour. Such values, it is argued, share the same fundamental ethic needed for achieving a sustainable society.

3.8   What sort of curriculum intervention?

Many teachers might not be comfortable with the way things are, but are not motivated to act on their beliefs. It is argued, on the other hand, that Muslims would react willingly to messages that come from their faith. The nature of the Kuwaiti context is that its school curriculum is taken as given. It is essentially not possible for it to be changed in structure. Moreover, the Kuwaiti educational system works under an Islamic ethos.

Yet, in relation to the radical educational ideas presented in this chapter regarding EE, there are curriculum choices to be made. For those ideas to be realized in the Kuwaiti educational system in particular, they have to be infused through existing, given subject disciplines. Interestingly, because of the distinctive over-arching organizing principle of Islam it is not necessary to organize the Kuwaiti educational curriculum in themes. In connection to Chapter 2, section 2.4 on the ethics of Islam, Islam, it is argued, bears a host of ethical principles and moral values needed to address the spiritual problems that underlie environmental crisis. Therefore, it has the potential to take a prominent role in formulating a global environmental ethic for sustainable living.

Muslims do not believe that there can be a situation in which Islam has no role; they give religious connotations to all their actions, including their professional career. In early Islam, teaching was regarded as a religious duty; therefore, it is unlikely for Kuwaiti

teachers to hesitate in contributing to the creation of ethical consciousness in their students. Such a particular characteristic makes it possible to effect changes which integrate EE into every existing subject area. For the purposes of this research, radical possibilities exist in the Kuwaiti curriculum for teachers to understand that propagating the ethics of EE is part of their obligation towards their faith. Therefore, it deals with the presumption that teachers may have the potential to develop some environmental ethics in their teaching. They would mainly need to realize the connection between their subjects and the traditional environmental Islamic wisdom, which is in close harmony with the 'new global ethics' developed in the West. Henceforth, could Kuwaiti teachers steer their curriculum and teaching methodologies into enhancing the spirit of Islamic environmental ideologies for answering the needs of modern life?

3.9   Concluding remarks

Deep ecologists consider that environmental threats stem from the assumption that humans regard nature as a resource. They believe that a characteristic of the prevailing Western worldview is the loss of the sense of sacredness of nature and so it is deficient in providing for the welfare of future generation. Their argument goes that the ecological crisis is too serious to be resolved by customary modes of thought; it is fundamentally a moral and religious problem. They see the ecological problematic a question of our way of life, attitude, aspiration and outlook. So humanity can no longer afford to do without utopian thinking.

In relation to the Western educational context, there are calls for the need to change the approaches to EE. There is a need to shift the emphasis to focus on the human dimension of environmental change. Education for sustainability EfS is seen to have the revolutionary purpose of developing ethics which support a sustainable living. These themes are seen as necessary to underlie all professional and school programs, and inform the basic assumptions on which Western educational curricula are built. This chapter argues that it is time to re-visit the ethical issues raised by radical educationalists. At the level of practice, a question remains as to how would the ideological aspects of EfS actually lead to consciousness-raising and effective attitudinal changes towards the natural world if it does not address the individual's deeply held convictions concerning the human/Earth relationship.

This thesis argues that Islam sanctifies the world and understands the connectedness of God's creation. It also holds that Islamic education is not only concerned with transmitting knowledge but also training of the whole being of a person. This chapter argues that the fundamental principles of Islam are in close harmony with the ecocentric perspective, and that there are some environmental ethical criteria which Islamic tradition holds in common with those of secular origin - the new world ethic; the two can be merged into the key concept of EfS. In consequence, it is possible to learn and select concepts and teaching techniques from the West that could help put in shape an Islamic environmental ethic to be set up in an Islamic context. This chapter has served its purpose if it leads to recognition of the crucial part that EfS, which is argued to be embedded in the Islamic tradition, could play in every field of education.

In response to the present environmental crisis in Kuwait, the chapter closes by suggesting that by introducing a spiritual dimension to the educational experience of the learner, an educational curriculum under the framework of Islamic wisdom can make a long-lasting contribution of values and lifestyle changes in learners holding Islamic faith. Kuwaiti teachers could explore the significance of reconstructing their own Islamic traditions and therefore carry out EfS within the modern course of life and the framework of undisputed Islamic values. Through such teaching, students can develop a sense of concern for what is happening and be encouraged to take 'appropriate' action in protecting their environment as part of their Islamic teachings. What is required is building up a positive attitude towards the environment, and a sense of social and ecological responsibility.

Chapter Four

Research Methodology and Methods

4.1   Introduction

The purpose of this chapter is to introduce the methodological principles, which have guided the selection of data gathering methods and analytical procedures in this thesis. The research methodology responds to the research questions (presented earlier in Chapter 1, section 1.9.2):

1.   What is the status of the provision of EE in Kuwaiti middle schools?

2.   What are the principles of the Islamic doctrine that bear on environmental ethics?

3.   What key concepts (e.g. Sustainability) of Western EE relate to Islamic schools?

4.   How can teaching be supported (e.g. by INSET) in order to develop EE in Kuwaiti middle schools?

This chapter first provides justification and description of the methods for the acquisition of the data and the phases of data collection. It considers the advantages and limitations of the adopted methodologies. Following this, the chapter considers some issues and problems encountered and constraints, which forced the research to evolve to its final form. It concludes with a discussion of the changes that emerged.

The main reasons for focusing the research on a survey questionnaire on middle school teachers, analysing middle school text-books, and therefore confining the in-service training programme exclusively to middle school teachers were attributed to the fact that the middle school time-table allows the school administration board to make use of the one session per week intended for implementing educational activities of the school's choice, without being strictly imposed by the ministry (see Chapter 1, section 1.4.2). This would certainly demand little in the way of searching for a space in the school timetable for interdisciplinary activities needed for EE, in contrast to the absolutely rigid agenda of the primary and secondary schools. In addition to this the researcher, being previously a middle school teacher, was relatively familiar with the middle school curriculum, a circumstance that was perceived to facilitate the process of textbook analysis. Moreover, the researcher

had the opportunity of obtaining a permit to visit middle schools to conduct a teamwork study assessing the impact of computer in middle school classrooms. The study was part of the researcher's professional task, and was sponsored by the ME. Coincidentally, they were those same sample schools the researcher chose for her thesis questionnaire survey. In other words access to the schools has been successfully negotiated in advance. Besides, this proved to be an efficient use of very scarce time available to the researcher.

Certain limitations arise from concentrating solely on middle schools, mainly to do with the generalizibility of the findings. The findings of this research might only be applicable to Kuwaiti middle schools. It may have been desirable to research teachers of all school stages, examine text-books of the primary and the secondary schools and most intensively to include a sample of teachers from all the three stages in the in-service training programme in EE. Such work however would have demanded a large-scale effort to conduct; individually, with limited resources and in a short period of time this would definitely have been impossible. The interest in carrying on this research was derived from the researcher's background and experiences of the educational and environmental practices in Kuwait.

It should be noted from the start that although the questionnaire survey was conducted with a large sample of schools, with 45% of respondents being male, the workshop, which proved to be a critical period in this research, was conducted with female teachers. This was justified (see section 4.5.2) although it is acknowledged that in some ways this sample of teachers may not be fully representative. Though this may weaken some of the research conclusions, it should be remarked that the majority of middle school teachers are female.

4.2   The nature of the knowledge explored in this thesis

As seen in Chapter 1, section 1.8, EE research in Kuwait has essentially focused on identifying environmental concepts presented in school textbooks. Research designed to identify teacher perception, assessing their skills in practising educational strategies to achieve the goals of EE, or attempts to identify school policies and management for the provision of EE, are absent in the EE research literature. More specifically, attempts to develop present practice do not seem to feature in the Ministry of Education's agenda. The current status of EE in in-service teacher training in Kuwait seems not to prepare teachers

adequately to achieve the goals of EE presented in Chapter 3, section 3.7.1. The emphasis of environmental educators such as Fien (1998) and Posch (1994) world-wide is to engage teachers in participatory action research. Indeed as Robottom and Hart (1993:vi) argue:

"if EE is one of the social agencies through which the transformation to an ecologically sustainable society is to be achieved, then the role of teachers as change agents is vital".

This thesis examines the proposition that the underlying paradigm of education in Kuwait is influenced by an anthropocentric, technocratic worldview, providing evidence that it is not strongly compliant to Islamic ethics.

Robottom (1992:83) argues that:

"EE should not restrict itself to technocratic solutions but should adopt an approach that is critical and participatory".

More precisely, Robottom and Hart (1993:44) state that:

"research within EE should be compatible with the ecophilosophical and educational world views which it seeks to promote and support".

Hart (1998) explains that EE research is concerned with the reuniting of knowledge and values that permit teachers to reflect critically. In his view what drives teachers in schools is a deep sense of fundamental values about what is right to teach children.

It is this background that was reflected in the researcher's personal desire to pursue this research as a means of improving theory and practice of EE in Kuwait. The choice of an in-depth study, using quantitative and qualitative techniques of data collection, was not made for the purpose of making general claims. The concern was to establish a basis for the need and the means for developing educational settings in EE that could best be applied in the Kuwaiti context. This thesis is more interested in producing a credible argument about the impact of a particular setting, examining its strengths and weaknesses and verifying the means for future development of EE. Generally, its concern is to get a

deeper understanding of particular questions concerning the introduction of innovative teaching strategies and some Western environmental concepts which relate to Islamic ethics into the context of the educational setting of a Muslim state. A detailed argument of the environmental Islamic teachings is seen in Chapter 2.

4.3   General methodology

Current educational research supports different methods of inquiry methods that have been organized within different research traditions. Researchers ought to be flexible and select a range of methods that are appropriate to the research problem under investigation (Brannen,1992; Cohen and Manion, 1994). Any method can be efficient, less efficient, or in-efficient depending on the kind of information that needs to be gathered, and for what purpose. According to the quantitative paradigm, the logic of inquiry (Brannen,1992; Bryman,1992) is to do with causality, measurement and generalizability; its goal is often descriptive. In relation to qualitative work, it is the testing of theory that is important rather than the issue of inference or generalization. Bryman & Burgess (1994) indicate that quantitative data deriving from large-scale surveys could be described as voluminous and unwieldy, but the availability of standard statistical procedures and computer programmes for handling them is generally perceived as rendering such data non-problematic. However, a number of theoretical schools that have influenced fieldwork methods have suggested that qualitative data are better able to capture the nature of meaning in fieldwork investigation (Layder,1993).

Nevertheless, the issue is not that one or other of these approaches is superior to the other. Much of the literature takes the views that analytical approaches vary according to the nature of the data gathered and the purpose to which it is put. The quantitative versus qualitative argument, therefore, is ill conceived and carries some danger (Hammersly,1992; Thomas,1998). Choices ought to depend on the purposes and circumstances of the research, rather than being derived from prior methodological or philosophical commitments. Each paradigm has distinctive characteristics, its contrasting strengths and weaknesses and preoccupations that would make the possibility of combining them especially attractive. Therefore, there may be some dispute about whether they can genuinely be compared (Bryman, 1992).

The characteristics of mixing quantitative and qualitative paradigms are widely discussed in the literature, for example Miles and Huberman (1994) and Cohen and Manion (1994). There is recognition among many writers that much research combines elements of different approaches. These ensure that it is helpful and important for the researcher to have different views of research and to choose appropriately from among them.

There may be a good theoretical case (Brannen,1992) for combining methods in order to study different levels of inquiry and in order to explore different aspects of the same problem. Through the careful and purposeful combination of different methods, breadth and depth are added to the analysis. Qualitative and quantitative research (Bryman, 1992) may be appropriate to different stages of a longitudinal study, each representing a separate block of data collection. Qualitative research aims to illuminate the area being studied by preserving context and complexity and assembling data through close contact with the people involved in their setting, classroom or otherwise (Slater,1996). In such an approach quantitative forms of measurement should be drawn upon as a resource to complement findings from qualitative research (Layder,1993). It is these characteristics that lie behind the rationale for integrating them. The researcher has to judge whether any important aspects of the research problem would be ignored if there was an exclusive reliance on one research approach. When properly combined, one approach enhances the other. According to Bryman (1992), as the data are being collected or at the stage of analyzing the data, the researcher may find that mixing methods may serve different purposes; this may constitute an advantage.

Combining diverse methods in tackling a research problem is described by the term 'multiple research strategies'; others describe it by 'integrated research', or 'the multi-method approach'. The decision to combine quantitative and qualitative methods for this thesis was subject to the need for both in-depth inquiry and an integrated vision of the issue in question. It was felt to be appropriate to use mixed methods in order to explore the research questions 1- 4 (see Section 4.1).

4.3.1 The general framework of the research

The basic framework (see research design Figure 4.1) for the research is organized in the following over-lapping phases:

Phase 1

Literature review.

- Identifying Western environmental concepts and teaching methods.
- Identifying Islamic environmental ethics.

Phase 2

The empirical study. The aim is to provide a broad picture of the existing situation:

- A questionnaire survey. Assessment of the status of the provision of EE. It was conducted between April-May 1997.
- Examination of Kuwaiti school textbooks. This takes a critical stance and seeks to validate some of the data obtained by the other method used (the survey).

This was a diagnostic stage in the research during which the parameters of the research problem were analyzed. Data from this stage were described in order to establish 'the hypothesis', (see section 4.2).

Phase 3

In the light of the findings of the previous phases, this phase follows the following steps:

- Developing a teacher-training approach appropriate to the Kuwaiti context. The design of the workshop, collection of the material, preparations required to get the ME's approval of the workshop and the approval of the workshop participants started from December 1996 until November 1997.
- Implementing the teacher-training workshop. This stage could be compared to 'testing the hypothesis'. It was conducted between 21st– 23rd December 1997.
- Evaluating the short-term effect of the workshop from the point of view of the participants and an external observer. Administration of the evaluation sheet and collection of the data was conducted during December 24th 1997 – January 1998.
- To provide support and guidance, the researcher established a link with participants of one of the five schools. The link lasted from January-April 1998.
- Follow up interviews in order to examine the longer-term impact of the workshop.

Figure 4.1

The Research Design
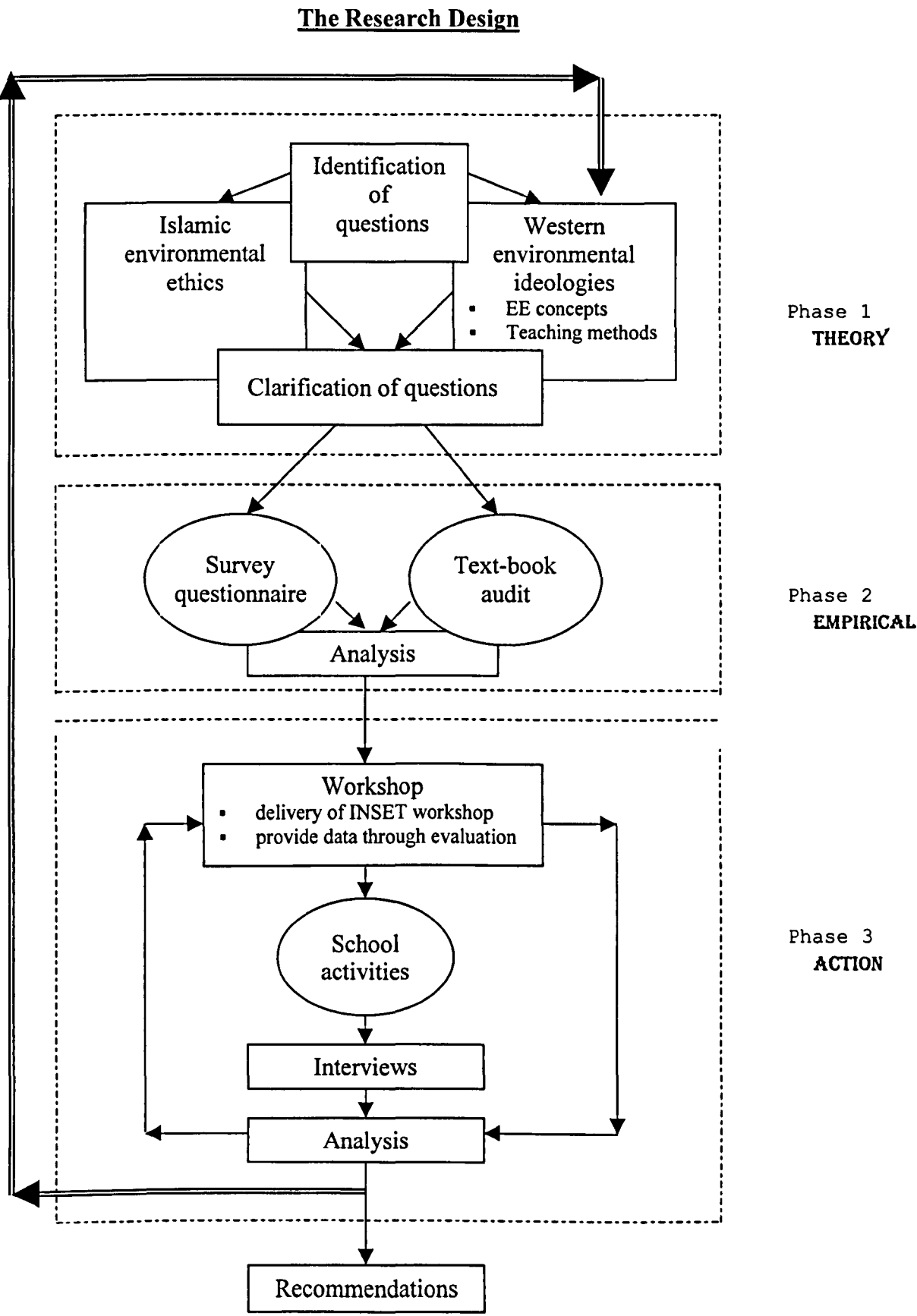
Note that the diagram in Figure 4.1 shows the design of the research. It does not show the structure of the thesis. For example, owing to the evolving nature of the research much of the data from the survey questionnaire (phase 2) became less central: findings are summarized in Chapter 6.

4.3.2   Action Research

Each phase of the research (1-3) produced one component of the overall inquiry. The research builds through the 'theoretical' and 'empirical' phases towards what has been identified as an 'action' component (Figure 4.1). During the final phase 3 of the research the researcher was involved with one school in order to facilitate and effect change. In methodological terms, this component may be thought of as 'action research'. Action research is often represented as a four-phase process where a plan is formulated, that plan is acted upon and the outcomes observed, and reflection is undertaken to understand the processes, strengths and weaknesses of the plan. A revised plan can be formulated, and the cycle can begin again. Naish (1996) defines education action research being a research undertaken by the practising teacher as a response to an issue or problem that is a matter of concern to that teacher.

The purpose of undertaking action research method is to try to get at the nature of an issue or a problem, to explore its roots and causes and to plan and implement possible ways and means responding to it. The effects of implementing these ways and means are then evaluated and this may lead on to further attempts to refine the action, and further reflection on the issue. The basic characteristic is that the practitioner is mainly concerned to produce an effective action plan to deal with a situation or condition. According to Cohen and Manion (1994) the focus of action research is a specific problem in a specific setting. One of the situations they identified to be appropriate for action research in an educational setting is whenever a new approach is to be grafted onto an existing system, precisely the focus of the workshop in phase 3 of this research.

The critics of action research object to the situational and specific nature of such work, which severely restricts its generalizability. The sample used is usually restricted and unrepresentative, and the researcher has little or no control over independent variables. Slater (1996) confirmed that in action research it is not generalization, which is sought,

but description of the singular, the particular, the unique. This statement captures exactly the nature of the research in this thesis.

There is growing recognition (Elliot,1993; Mayer,1994; Posh,1994) of the need for engaging teachers in participatory action research, particularly in EE. In the view of Robottom and Hart (1993), education research should be grounded in the participatory inquiry and not in the positivist 'applied science' paradigm which in their view is antagonistic to the very nature of EE. It is this, they believe, which fosters the development of independent critical and creative thinking in relation to EE.

This research is interested in seeking and observing changes in the learner's perception of the world, and how they articulate their responsibility towards others. The overriding goals of this thesis could be described as a serious attempt to analyze EE and find ways to relate this to the educational organization of a Muslim community, in this case Kuwaiti educational system. The 'active' element of the research is based upon the explicit realization that ideas developed during the research will be modified, challenged or changed (see research design in section 4.3.1).

4.4   Data gathering

The choice of instruments for data gathering was guided by the research questions and the theoretical principles outlined in the previous section. The methods were identified as follows:

- Documentary audit of textbooks.
- Questionnaire survey to in-service teachers.
- Evaluation sheet for the workshop participants.
- Report of an external observer on the workshop.
- Informal meetings with teachers through a sequence of visits to the targeted school.
- Semi-structured interviews with teachers of the targeted school.

These were supplemented by the use of other sources such as photographs, tape recording of pupils' activity as well as teachers' scheme of EE activities (see Vol. 2, Appendix 4.1). All these sources supplemented the main data sources and thus contributed to the research

findings. Detailed description of each of the methods is presented in the following sub-sections.

4.4.1 Textbook audit

As a form of qualitative content analysis, the textbook audit (Chapter 5) was chosen to identify:

- Concepts, skills and values relative to EE within the content.
- Underlying environmental ideology propagated in the texts.
- Islamic environmental values within the texts.

4.4.2 Teachers' survey questionnaire

Initially, in order to establish a 'base line' for this study, it was felt to be important to investigate the existing nature and conditions of the provision of EE in Kuwaiti middle schools. Through the use of questionnaires (Stimpson,1996) answers to questions about the status of a particular situation can be sought by providing verifiable data. The information gathered gives snapshots at particular points in time of an existing condition. Their use of collecting and organizing evidence raises many methodological issues and problems. Intelligent data gathering requires a conscious effort. The main advantage claimed for questionnaire surveys is that they are cheap and quick to administer where information from a large sample or a large population is needed. Further, they avoid the negative effects of face-face interviewing and provide a standardized evaluation method. On the other hand, a major problem is the absence of any check on the effectiveness of the communication, even if pre-testing has taken place. Clarity of wording and simplicity of design are essential. Moreover, it is not always easy to check for honesty without recourse to the follow-up interviews that many researchers find necessary (Stimpson,1996). On balance, however, an initial survey of this kind was felt to be essential.

The questionnaire was structured on the basis of the research agenda. It was designed to examine the views of a range of middle school teachers with varying backgrounds and experiences and to probe their beliefs in tackling the issue of EE in their teaching. The questionnaire was approached in two stages, a pilot test and the main survey study.

The pilot survey (see Vol. 2, Appendix 4.2) was administered to test the feasibility of the study tool; it would necessarily involve a much smaller sample than the full survey. Thirty questionnaires were administered to middle school teachers either through direct acquaintance to the researcher or indirectly through friends and colleagues. Eighteen pilot questionnaires (60% return) were collected. Apart from one, which was responded to by an Islamic education teacher, all were completed by either science or social sciences' teachers. The administration of the pilot test took place during February -March 1997. At this point, on the basis of the strong resistance of several subject area teachers to co-operate, it was acknowledged that the thesis would not be expected to cover the entire school curriculum. Faced also by an unwillingness of Arabic language teachers to participate in the pilot test, the researcher decided to substitute Arabic language teachers with those of English teachers for the full survey. IT teachers were added to the sample in order to probe the teachers of different disciplines to the use of IT facilities provided at many Kuwaiti middle schools for the provision of some aspects of EE. Therefore, the survey included the following subject discipline teachers: Science - Social sciences - Arabic language - Islamic studies (RE) and IT.

The pilot study identified some ideological basis and aspects of how EE is understood. For example, although the teachers' concern was 'to preserve resources', this concept was presented on the account of the need of people; the prevailing view was clearly anthropocentric. The findings also showed that teachers hold relatively a narrow perception of the goals of EE. For example, some perceived the goals as to 'inform pupils about the concept of the environment, its different forms, and the various types of pollutants'. Thus their perception was mostly confined to the cognitive aspect of EE. Whenever they expressed their concern for preserving the resources and caring for the environment there was no concern for the environment for its own right, such as the following statement: 'encourage students to collaborate in keeping the school and the community tidy'. Moreover, statements of teachers' practice and their school's preparations and policies for fulfilling the goals of EE indicated that EE was not well developed through the teaching strategies and classroom practice, neither through the whole schools' policies. The major concern often appeared to be relatively superficial to 'distribute litter-bins around the school and care about personal hygiene'.

The pilot results also showed that answers to some of the objective questions needed elaboration, for example where the responses were mainly on the definitive side, claiming

to be dealing with the listed concepts, with their pupils. It would be of interest to know some examples and elaboration of such practices. Partly as a result, the questionnaire was amended so that most of the 'closed' objective questions were now followed by opportunities for respondents to express themselves more freely. Thus the analysis of the pilot study provided useful results, which fully justified the need for carrying out the survey study with a larger sample.

Aims and objectives of the main survey questionnaire

The survey questionnaire (see, Vol. 2, Appendix 4.3, English version) attempts to identify environmental dimensions in the teachings of a selection of subject disciplines as a means to provide a comprehensive picture of existing practice. One goal of the thesis is to conceptualize the development of the school curriculum and ethos in line with the development of EE concepts and teaching methodologies in the West. The broad aim of the survey was therefore to establish the need for and the contents of in-service training workshop in EE. In order to address the research question 1 (see Section 4.1), it sought answers to the following questions:

- What is the level of understanding of in-service teachers concerning the concept of EE and its goals? This is addressed by q1-q3 .
- What is the teaching content, teaching strategies and resources for the implementation of EE? This is addressed by q4-q25.
- What are the teachers' views of their role, their needs and those of the pupils for the implementation of EE? This is addressed by q26-q37.

The survey attempted to provide information on the prevailing level of Kuwaiti teachers' commitment to environmental issues and to establish the need for development. It tried to explore deeply into teachers' understanding, views and practices in order to meet the following more precise objectives to:

- provide a description of concepts and views that teachers hold concerning EE and its goals,
- identify concrete contextual teaching strategies used by teachers,
- elicit their suggestions for the development of EE at the middle schools in Kuwait,
- identify the EE content of (global or local issues) several subject disciplines.

<u>Description of teachers' survey questionnaire</u>

The survey questions focus on teachers' conceptions and accounts of existing practice. The selection of questions was meant to serve as a diagnostic assessment of the status of EE practice in Kuwaiti middle schools. The questionnaire was designed in the Arabic language (see Vol. 2, Appendix 4.4). A Kuwait University teacher, Dr. Abdullah Chraq, checked the technical aspects of the questionnaire items (such as clarity of the wordings and the ordering of the questions). Most items are 'objective' or begin with an objective question followed by open-ended question(s). This allows respondents to give examples or explain their rationale for their choice, in the multiple parts of each item, in order for the researcher to determine the nature of the response. Thirty objective items were included; respondents were asked to choose the category he/she thought best fitted, using 3 or 5 point Likert scales. Respondents were also asked to respond to 7 major open-ended items.

The questionnaire consists of the following components (please refer to the English version, Vol. 2, Appendix 4.3 throughout):

- Life-condition information

The first page constituted identification information that allowed respondent answers to be placed in categories, which were thought to be useful in the subsequent analysis. Respondents were required to tick the relevant information applicable to their circumstances from a number of given options.

- Glossary

This section provided definitions of some of the new, unclear or unfamiliar terms. This was felt necessary to orientate respondents.

- Covering letter

A covering letter was provided with the questionnaire stressing the importance of the survey for the national interest as well as explaining its objectives.

- The questionnaire structure

The questionnaire comprised eight sections. Each section represents an aspect of EE and constitutes several items.

The survey questions were grouped into eight aspects:

1. Teachers' perception of EE goals. This part brings out the teachers' perception of the goals of EE and the schools preparations for fulfilling such goals.

2. Teaching content. This section draws on teachers' perception and practice to specify curriculum content related to local and global environmental issues, and to the concept of 'sustainable development'. It also tries to identify the difficulties faced by teachers in tackling environmental issues.

3. Teaching strategies. This section identifies educational strategies used by the teachers in relation to EE. It also identifies local and global environmental issues that are debated, field studies conducted, examples of pupils' participation in solving local environmental problems and external visitors called to schools as to contribute to pupils' EE.

4. Teaching aids. This section identifies the educational aids provided in schools, and those that teachers wish to be provided, for the provision of EE. Teachers are also asked to specify their opinion on the use of IT at schools to support EE.

5. Teacher's role. This section elicits teachers' opinions on their educational role and seeks to identify situations in which interdisciplinary collaboration between teachers is carried for the provision of EE, if any.

6. Teacher training. This section investigates whether teachers are acquainted with major environmental issues, and the adequacy of the present INSET programmes for training in EE.

7. Pupils' role. This section deals with teachers' opinions on the pupils' needs in relation to conducting debates and practical work.

8. Teachers' suggestions. This section extracts teachers' suggestions for the development of teaching EE and views on any constraints on such improvements.

The sample identified in the survey

Out of the total of 158 intermediate schools operating in 1997 in Kuwait (constituting 77 boys' schools and 81 girls' schools) the 47 public intermediate schools, providing 'computer literacy' as a curriculum subject, were selected. This was thought to be a fair way to select a representative sample of Kuwaiti Middle Schools. The sample was believed to be representative of a heterogeneous population distributed over the five districts representing a range of socio-economic levels and that the sampling would mirror

the larger population. The nominated schools were informed officially by the ME to take part in the study. The questionnaires were delivered personally by the researcher. Often principals offered to choose the prominent teachers from each department, but mainly the choice of the respondents was based on their availability at the time of the visit, their willingness to participate in the study and the school principals' personal choice. This may have the potential of introducing sampling biases, but it is believed that the heterogeneous nature of the entire sample of schools kept sampling biases to a minimum. Each school was submitted five questionnaires, one for each of the specified subject teachers. As questionnaires were distributed personally by the researcher to the representative sample of teachers, the returned rate of questionnaires was high, totalling 209, (89%) of the original number. This consisted of 116 female teachers (55.5%) and 93 male teachers (44.5%).

Tables 4.1a, 4.1b and 4.1c, show the structure of the sample population according to the main categories of school district, subject discipline and gender.

Table 4.1a- Number and frequency of teacher respondents in each district area.

District Area	Frequency	Percentage
Capital	44	21.1
Hawalli	45	21.5
Farwania	30	14.4
Ahmadi	52	24.9
Jahra	38	18.2
Total	209	100

Table 4.1b- Number and frequency of teacher respondents of each discipline.

Subject Discipline	Frequency	Percentage
Science	49	23.4
Social Studies	46	22
English	42	20.1
Islamic Ed.	38	18.2
IT	34	16.3
Total	209	100

Table 4.3a- Number and frequency of teacher respondents
corresponding to their gender

Gender	Frequency	Percentage
Male	93	44.5
Female	116	55.5
Total	209	100

Administration of the questionnaire and discussion

Written permissions, for visiting each of the nominated schools, were granted to the
researcher, separately, from each of the five educational districts, either by mail or by fax.
To enhance the process of administering the questionnaire, schools were informed by
telephone communication on the date of the visit. In order to ascertain the uniformity of
survey administration, the researcher decided to pay personal visits to all sample schools.
She was determined to meet the teachers in person whenever possible, either individually
or collectively, to brief the respondents with the purpose of the study, indicate the
significance of their co-operation, persuade respondents to try to answer all items and to
give them instructions on the response procedure. It was emphasized that the
questionnaire was not a 'test' and that it was the teacher's personal opinion that was
important, in order to, possibly, make comparisons between different subject areas. Thus,
during her visits to schools the researcher asked to meet the nominee from each of the
selected departments: science, social studies, English, Islamic studies, and IT. In fact all
principals were overwhelmingly co-operative, and the majority claimed to be interested in
environmental issues. They responded to the request by calling for a representative from
each of the required departments to attend a short meeting. The meeting, which normally
took 15-20 minutes, was held either at the principal's office or at any other adjacent
vacant office.

On these occasions, it was noticed that the term 'environment' was often understood by
the principals as well as teachers as a reference to particular subject discipline mainly
science. At the same time it was also observed that the term EE is not commonly used or
acknowledged. Most, if not all, posed fundamental questions over their uncertainty about
the definition of EE and its goals, and required clarification. In order not to impose her
personal view or influence the teachers, the researcher tried to persuade teachers to
present their own perspectives and experiences on the matter. She was satisfied to convey

the realization that the educational connotations of the term EE are broad. Teachers were urged to accept that precise interpretation would depend on the ideologies held by individuals or authorities, and that EE was capable of different emphasis and approaches depending on the priorities and the context in which it takes place. They were allowed considerable time (approximately one week) to respond. The administration of the questionnaire started from the 26th of March and was completed on the 14th of May 1997.

Collecting the questionnaire data

Most of the questionnaires were collected personally since the mail system in the Ministry is unreliable. Some of the remote schools were asked to send their responses by mail to the researcher's work address at the Ministry. As a consequence, sets of questionnaires from two schools (supposedly 10 responses) proved to be lost by mail. Only five returned questionnaires were excluded from the analysis. Two of these were partially filled up to less than 1/3rd of the items. Two others were responded by Arabic language subject teachers and one by a mathematics subject teacher in place of IT teachers. This response rate indicates the high commitment of the school principals in administering the questionnaires effectively.

Issues

It is important to note that the particular focus of this thesis has evolved and in some ways has changed significantly from the emphasis reflected in the questionnaire survey. When the questionnaire was piloted, the need for additional 'open' questions was shown necessary; this has proved to be very important as it gave the resulting data a flexibility that otherwise it might not have had. Initially, the questionnaire was designed to identify the use of IT facilities provided at Middle Kuwaiti schools for the provision of some aspects of EE. This was the judgement behind including the IT teachers in the sample. The focus of the initial survey was mainly to assess the technical aspects of EE such as the teaching strategies incorporated for teaching EE in Kuwaiti middle schools. At a later stage, the emphasis has turned more to the ethical aspects of EE, mainly those in harmony with the Islamic tradition. As a result, some questions such as teaching techniques, teaching resources and the needs of pupils become relatively less important, and thus were given less emphasis in the analysis (Chapter 6). As Stimpson (1996) has pointed out, in the later stages of a research, some aspects may have to be left out, while others may not be addressed.

4.5   Teacher workshop

As noted in section 4.3.1, the overall methodology adopted in this research required the design, implementation and evaluation of a teacher meant workshop in Kuwaiti schools (see Chapter 7). According to Robottom and Hart (1993) and Fien (1998) in-service training should be considered as a preliminary step in the field of continuing professional development which is required if the goals of EE are to be achieved. The goal of the workshop was to help focus critical personal reflection on EE within the specific Kuwaiti context, in order to help develop in the participants a personal professional ethic with respect to the environment, that which encouraged change. It is hoped that the information and ideas clarified may ultimately, provide guidelines for interested teachers for the development of EE strategies in their schools. The workshop was, therefore, a source of 'data'.

4.5.1   Procedures for obtaining the approval for conducting the workshop

Any request that deals with schools has to gain the approval of the authority in the ME, and has to follow formal procedures. Initially, the researcher addressed in writing on the 24th of September 1997, the director of the ERU, which is a division of the ME (and the workplace of the researcher), for his approval to conduct a workshop in EE for middle school teachers. The director, who is usually authorized to grant access for empirical educational researches within the realm of the ME, initially declined and directed the researcher to go through the Ministry's entire sophisticated routine processes. This led the researcher to address a personal letter to the under-secretary of the ME on 7th October 1997 (see Vol. 2, Appendix 4.5a). The under-secretary referred the request to the Assistant under-secretary for information affairs. He, in-turn, referred the request to the director of the department responsible for in-service teacher training, the Growth and Development Administration (GDA) calling for his comment. To expedite the procedure, the researcher asked for a meeting with the director of GDA, explained in detail her objectives, requirements and the possible outcomes of the workshop.

As this personal request had no precedent, the director expressed his initial approval for providing the educational facilities for the study, while revealing his reservations on the proposed workshop. The director also asked for a copy of the workshop outline well in advance of his final decision. Apparently, as the proposal had not been suggested

officially, there was caution on educational, political and technical grounds. Prolonged negotiations ensued (Vol. 2, Appendix 4.5b-4.5e) during which time detailed matters, including the number of schools to be involved, were discussed.

Finally, on November 29th 1997, after details had been referred to the Director General of the Capital division of education, the researcher could officially begin her telephone contacts and personal visits to the nominated schools. These attempts were pursued in order to familiarize the prospective participants with the aims and objectives of the workshop, and propagate for the activities and arrangements. In the meantime the researcher paid several visits to the GDA in order to co-ordinate for the preparation of implementing the workshop.

4.5.2   The sample of the workshop participants

During the researcher's schools' visits to administer the survey questionnaire (see Section 4.4.2), the researcher discussed with the principals of the sample schools, her intention to implement, in a later stage, a workshop in EE. This was to sense their initial reaction to the proposal. In the meantime, she sought the advice of the general inspector of science to identify schools known for their co-operation in external activities. The researcher settled on five schools, all of which agreed to participate. The criteria for school selection, therefore, were basically the school's enthusiasm and readiness to take on board environmental issues. For the convenience of transportation all five schools were selected from one educational district, namely, 'the Capital division' (see Chapter 1, Figure 1.1).

The researcher asked the principals of the schools to select one Kuwaiti teacher from each of the five subject departments: science, social sciences, Islamic education, English and IT to attend the workshop. A great number of Kuwaitis are confined by tradition. Therefore, a decision was made to select only female teachers, on the basis of the possibility of female teachers' refusal to participate freely in the discussions necessary for the success of the workshop. They may have refrained from expressing their opinions overtly in the presence of the other sex.

4.5.3 Preparing material for the developed EE workshop

Approximately two weeks prior to commencement of the workshop, the researcher provided the participants with some basic and preliminary materials regarding the issues to be dealt with:

- Each participant was provided with a copy of two chapters from a reference book in EE. They were persuaded to try to review the material in order to gain some background on the subject.
- Each school was provided with two copies of a video-tape on accumulation of solid waste entitled *'Your Waste - Your Choice'*, Copyright: Somerset Joint Councils Waste Management Group, 1996.
- Each school was also provided with two copies of a video-tape on the reconstruction of the Kuwaiti water and electricity plants after the Gulf War, *entitled 'Construction after Destruction'*, prepared by Ministry of Electricity and Water (MEW): Kuwait, 1992.

The tapes were handed in person to the administration of each participant school. One copy of each was placed at the school's audio-visual room to provide the chance for those who wish to watch the tapes at their convenience. The other copy was for home use. In addition as a supplementary reading, the researcher prepared a handout to provide each participant with some elaboration regarding some of the basic concepts of the workshop content, and material for future reference (see Vol. 2, Appendix 4.6).

To prepare for the workshop content and material, the researcher made range of contacts including visits to the MEW, and to the Ministry of Information in order to search for some pictures that could help learners to gain historical background on the main issues. The whole preparation process took a period of 6 weeks.

During the days preceding the workshop the researcher established person-person contacts with teachers through couple of visits to the schools and gave a brief outline of the workshop content, its expected outcomes and the role of the participants during the workshop. All the meetings were held in the principals' or the vice-principals' offices.

4.5.4 Description of the workshop

The two-day workshop took place on the 21st – 23rd of December 1997, to which 25 Kuwaiti female middle school teachers of one district area were invited. Attendance was 24 participants. The workshop aimed to identify some teaching strategies that teachers could use to develop EE learning activities in schools. The environmental themes covered at the workshop were focussed by concentrating on the following two themes:

- Electricity and water savings could lead to conservation of fossil fuel (non-renewable resource) for later generations, and can help limiting air and water pollution.
- Controlling the generation of solid waste and managing recycling can help conservation of natural resources, and can help limiting pollution.

The workshop activities were organized around six key topics namely:

1. Concepts of EE, and EfS,
2. Natural resources and impact of human activities mainly,
3. Solid waste, water and electricity consumption.
4. Recycling of paper, glass, plastic and aluminium.
5. The role of the school and educators for developing/clarifying such concepts and issues.

The themes were developed in the workshop through a mixed pedagogy including mini-lectures, inviting a guest lecturer, and classroom activities in small groups, during which the researcher was moving around the groups, debriefing the activities. The workshop attempted to connect local, national and global issues and to emphasize the complexity of EE, which the interdisciplinary approach re-enforces. Based upon a spread of background and viewpoints, participants were divided to form groups of five members each of different subject disciplines, but for a detailed description see Chapter 7.

An evaluation questionnaire sheet, the preliminary data collection tool, was prepared to document the participants' views in assessing the workshop from several aspects as a means for future development. At the same time a participant observer (see section 4.6.3) wrote his immediate response to the workshop, as did the workshop leader/researcher.

4.6   Following the workshop

4.6.1   Preparing the workshop evaluation questionnaire

An evaluation questionnaire was designed to be answered by the participant teachers attending the workshop. The questions were developed in two phases. First, the researcher drafted a list of 30 objective items and seven open-ended questions. To obtain feedback on content and its construction, the sheet (the English version) was shown for comment to her supervisors, Dr. David Lambert, and Professor Michael Barnett at the University of London. The Arabic version was shown to Dr. Islam Nofel consultant at ERU, ME, Kuwait. The evaluation questions were also presented to three researchers in the ME, Miss Fatima Abu Al-Hassan, Mrs. Fitooh Al-Mejadi and Mrs. Khawla Al-Qaswini to obtain feed back on the intelligibility and face validity. Based on their comments, the second draft (Arabic version) was revised to take its final design (see Vol. 2, Appendix 4.7).

The aim of the evaluation sheet was to gain an insight of the impact of the workshop on the participants on a personal and professional level, and to register their suggestions as a means for developing the workshop.

4.6.2   Description of the evaluation questionnaire and its administration

The evaluation questionnaire sheet included 31 objective items (see Vol. 2, Appendix 4.8 for the English version) divided into six distinct sections. Each item had five response options ranging from very well (a value of 1), to not at all (a value of 5). Respondents were asked to rate each statement according to their own view. They were invited to comment after each section. The questionnaire was rounded off with eight open- ended questions. The first section, headed 'the aims' designed to gather information about the achievement of the workshop aims. The second section 'the content' was designed to evaluate all aspects of the workshop content. The third section, 'teaching techniques' was designed to measure the effectiveness of the teaching techniques being used. The following section on educational aids, management and organization was designed to measure the relevance of the educational aids utilized at the workshop and the management service. The last section explores in general the perspectives of the participants about the workshop. Results and analysis of the evaluation data are presented in Chapter 8.

At the end of the workshop participants were given the questionnaires to take back to their schools and complete. The forms were collected personally by the researcher after approximately two weeks duration from the workshop. The researcher had to pay more than one visit to some of the participant schools. All the twenty-four participants eventually responded.

4.6.3   *Evaluation of the external observer*

The head of the teacher-training department, Salim Al-Failkawi, was interested personally in the subject matter of the workshop and, therefore, attended the workshop and offered his personal assistance. On the researcher's request, he provided an informal written evaluation report on the workshop (see Vol. 2, Appendix 4.9a,b).

4.7   Choosing the participant school for follow up work

As the research was not officially endorsed, the researcher was sceptical about getting any of the schools to co-operate with her beyond the workshop. Nevertheless, during the course of the workshop activities, she expressed her personal intention of getting each group to explore the issues raised in the workshop. Mainly, the ideal was to set out an agenda of small-scale project(s) on EE that they could practically address at school with their students, during the current school year. Early signs of positive response to the workshop were noticed with two of the five participant groups.

The 'Safia middle school' members, participants of the workshop, were initially willing and lately have proved to be able, to make contributions through their original work with their pupils. While engaged with the activities, they were enthusiastic to present ideas for implementation and expressed their concern for immediate action at their school. They promised to respond to the workshop ideas as soon as their timetable allows.

Ever since the researcher's first mission to collect the evaluation sheets from the schools, the need to form a link with one of the 'participant' schools seemed essential. In due course, without deliberate plan, 'Safia school' was 'naturally selected' for further support and study. The link was to maintain a stimulating dialogue and to pave the way for a better understanding of the follow up events. At this stage it was not the prime motive of

the research to discover blocks and obstacles to EE, a new concept in Kuwaiti educational discourse, but to identify what stimulated interest and continued commitment.

4.7.1 Conducting formal interviews

As the collection of the data on the immediate impact of the workshop was over, examination of the long-term impact of the workshop was essential. Therefore, the researcher sought the support, and in turn has supported, the chosen school 'Safia Middle School' in order to pursue, in a later stage, some environmental activities. During her informal visits to the school, she was able to develop her research role as 'participant observer' (see section 4.9).

The link lasted over a four-month period following the workshop. Towards the end of the school year, interviews with teachers were undertaken to provide a source of feedback information on the longer-term effect of the workshop and to provide understanding of the means of developing the workshop. A semi-structured interview form (see Vol. 2, Appendix 4.10) was designed to let interviewees respond in an open-ended way; in this manner the individual's own interpretations and meanings are allowed to surface in the interview data (Layder,1993:41). The interviews were to provide evidence of teachers' conceptions regarding their responses on the ideas presented at the workshop, and to identify any impact or changes in their thinking, their feelings, attitudes and behaviour. A major interest was also to illicit their suggestions, and gain insight into their commitment to teaching for sustainability.

Stimpson (1996) commented that impersonality has gains and losses. He identified some shortcomings of interviews being labour-intensive and time-consuming, whilst Thomas (1998) identified some advantages of interviews, stating that an investigator taking the time and trouble to conduct personal interviews, rather than simply pass out questionnaires, suggests to the respondents that the researcher particularly values their opinions. This can enhance the diligence and care with which respondents answer questions. Furthermore, the interview setting enables a researcher to clarify exactly what is needed. Interviews also can provide an in-depth understanding of a respondent's motives, patterns of reasoning, and emotional reactions not possible with questionnaires (ibid:133).

4.8   Analysis of the data

The thesis relies heavily on the qualitative data particularly those related to the understanding of strengths and weaknesses of the workshop and the measures for improvements. All the collected data of the survey and the evaluation questionnaire were originally assembled in Arabic. Each variable corresponding to the personal information on the respondents, as well as the objective data, were coded and analysed by SPSS statistics software. Results of the objective items are presented in tables. The subjective data were copied, summarized, categorized manually and were translated to English. The analysis considers clusters of items that could reflect the teachers' understanding of EE and their actual contribution to EE. Full discussion of the analysis and the findings resulting from this is found in Chapters 6 and 8.

4.9   The changing focus of this research

The main cause for the Ministry's apparent reluctance in sponsoring the workshop was explained by one of the officials to be due to the fact that it was not organized by an official body, and it might be in conflict with the existing policies of the Ministry's organization. Therefore, the workshop was denied any financial aid. Moreover, the officials made it clear that the Ministry would not be responsible for awarding certificates to the teachers for their attendance at the specified workshop, as it is usually the case. This could have led some of the interested participants to refrain from participation.

The considerable delay (around two months) for getting the permission, caused delay in the implementation of the workshop. It was implemented at the end of the first school term; any extra-curriculum school functions are planned at the outset of the school year. Moreover, the researcher's visits to the schools was subject to the pressure of the workplace timetable and the permission of her directors. These factors probably reduced the chances of the particular school implementing a large-scale activity in EE. However, the success of the workshop was recognized, in a late stage, by the ME through a formal request sent to the researcher the following school year (in1998), to participate in training middle school teachers in some activities concerning EE (Vol. 2, Appendix 4.11).

At the stage of implementing the workshop, the enthusiasm of RE teacher participants on the ethical aspects of EE, led the researcher to focus on the environmental ethics of

Islamic teachings. After developing a defined conceptual framework on the Islamic ethics, through further reading and reflection, the initial research questions were revised to the ones now stated in Chapter 1, section 1.9.2, and Chapter 4, section 4.1.

Apart from the issues of teacher preparation and the availability of teaching aids and external support, the difficulty faced by the action researchers (teachers of Safia school) was in finding 'enough' space within the school timetable for the necessary interdisciplinary actions.

From her initial visit to participant school 'Safia School', the researcher adopted the role of an external consultant and facilitator. She was determined to have teachers taking a role in planning and deciding what to do, providing some support to the teachers' own ideas and suggestions, such as providing them with translation of some practical activities with pupils at British schools, to test their ideas. All activities implemented (see Chapter 8) were induced from the teachers' own thoughts. They have taken responsibility and control for all the required arrangements from planning to implementation of the school activities; the researcher's intervention was to monitor progress and to influence in supporting their action.

Hillcoat (1996) concludes that, with the best intentions, the role a researcher takes during an action research project can be in itself problematic, and can unwittingly contribute to the status quo. Therefore, action researchers may have to separate themselves from the other participants, and take on the group facilitation role, whether they like it or not. Fien and Hillcoat (1996:34) quote Clandinin (1985) stating:

'the researcher cannot enter a teacher's world purely as an observer. The research process is an interactive, dialectical one. Thus the text that emerges from the process of working with a teacher is a shared one in which [n] either the teacher or the researcher emerges unchanged'.

Therefore, the role of the researcher in the generation of text is that of a co-equal participant in the research, responsible for action as much as any other participant in the research. Slater (1996) identified the role of the action researchers in initiating action as the means to effect some improvement of their aim to be part of the research to understand better what is going on, to bring about change and to evaluate that change.

A striking feature of the activities was that the teachers were aware of the pupils' role in contributing to the development of the activities. They claim that some strategies and ideas were suggested by the pupils and were being actually employed, such as the idea of the role play of water and electricity featured in the school broadcast (Appendix 4.12).

4.10   Conclusion

This thesis has adopted a pluralistic, or at least inclusive approach to research methodologies, to develop its analysis and strengthen its argument. This chapter has formulated an account of the methodology adopted, procedures followed and constraints encountered for the acquisition of the data. It has fitted together a strategy necessary for generating data on which to base a response to the research questions. The next chapter considers one component of the data, namely the documentary analysis of student's textbooks.

Chapter Five

Audit of Kuwaiti middle school textbooks

5.1   Introduction

This thesis argues that the principles of Islamic tradition offer a comprehensive code of environmental ethics. Against the background presented in Chapters 1, 2 and 3, it is felt that there is a need to examine critically the environmental worldview embedded within the Kuwaiti educational curriculum. Along with Chapter 6, this chapter is an attempt to determine the nature and the extent of EE within the existing middle school curriculum. Kuwaiti school textbooks (see Chapter 1, section 1.2) define the Kuwaiti educational curriculum, which are used by all students; therefore, they are assumed to be a close portrayal of the contents of the curriculum.

Reviewing the social studies textbooks reveals that the place of EE is quite limited. For brevity, the audit for this thesis is limited to the science, and Islamic textbooks only. Science texts were chosen for auditing since the ME claims that EE content is infused mainly through the science curriculum (Unesco-UNEP,198?:75), particularly through units dealing with pollution, natural resources, food problems, environmental balance and desertification. Alongside science, Islamic texts were also chosen for auditing, since Chapter 2 has set out the argument that as far as promoting a balanced relationship between human beings and their natural environment is concerned, Islamic teaching consists of environmental ethics which could 'carry' an ecocentric EE.

The textbook audit in this chapter attempts to identify the environmental concepts, skills or values that are, or seem to be, included within, or are absent from, the student texts. The concise account of the content of the texts is believed to provide an overview of the main topics being undertaken in classrooms, since teachers in Kuwait are not accustomed to making or supplementing the curriculum set out in the official text. Therefore, the first step for auditing each text is to present its contents. The analysis then examines the contents in a critical manner from an Islamic perspective which has resemblance to the ecocentric perspective. It provides brief comments wherever possible, and describes the teaching approaches adopted in addressing the concepts or topics. It is not meant to be a detailed analysis, but *illustrative* and is designed to support the thesis as a whole.

The following headings summarize the main perspectives employed in the analysis of textbook contents, and of which are derived from earlier discussions of Islam and EE in Chapters 2 and 3.

- Islamic environmental ethic, as presented in Chapter 2; mainly, the ethics of moderation in consumption, consideration of the needs of other people, other species, and future generations.
- The role of the individual as implied from Man's position in Islamic belief being representative of God on Earth, his role in handling the 'trust', preserving resources and caring for the environment. This would imply encouraging the learner to critique the modern lifestyle from an Islamic perspective, and to predict the consequences of his actions.
- Proportional balance of environmental knowledge, skills and values in the curriculum required for the promotion of a sustainable lifestyle.
- Provision of actual portrayals or case examples of the seriousness of the contemporary environmental conditions, local and global, in a justifiable manner, and relating present environmental situations to the deep-rooted causes.
- Relating the local state of the environment to global effects and processes.

The reading of Kuwaiti textbooks has been informed by these criteria. This chapter aims to furnish a case for the school curriculum to be under continual review and for adaptation to contemporary life issues, as a means to promote the achievement of a sustainable future.

5.2   Audit of Kuwaiti middle school science textbooks

The following sections deal with textbooks in order of progression through the years. The attempt is to find out what aspects or topics refer to the environment, guided by the criteria identified in 5.1, and examine them critically. The examples given are representative and illustrative.

5.2.1   Audit of first year science textbooks

The list of contents of the two science textbooks assigned for the first middle school students (ME,1994-1995), is shown in Table 5.1, as follows:

Table 5.1- contents of first year middle school science textbook

Unit	Topics
1- Living things.	• Things around us. • Animals. • Plants. • Interaction between Man, animal kingdom and plants.
2- Interaction between matter and heat.	• States of matter. • Effect of heat on matter. • Measuring heat. • Heat conduction.
3- Earth, soil, and agriculture.	• Earth. • Soil. • Agriculture.
4- Light and sight.	• Light and sight. • Characteristics of light • Eye and sight. • Light and colour
5- Magnets & Electricity.	• Magnetic field. • Electricity.
6- Human body.	• Human skeleton, human food, digestive system. • Respiratory system, blood circulation, the skin. • First aid. • Man as distinctive creature.

An overview of the first year science textbooks reveals the following main features characterizing them:

Unit 1 mainly presents cognitive knowledge concerning living and inanimate things. It focuses on Man's activities in exploiting Earth resources. It is worth mentioning that while there is some elaboration about the fact that there are some animals and insects that can be harmful to Man, in contrast there is no reference to the role of contemporary Man in relation to the issue of animal extinction. Dealing with Man-nature relationships in this manner, as discussed in Chapter 3, is a mainly anthropocentric view, and it is much the same for the rest of the texts contents. The text does not promote the Islamic belief regarding the ethical responsibility appointed to Man towards the rest of nature.

Unit 2 deals with scientific cognitive knowledge concerning effects of heat on the state of matter. Unit 3 deals with knowledge about the Earth constituents, types of rocks and soils, the effects of wind and water tide on rocks. Unit 4 deals with knowledge about light, eyesight and the use of lenses. Magnetism and electricity and safety procedures in using electricity are dealt with in unit 5. Unit 6 informs the learner about the physical anatomy of human body. It illustrates some first aid procedures.

In general, the forgoing list indicates that much of the first year science content is focused on purely scientific knowledge. Whilst such a knowledge base is without

question important in contributing to environmental understanding, in none of the units are any environmental issues raised explicitly. The content is void of environmental, social or ethical implications.

5.2.2 Audit of second year science textbooks

The list of contents of the two science textbooks assigned for the second middle school students (ME,1994-1995), is shown in Table 5.2, as follows:

Table 5.2- contents of the second year middle school science textbook

Unit	Topics
1- Man and the environment.	• Environment and its constituents. • Resources of the environment. • Environmental pollution.
2- Green plants are the food manufacturers on Earth.	• Plant's constituents and their functions. • How plants make their food. • Plant productivity.
3- Simple living things.	• Bacteria, fungi and moss. • Man and microbes.
4- Matter and its characteristics.	• States of matter. • Changes in matter. • Elements and compounds. • Mixtures and solvents. • Detection of matter.
5- Man and the weather.	• Atmospheric air around us. • Atmospheric pressure. • Atmospheric air and the weather. • Atmospheric measurement.
6- Man and the universe.	• Earth, the sun and the stars. • The moon. • Annual seasons. • Solar system. • Space discovery.

An overview of the second year science textbooks reveals the following main features characterizing them:

Unit 1 furnishes a background on the different types of natural and man-made environments and the need of all living beings for water, air and food for their sustenance; it gives examples of the integrated relationship between living and non-living constituents. It differentiates between marine environments, and forest, desert and glacier environments on Earth. Concerning environmental resources, the text elaborates on Man's dependency on animal and plant resources as well as his need of water for plant irrigation. Concerning oil and gas resources (p:58), illustrated with some pictures (see Vol. 2, Appendix 5.1), the text serves only to inform the learners on the use of such resources for Man's well-being. No hint or indication is given for the

ethical need to conserve such resources, nor introducing the concept of 'finite' quantity. There is no reference of any kind to encourage the learners to consider their consumption of these resources or to inform them of the scarcity of such resources for other people around the world. Yet, the last paragraph of this section ends in addressing the learner, under the heading 'What you have learned', with the following questions:

- Are Earth resources adequate for all its inhabitants?
- Are there going to be enough resources for us and for our children?
- Do you leave the tap open after use?
- Do we prepare food more than our needs and throw the rest in the wastebasket?
- Do we leave the kitchen gas open without use?
- We need to economize in our usage of resources. Why? (p:59)

It seems that the text supposes that the learners 'know' or have sufficient background on such diverse and interrelated issues, since the unit does not prepare students to respond to these questions fully. It might perhaps be the case that the teacher is supposed to be well qualified to help the learners reach conclusions to the presented questions, particularly the final one. It would be fair to acknowledge that some of these themes are complex, need to be dealt with in several educational settings, and may require maturity.

In relation to the issue of atmospheric pollution, the textbook lists two aspects of air pollution. On 'dust', the paragraph ends with a bold assertion emphasizing 'Science helps us solve our problems'. An example, illustrated by a picture (see Vol. 2, Appendix 5.2), of an air conditioner is given to emphasize that air filters can help cleaning air dust (p:68). On 'fuel combustion', examples of air pollution by fossil fuel combustion are given, illustrated by pictures of smoke released from transport vehicles and factories (see Vol. 2, Appendix 5.3), captioned with the following statement 'factories and fires are sources of air pollution'. The text goes on to state the role of factory owners and governments in reducing air pollution. Furthermore, it provides the learner with proposed 'solutions' to the problem of air pollution, suggesting for example: 'using one car for the transport of the whole family; using public transport and the use of bicycles' (pp:72-73). Environmental consequences of air pollutants such as acid deposition, or the issue of heat trap resulting from the discharge of large amounts of CO_2, are totally absent.

It seems that the text presents problems of a certain kind, usually local in extent, although there is an attempt to raise global effects. At the same time it provides

solutions without allowing the learner to demonstrate his/her intellect and express his/her attitudes and feelings towards the problems. There is no evidence to show that the learner is encouraged to place him/herself as a participant to contribute to solving life problems, or to express thoughts and expectations for the future of the environment, relative to the Islamic teachings versus present actions and behaviour patterns.

In relation to the issue of food pollution by pesticides (p:75), learners are informed that pesticides are used for domestic use as well as for agricultural purposes. It goes on to say that residues of pesticides on vegetation are harmful to human consumption, but at the same time it assures the reader that these chemicals can be released simply by 'proper' washing. Accompanying pictures (Vol. 2, Appendix 5.4a and 5.4b) showing fruits washed by running tap water, and a boy washing his face, do not imply consideration of water wastage. Again the text displays solutions by stating that the government monitors pesticide-producing factories and allows them to use standard rates of toxic chemicals in their products. The text also reassures the learner that the government checks all imported foodstuffs and tests their safety from pesticides. It lists the following procedures to be followed in order to insure safety from contamination of pesticides:

- Wash the groceries before eating.
- Use pesticides according to the instructions stated on the can.
- Do not spray pesticides close to food containers.

The need to cut down the use of fertilizers and pesticides and the long-term effects of their intensive use are issues which are not addressed; furthermore, there is no mention of genetic modification. Again, the scope and definition of 'environmental issues' is limited to the local and predominantly domestic. Similarly, in relation to the issue of water pollution the textbook states that the government provides residential areas with fresh water. The text goes on to ask the question:

- At home we keep our drinking water 'clean'. How do you keep your drinking water 'unpolluted'?

It is noticed through out the text that the text often uses the term 'polluted' reciprocal to the terms 'unclean', or 'littered'. With reference to sources of water pollution (pp:77-78) accompanied by some pictures with no captions (see Vol. 2, Appendix 5.5), the text simply states that:

- 'Some' factories dispose of their waste into water resources.
- 'Some' factory sewage is poisonous and causes the extinction of marine life.
- The government enacts laws on factories and designates sites for their industrial discharges.

It could be argued that the text does not allow the learner to appreciate deeper-seated issues, nor the uncertainty that surrounds environmental issues and how individuals and societies may respond to them. For example, that it might not be possible to wash out the pesticides on the groceries, or the water reaching his/her residence might already be polluted, or that the local factories could pollute the local water sources. The text assures the learner that the government is doing its part to ensure the safety of drinking water for all; it does not consider that the individual may have a role in minimizing water contamination.

Under the heading *'Solid waste'* (p:81), accompanied with some pictures of littered places one of them captioned 'park visitors leaving their litter behind', (see Vol. 2, Appendix 5.6), the text merely presents the issue through posing the following questions:

- Does the house floor get 'polluted'? Why do we use sweepers in the house?
- Are there litter-bins in the houses, the offices? Why?
- Do the streets and gardens get polluted?
- How can 'we' dispose of solid waste such as cans, empty glass bottles and food surplus?

No reference is made to consumption patterns and packaging to the issue for the need to minimize house waste or sewage, nor to the issue of sorting out solid waste for recycling. The last statement in this unit states the solution as follows:

Waste carriers collect solid waste from houses, schools, offices, hospitals and factories.

(p:82)

This implies that waste produced from whichever source in the community is collected by those concerned - then simply disposed of: this is not considered an issue in any way.

Unit 2 furnishes background on plants' constituents, their production and their significance to Man. Although the text states that "caring for plantation areas in the environment is 'a civilized manner' that reflects peoples' civilization" (p:109), under the heading *'Practical activity'*, the pupil is asked to "pull out a plant from the garden. Do you feel resistance? Why?" (p:100). Obviously, such a paradoxical instruction in dealing with a living thing is neither 'civilized' nor in keeping with the Islamic environmental ethics.

Under the heading *'Environmental protection'* the text states:

- Man cuts forest-trees from the environment that which 'we' live in. Do you agree with that?
- What is the effect of this act on the rate of oxygen in the atmosphere?
- Each one of us needs to protect the environment.

It could be argued that a pupil living in a desert region would not be expected to feel sympathetic to the forest environment through a direct question and answer approach. Moreover, while the text emphasizes the significance of forests for oxygen production it points out no reference to the effect of forest destruction on the increase of the rate of carbon dioxide in the atmosphere, which has become a controversial environmental issue during the last few decades.

Unit 4 furnishes a scientific background on the different states of matter and the role of heat transfer in changing the state of matter. It differentiates between physical and chemical changes and between elements and compounds. The text refers to the interaction of carbon and oxygen elements to form CO_2 compound. It elaborates by stating the significance of CO_2 and water compounds for mankind.

The 'greenhouse effect' might be considered a complex environmental matter that might need higher order of thinking. In that case, the scientific information given in Unit 4 could be used as a basis for discussion, in a latter stage, gaining insight into the causes for the increase of CO_2 gas in the atmosphere. Yet, it could also be argued that the second year middle school pupils are old enough to be, at least, informed about the effect of the increase of CO_2 gas on the climate.

In dealing with mixtures and solvents, the text refers to the extraction of drinking water from the sea by evaporation and condensation processes. It goes on to inform the reader that some countries depend on rivers as their source for drinking water, with the following statements:

- River water is not potable. Why?
- There is sand in river water. Sand does not dissolve in water. How can you separate sand from water? (p:46)

The text provides the method of filtration as a solution for separation of sand from water and boiling or adding chlorine as means to purify water from germs. The text

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does not make any reference to the possibility of river pollution by toxic chemicals caused by Man. It provides a very limited perspective of water in the environment.

Unit 5 gives scientific background on the weather and climate. The text asks the learner:

What are the factors that affect the weather changes around us? Is it the sun the wind, the water or all of those altogether?   (p:84)

It goes on to state that it is by the grace of God that changes of the climate take place (p:91). There is no hint of the possibility that changes in atmospheric constituents may affect the climate or that climate changes may be caused by the interference of Man.

Unit 6 provides brief scientific information about the sun and the Earth, the stars, formation of day and night, the moon and its motion around the Earth. It refers to the differences in temperatures between different areas on Earth and between the annual seasons caused by the distance from the sun and the Earth's orbital movement around the sun.

In general, the subject headings might infer that the text deals with EE. An overview of the text contents reveals that the text only refers to local environmental effects in any detail. The stress is mainly on knowledge content which is heavily descriptive, and in most cases does not portray the existing conditions of the environment, nor of issues to do with environmental changes at various scales. Instead, it focuses on the needs of the economy. It attempts to present 'problems' for which there are specified and ready 'solutions'.

5.2.3   Audit of third year science textbooks

The list of contents of the third year science textbooks (ME,1994-1995), two parts, is shown in Table 5.3, as follows:

Table 5.3- contents of the third year middle school science textbook

Unit	Topics
1- Living things and adaptation.	• Needs of living things. • Adaptation of living beings to their environment. • Sensation in living beings. • Excretion in living beings.
2- Matter and changes of matter.	• Constituents of matter. • Changes that happen to matter
3- Movement, force and pressure.	• Movement. • Force. • Pressure.
4- Sound in our life.	• How is sound created. • Sound transition. • Sounds are of different types. • Sound and communication.
5- Heat and its measurement.	• Heat expansion. • Heat measurement.
6- Magnetism and electricity.	• Characteristics of magnets. • Magnetic field. • Electromagnetic phenomena.
7- Health and safety.	• Diseases. • A visit to physician.

An overview of the third year science textbooks reveals the following main features characterizing them:

Unit 2 deals with scientific knowledge about matter and molecules. While dealing with the physical changes of matter, a diagram of the water cycle in nature is displayed and is referred to as 'a crucial phenomenon for life' (p:74). On the opposite page a comment on the top of a picture of a car moving on a foggy road says *'fog is a physical change that causes harm to Man'*, meaning that it causes accidents. The book therefore presents the danger arising from physical changes in nature. But such a perspective does not accord with the Islamic Divine outlook on nature (as specified in Chapter 2, section 2.4.5), which implies that natural laws are Divine signs of God and that God has created all forces as friends and helpers of Man and placed them at his disposal. If any of these harm Man, it is because Man is ignorant of the laws that govern them.

Moreover, the chemical changes of matter, such as iron rust which is given as an example of the damaging effects of the power of nature. On the other hand, there is no reference to the interference on behalf of Man in changing the components of the chemical elements of nature. The scientific facts on heat and measurement of Unit 5 are strictly presented as laboratory experiments, rather than considered in authentic environmental contexts.

Unit 5 deals with heat transmission, expansion and measurement (pp:57-80). Once again, reference to the trapped heat within the atmosphere reflected from the Earth surface, which is a globally established fact as the greenhouse effect, is absent. In the context of the laboratory experiments and the theoretical explanations related to magnetism and electricity in unit 6, the possible harmful effects of high voltage electromagnetic fields caused by modern technology could be brought into the learners' attention. There is a general absence of global environmental issues.

5.2.4 Audit of fourth year science textbooks

The list of contents of the fourth year science textbooks (ME,1994-1995), two parts, is shown in Table 5.4, as follows:

Table 5.4- contents of the fourth year middle school science textbook

Unit	Topics
1- Energy and tools.	• Work and energy.
2- Matter and its constituents.	• Constituents of matter. • Chemical reactions. • Atomic structure of elements and compounds.
3- Electricity.	• Electricity.
4- Productivity.	• Productivity of living things (plants and animals). • Productivity of Man.
5- Floating and immersed bodies.	• Matter and its measurement. • Floating and immersed bodies in water.
6- Light.	• Reflection and mirrors, lenses. • Sight , prism , colours.
7- Air around us.	• Air constituents.
8- Earth, space and time.	• Earth and space.

An overview of the fourth year science textbooks reveals the following main features characterizing them:

The major part of Unit 7 deals with the components of the atmosphere and preparation of oxygen and CO_2 gases. A diagram illustrating the different layers of the atmosphere (p:139), their temperatures, and the reflection and penetration of electromagnetic waves radiated from a transmitter on Earth towards a satellite, is placed at the front page of the Unit (see Vol. 2, Appendix 5.7). The section informs the reader that the ozone layer absorbs the majority of the harmful rays coming towards Earth from the outside space and so it protects living beings. However, no explanation is provided about the contested issue of ozone layer depletion, other than stating under the heading '*the young researcher*' the following statements:

- Conservation of the ozone layer is the responsibility of all nations.
- Lately several conferences on ozone depletion crisis have been held.
- Discuss this phenomenon explaining the importance of the ozone layer, the problem and its causes.
- You have heard and read about the 'Earth Summit' held in 1992. Mention some environmental problems that have been discussed in the conference and discuss one of them in detail.

(p:143)

It appears that the pupil is supposed to take part in learning and prepare some research. Such a role assigned to the learner leads to questions about the pedagogy used in preparing 'the young researcher' to discuss such a complex issue. It could also be argued that the success of the pupils' research would depend greatly on the teacher's preparation and on his/her role in the teaching-learning process, the school timetable and on the availability of resources at the school media centre. It could also be possible to conclude that dealing with the issue of ozone layer depletion in such depth, at this stage, could be too difficult for the learner. Yet, there seems no reasonable explanation for the neglect, by the textbook authors, to inform pupils about some fundamental scientific principles around the issue and the controversy around it.

The text states that:

'God's laws have kept the quantity of all gases in the atmosphere in a fixed ratio'. (p:150)

No doubt, such an attempt of introducing the moral dimension of education is limited; the text fails to bring about the moral obligation of each individual towards the Earth as being a 'trustee' of God's creation. Here the learner is not informed that the balance of the atmospheric gases can be changed by human actions. The only place in which the text refers to the interference of Man in changing these ratios is made later in one paragraph stating that:

"in 'industrial areas' different gases are emitted from factories, vehicle exhausts, trains and power generators. The increase of rate of such pollutants causes respiratory and intestine diseases, eye irritation and cancer. The reaction of sulfur dioxide with water in the atmosphere causes the formulation of acid rain which damages buildings, cars and other things". (p:157)

It is only at the final stage of the middle school that the learner is incidentally informed of the effects of the increase of air pollutants. It could be argued that it is not satisfactory to give incomplete information and leaving it open to the learner's speculation, for example without specifying what 'other things' are. The opposite page of the text presents pictures, shown previously (in the previous years texts), to illustrate air pollution from aviation and industrialization (see Vol. 2, Appendix 5.8).

It is clear that the text has not taken the opportunities to engage pupils in the responsibility of mankind towards God's creation as stated in the Islamic ethics, and to discuss with them how to behave in relation to the Earth. It appears that the environment is not on the agenda of people who have set the curriculum. The treatment of EE, which appears to be dominated by 'education about the environment', does not present all aspects of environmental information satisfactorily. The content of the text can be characterized as purely descriptive knowledge; it presents science without ethical contexts or reference to controversial environmental issues.

5.2.5   General remarks on science texts

In summary, the content of the texts can be characterized as purely scientific knowledge. The science curriculum does not seem to touch on environmental issues more than the acquisition of knowledge on the environment. It does not satisfy the aims for education for sustainability, discussed in Chapter 3, section 3.7.3. It adopts an approach to EE based on scientific rationality and on simple cause and effect dualism. The stress is on supply of resources rather than conservation, and on knowledge rather than environmental values.

The curriculum does not critique the accepted Western norms of exploitative approaches to nature. It promotes an unproblematic view of environmental issues, and does not make connections between individual behavioural patterns and possible negative impacts on the environment. It propagates the notion that the government, at all costs, is able to provide a whole range of services, indicating, for example, that it guarantees to provide its citizens with drinking water. Moreover, the sets of scientific concepts are isolated from those learned through other subject areas, where there is no reference made to any other curriculum. The scientific curriculum encourages a passive form of education promoting an approach to learning which demonstrates theoretical knowledge. It does not encourage genuine inquiry and critical awareness, although some of the textbooks' questions seem to make a nod in this direction, exhorting, for example, pupils to become active researchers.

The science curriculum neglects consideration of Islamic values and morality towards the Earth. Community activities are not included as a facet of the curriculum. Kuwait desert and marine present environmental conditions are barely mentioned. For example,

the impact of the Iraqi aggression on the desert and marine life, or the impact of oil industry on Kuwait's environment are hardly evident.

Several controversial environmental issues are neglected in the context of the scientific theories. For example, the possible build up of trapped heat within the Earth's atmosphere caused by the accumulation of greenhouse gases is not mentioned at any place throughout the science textbooks of the middle school stage. The mode of provision of EE seems to emphasize technical solutions to environmental problems at the expense of addressing global environmental issues, and a commitment to a life of less consumption. It could be concluded that the ideology adopted in Kuwaiti science texts is clearly a technocratic one.

5.3   Audit of Islamic education textbooks

Islamic education textbooks were audited in the same way as the science texts. The following sections deal with the texts in order of progression through the years. The attempt is to describe and examine critically what aspects refer to the environment. EE is not seen as part of the remit of Islamic education, and as yet the following audit shows that there are many lost opportunities. The examples given are representative and illustrative.

5.3.1   Audit of first year Islamic education textbooks

The list of contents of the first year RE textbook (ME,1996-1997) is shown in Table 5.5, as follows:

Table 5.5-contents of the first year middle school RE textbook

	Topics
Unit 1	• God has sent his Prophets to guide humanity. • Characteristics of some Prophets
Unit 2	• *The Shari'ah* is the superior law for the welfare of people.
Unit 3	• Prophet Mohammed is the best worshipper of God.
Unit 4	• Prophet Mohammed was the most moralized Man. • Muslims follow Prophet Mohammed Tradition.

An overview of the first year RE text reveals the following main features characterizing it:

The text (p:15) under the title 'God has sent his Prophets to guide humanity', starts with a Qur'anic verse (Al-Ra'ad,13:4) that refers to the diversity of God's creation. The text confirms that God is the Creator and has subjugated all constituents of the universe to Man's benefit. In return, He has asked his servants to worship Him and thank Him. The text goes on to explain how through God's messengers Man became enlightened in being acquainted to God, warned from evil and was promised heaven through 'good morals'. A Muslim has to behave as though God is watching him although He cannot be seen (pp:15-18). However, no explanation or discussion of the form of worship to God is induced, at least none that has any environmental bearing. There is no appreciation for the genetic diversity, for example or concern for endangered species.

The reader is acquainted with the characteristics of the Prophets: Noah, Abraham, Mosses, Jesus and others (pp:15-52). The main characteristics are that they have suffered agonies during their missions. The narration of the moralities of the successive prophets and messengers of God bear no translation of 'good morals' to environmental matters.

Within the concept 'Prophet Mohammed is the last prophet' (pp:61-89), the reader is informed that the Prophet called for equity and justice between people. He also called for good manners, honesty, and love. General examples of good deeds are given, such as: forbidding transgress of the strong on the weak, the old over the young, unfairness to the poor, racism between black and white, and cheating in trade, but not one to do with the environment.

The text narrates the Prophet's biography since his birth, how his contemplation in the universe has strengthened his faith, and how he was satisfied with scarce amount of food and water (p:95). The text briefly states that any act for the sake of God, not in conflict with Islam is considered as worship. It gives general examples such as 'instructing people for their own benefit', 'building and constructing on Earth', and being 'moulded with good morals and ethics'. No explanation is given to the reader on how to comply with such Divine orders in dealing with God's 'gifts' to Man, and no emphasis in following the Prophet's tradition of moderation in consumption.

The text narrates stories concerning his forgiveness, caring and passionate relations with servants and people under his authority. The emphasis is that the Muslim has to follow

the Prophet's deeds in his patience and braveness. The text narrates that the Prophet was keeping the rights of others, living in peace with them respecting their properties and their mentalities and personalities (p:160). It calls the reader to keep clean in all occasions, to brush his teeth, wash his hands before eating, cut his nails short and put on his best clothes before going to the mosque; it refers to the following verse (p:180):

{O Children of Adam! Wear your beautiful apparel at every time and place of prayer, eat and drink, but waste not by excess, for Allah loveth not the wasters} (al-Aaraf,7:31-32)

Elaboration is given on the form of 'worship' by praying, paying the 'zekat', etc. There is no reference to the broader connotation of the concept 'worship' explained in Chapter 2, and no comment or elaboration on the word 'waste', which seems not to be of significance within this context. Several other Qura'nic verses within the text are presented, but no explicit explanation is given to most of them. It could be argued that the first year RE text, despite several opportunities within the contexts of the presented Islamic teachings, does not attempt to open up the Islamic values relevant to environmental ethics.

5.3.2 Audit of second year Islamic education textbooks

The list of contents of the second year RE textbook (ME,1996-1997) is shown in Table 5.6, as follows:

Table 5.6- contents of the second year middle school RE textbook

	Topics
Unit 1	• The Muslim has to employ himself in God's obedience.
Unit 2	• God has distinguished mankind with a brain. • Science (Knowledge) develops the intellect and enables Man to build the land. • God has appointed mankind to construct and cultivate the land through knowledge and production. • The Muslim who builds the land employing his mind and his knowledge is a worshipper of God.
Unit 3	• God has subjugated the universe for the benefit of mankind. • The duty of a Muslim is to exploit the universe for the benefit of the individual and the community.
Unit 4	• The Prophet was a model of healthy Man physically, mentally and spiritually.
Unit 5	• Working for the benefit of others and cultivating the Earth is a form of worship.
Unit 6	• A Muslim's community is a loving and co-operative one.
Unit 7	• Islam encourages Muslims to co-operate and work as a group.

An overview of the second year RE textbook reveals the following main features characterizing it:

The text indicates that God has created mankind in the best form, which is a sign of His existence. Man is granted physical capacities and brain to enable him to perform his routine life. The text in several occasions (pp:12, 29, 35, 36, 44, 47, 63, 64, 66, 99) stresses on the notion that constructing and cultivating the land, extracting the Earth's treasures and constructing factories and workshops are signs of obedience to God. In contrast, no hint is given that bares the notion of care and concern for the environment, which is implied in the Islamic concept of the 'covenant' with God. Obviously, the adopted position could be categorized under an anthropocentric, technocratic perspective.

The lesson entitled *'God has chosen mankind to build the land through knowledge and production'* (p:41), starts with the following verse:

{We have honoured the sons of Adam, provided them with transport on land and sea, given them for sustenance things good and pure, and conferred on them special favours above a great part of Our creation}. (Al-Isra,17: 70)

The text explains that by using his brain in contemplation and deduction and seeking 'knowledge', Man deserves to be called representative of God. Within the context of this verse, the notion of 'good' and 'pure' life sustenance from God, could be emphasized against those corrupt and polluted caused by Man. On the same page, the text presents few verses starting with the following, though with no explanation of which acts are considered to be 'mischief':

{Behold, they Lord said to the angels: I will create a vicegerent on Earth. They said: wilt Thou place therein one who will make mischief therein and shed blood?} (Al-Baqara,1:30)

The text is satisfied to comment on the rest of the verses re-stating that with 'knowledge' Man has deserved to be God's representative on Earth. It emphasizes that:

'Islam orders us to make use of every equipment and invention …. the 'knowledge' referred to is the useful knowledge that helps to construct and cultivate the land, and not that harms and destroys. The knowledge that builds bridges and fertilizes Earth, cures diseases, and not that which abolishes such as nuclear weapons, poisonous gases and biological artilleries such as those used by Saddam'.

(p:43)

The lesson ends stating that:

"building and constructing the land is accomplished by looking for the Earth's treasures under the land and the seas. This is not accomplished except with knowledge and labour. Only then Muslims would be worth of God's pleasure".   (p:44)

The lesson entitled: *'The Muslim who builds the land employing his mind and his knowledge is a worshipper of God'* (pp:47-49) has three sub-titles:

- Seeking knowledge is a form of worship.
- Pondering in the universe is a form of worship.
- Work in Islam is a form of worship.

The text mainly stresses thinking and studying the components of the universe, work by utilizing the Earth's treasures, and cultivating the land as different forms of worship. On no occasion, is care and concern for the environment (as part of obedience to 'God's Law' according to Islamic belief) evident. The text (p:49) refers to the following verse:

{But seek with the (wealth) which Allah has bestowed on thee, the home of the Hereafter nor forget thy portion in this world}.   (Al-Qasas,28:77)

But, the school text neglects to cite the rest of the verse:

{But do thou good, as Allah has been good to thee, and seek not (occasions for) mischief in the land for Allah loves not those who do mischief}.

Again, the following concept *'God has subjugated the universe for Man's benefit'* (pp:53-76) stresses on the notion that God has made the universe serviceable to Man and has enabled him to exploit it. The duty of a Muslim is to exploit the universe for the benefit of the individual and the community. The text states that Man is asked to worship God and thank him for all His bounties, any one who refrains from this is an atheist. The limits or ethical consideration for exploitation, reference to the 'proper' handling and moderate consumption of resources as forms of gratitude to God are not recognized.

Under the title *'the body grows with food'* the text presents the verse (Al-Araf,7:31) stated previously in Chapter 3, section 3.3.1. The learner is asked to be moderate in eating balanced and healthy food and to exercise so that he can grow fit and healthy (pp:56, 57). Clearly the advice given for moderation in consuming food is given within

an anthropocentric perspective. It is the health of the individual which matters. No reference to environmental ethics is given.

Under the heading *'thinking expands understanding'* (p:36), the text encourages scientific thinking. A photo (p:37) of students working in the lab is presented (Vol. 2, Appendix 5.9). A sub-title *'The Muslim performs his duty perfectly'* is accompanied by two pictures (p:93), one of factory equipment and the other of a worker in a factory, with no captions to the pictures, (Vol. 2, Appendix 5.10). A sub-title: *'The mind is a great gift'* is followed by a picture (p:100) of half a page in size, of an employee using a computer (Vol. 2, Appendix 5.11). Another sub-title: *'The intelligent mind creates and invents'* is accompanied by a picture (p:102) of a factory (Vol. 2, Appendix 5.12).

Clearly, it could be stated in general that the second year RE textbook strongly advocates the economic interest in preference to the environmental interest. It does not relate scientific development to environmental protection, i.e. it does not question the environmental or ethical implications of the uses of technology. Therefore, it does not reflect the values needed for a future sustainable society.

5.3.3   Audit of third year Islamic education textbooks

The list of contents of the third year RE textbook (ME,1996-1997) is shown in Table 5.7, as follows:

Table 5.7- contents of the third year middle school RE textbook

Chapter	Topics
1	• The Muslim believes in the Oneness of God, the Creator. • The Muslim fears God and does not violate his orders. • Islam calls for Muslims to be compassionate.
2	• God has bestowed Man and favoured him above many of his creation. • The act of Worship is a debt to God. • The Building of Earth is a form of worship to God. • Worship purifies the body. • Prayers are the main pillars of religion. • God has legislated ablution to purify the body. • Fasting is an obligation.

An overview of the third year RE textbook reveals the following main features characterizing it:

The main theme of the text revolves around the Islamic belief in the Oneness of God:

'All what is in the universe stress the Oneness of God ... All missionaries have called for His Oneness ... The beneficent messengers are the best of all people who have worshipped God'.

The text goes on to encourage the learner to follow the prophets' moral behaviours, and explains the Islamic belief in Oneness of humanity. It focuses on the ethics of co-operation, equity and peace with other nations (pp: 53-70).

The text provides some connotations to the meaning of 'Worship'.

"Worship is any virtuous utterance or act performed to please God. It is obedience to God and prohibition of what he has forbidden us to do. It is an act of purification of spirit and behaviour. Tilling the Earth, building bridges, establishing factories, hospitals, mosques, schools and houses are forms of worship. The Muslim fears God and does not violate his orders. He trusts God, thanks God in all occasions, and prays to God in his good and bad days. Religious observances are expressions of the unity of Muslims".   (pp:78-97)

The only place that any thing mentioned that has environmental connotation is spotted within the concept *'worship purifies the body'*. The text states:

'Water is a gift. We should thank God for it. We use water for ablution. We should not waste it'.
                                                                                                            (p:219)

Again, as in the second year RE text, under the concept *'God has favoured Man over all His Creation'* (pp:157-164), the learner is reminded that Man deserved to be the representative of God on Earth because of his ability to gain knowledge. 'Knowledge' attests to God's greatness.

The major remarks are that the text stresses 'good deeds', yet it hardly includes expressions relative to environmental ethics. It does not question the way in which modern life impacts the environment, and neglects consideration of Islamic environmental ethics and morality.

5.3.4   Audit of fourth year Islamic education textbooks

The content list of the fourth year RE textbook (ME,1996-1997) is shown in Table 5.8, as follows:

Table 5.8- content of the fourth year middle school RE textbook

	Topics
Unit 1	- The Muslim believes that there is nothing like God. - God cannot be resembled by any of His creation. - God is the One and only One. - Believers will see God in Heaven.
Unit 2	God's knowledge surpasses every thing.
Unit 3	- God knows whatever Man says, does, or intends to do. - Believers do not cheat, deceive, or curse others.
Unit 4	- All good deeds are forms of worship. - Avoid evil deeds, and perform good deeds. - Worship God. - Follow the steps of the pious. - Perform one's duty perfectly. - Consider other's rights.
Unit 5	- Worship strengthens bonds between believers. - Pilgrimage.
Unit6	The prophet was the best worshipper.

An overview of the fourth year RE textbook reveals the following main features characterizing it:

The text teaches the learner that the devoted Muslim prays, pays the 'zakat', which is an obligatory donation, and goes to Mecca etc. The text also deals with several concepts such as the belief that God is aware of every utterance or deed that comes from Man. Such a belief prevents a believer from disobeying God. It encourages the learner to adopt 'good morals' such as honesty, make account of his deeds, consider other people's rights, seek to earn living by honest work, seek to gain knowledge etc. The learner is informed that a good believer will be rewarded in heaven as a reward for obeying God's orders. Environmental values are not explicit and Western environmental ideologies are not open to question from an Islamic perspective.

5.3.5   General perspective on religious education textbooks

From an Islamic perspective, set out in Chapter 2, the RE curriculum seems short of exploring the Islamic teachings on the environment. The fact that Islam has the wisdom to contribute to the quest for a 'global environmental ethic' discussed in Chapter 3 is hardly evident. It does not encourage the learner to work within the capacity of the

planet or question the negative side of modernity from an Islamic ethical perspective. The concept of sustainable development is not introduced in any meaningful way. It could be said that the curriculum provides misrepresentation of reality, and promotes lifestyles that are compatible with unsustainable use of resources with the dominance of scientific materialism worldview as a basis for making environmental decisions. In short, the curriculum intends to prepare the young people for work in an industrial world, without clarification of its negative sides, and without considering an environmental viewpoint. In this sense, it might seem to advocate a Western secular perspective.

5.4   Concluding remarks

In view of the above analysis, the review of science and Islamic education textbooks from an ecocentric perspective reveals the following general points about Kuwait middle school curriculum. This is a long list, but one which is substantiated by the researcher's reading of the textbooks. It also clearly describes the context in which the workshops took place (Chapter 6).

- The curriculum presents factual knowledge and idealized technology. It presents science as unproblematic and characterized by certainty. Tends to emphasize the technical fixes for environmental problems, and give managerial and technocratic approaches to environmental protection without providing critique of the prevailing lifestyle, structure and mechanism of the modern society.

- As a consequence, the large part of the contents of the curriculum lacks ethical environmental values. The overriding value is on the power of science and technology to exploit nature. The approach adopted to EE is associated with concepts that promote growth and development of the economic sector. Islamic ethics that express environmental concern are not explicitly addressed in the curriculum. The curriculum does not encourage pupils to question what is morally right or wrong.

- The curriculum is framed in the context of a one sided-view, of deciding what is good for Man not what is good for the components of the natural world other than Man. It views the Earth as an object to be exploited for economic utilization and human enterprise as though nature is only subject to Man's investigation, control and dominance. Thus, it does not promote simplified lifestyles in balance with the natural world and in accordance to Islamic tradition.

- The textbooks appear to predetermine what pupils should or should not do without giving them the chance to express their own views. The learner is denied the initiative to formulate his personal understanding. He is not encouraged to criticize or challenge the Western mechanistic worldview.

- The science curriculum does not promote the rational use of natural resources; it is mainly concerned with litter collection. It barely touches the issues of waste disposal, resource exploitation, the loss of wildlife, the value of maintaining biological diversity or the inherent worth of other species. If so, the issue is presented as a problem affecting people living thousands of miles away.

- The RE curriculum does not make connections between individual behaviour patterns and their possible negative impacts on the environment. It might be educating the young people on the dangers posed by human activity to the environment yet it fails to establish a close link at the local level and in the daily life and practices of the learner. It does not inspire motivation for modification of the learner's own lifestyle in compliance with Islamic teachings.

- The textbooks do not assist the learner to comprehend the implications of his/her practices on future generations. It does not encourage him/her to be involved in prediction, futuristic thinking and more precisely in attaining positive vision of the future.

- Care and stewardship of the environment, which is the essence of Islamic teachings, is not expressed clearly. Throughout the curriculum, it is difficult to find any evidence of a commitment to incorporate the concepts of environmental awareness and sustainable development. It seems to encourage and sustain the modern lifestyle. It does not promote re-directing the technical industrial society away from its 'destructive' path.

- The curriculum introduces fragmented knowledge and ideas with no sign of being integrated or connection to other subject areas, at any stage. It does not address the interdependence of social, economic, ethical aspects of environmental issues. The interdisciplinary term of EE provision is not stressed.

- Major global and controversial environmental issues are neglected.

- A great number of the accompanied illustrative pictures are not taken in the Kuwaiti environment or in an Arab country familiar to the learner.

The curriculum devotes little explicit ethical attention to Islamic environmental teachings. At this stage, it is argued that such form of education is not enough to equip

the individual to face up to the potential threats of ecological and environmental degradation, and a contributing member of the society. It could be assumed that the scope of the existing practice of EE in Kuwait middle school does not acknowledge the developed goals of EE and its innovative teaching approaches in the context of the Islamic environmental ethics as set out in Chapter 2, and the concept of education for sustainable development, as discussed in Chapter 3, section 3.7.3.

The textbook analysis reveals that such a curriculum encourages the assumptions and expectations that nature and environmental systems can go on providing humanity with limitless resources and sinks for absorbing wastage of all forms. It does not encourage clarification of assumptions nor fosters a critical perspective paradigm; it does not challenge the status quo. It seems that the dominant ideology promotes an anthropocentric, technocratic approach to nature.

Chapter 6

Assessing teachers' professional needs in developing EE in Kuwaiti middle schools

6.1 Introduction

This thesis was stimulated by the lack of studies in the field of EE in Kuwait. Research question 1 (see Chapter 1, section 1.9.2) requires examination of the prevailing mode and the existing practices of EE in Kuwaiti middle schools. Chapter 5 has provided some evidence that the main characteristic of the content of the textbooks is that it is heavily 'technocratic' and 'anthropocentric', and not compatible with Islamic moral and ethical implications. The purpose of this chapter is to demonstrate that in pursuing the development of EE there is a teacher training need if EE is to be taken in Kuwaiti middle schools.

In relation to the theoretical consideration of Chapter 3 (Western Environmental Ideologies and EfS), this chapter first identifies a list of the characteristics of EE, and of teacher qualities needed for the development of effective EE. It goes on to examine the views and beliefs of a range of Kuwaiti middle school teachers with varying backgrounds and experiences and probes their understandings and practices in tackling the various aspects of EE, in accordance to the established criteria. In an attempt to assess the status of EE in Kuwaiti middle schools, a questionnaire survey was designed (see Vol. 2, Appendix 4.3). Its objectives were to examine the underlying structures and paradigms of EE among Kuwaiti middle school teachers. Its questions were generated drawing upon the arguments presented in Chapter 1, sections 1.7 and 1.8, which have cited critiques of Kuwaiti educational system, as well as drawing upon the arguments presented in Chapter 3. Taking together both the subjective and objective data, the analysis is believed to reflect the status of the provision of EE in Kuwaiti Middle schools.

6.2 Towards criteria for an effective practice of EE

This section attempts to explore the *possible criteria* for the content, policy and pedagogy for 'education for sustainability' (EfS) taken from the Western school system and which may be applied in the Kuwaiti context.

On the basis of real practices and analysis, several educationists and environmental organizations around the globe (e.g.:Huckle & Chidley,1993; Hicks,1994; OECD,1995; WWF,1995; Fien & Corcoran,1996), have expressed the conviction that the mainstream EE, practised in the West, seems inadequate to ensure a positive and hopeful future. They seem to indicate a consensus on defining some common ground for educating for a sustainable society. This section briefly explores lessons from some of those attempts and others for the quest to enrich and strengthen EE practices. It does not claim to make a standard proposal since appropriate schemes would highly depend on the cultural context; prescriptions are designed in accordance with the local, cultural and educational needs. It does not go into a detailed description of these criteria. It is not so much a discussion as of a review: all that this section can claim to offer suggestions of criteria that may guide judgements concerning the professional needs of Kuwaiti teachers charged with the responsibility of developing EE programmes in schools.

6.2.1 Towards criteria for EE policies and programmes

As revealed by the work of the Environment and School Initiative Study (ENSI), OECD (1995) concludes that the main challenges for the future of EE are:

- For educators, policy makers and practitioners to move EE from a peripheral phenomenon to a mainstream activity in education.
- To provide teachers training with the necessary skills and competencies.
- That educational policy-making should consider sustainable development as the key issue for the twenty- first century. (ibid:101)

Posch (1998:50) points out that the ENSI project was based on a theory of learning in which the development of environmental awareness and understanding occurs through an active engagement in finding and implementing solutions to real life environmental problems, those which fall within the sphere of the learners' experiences. Robottom and Hart (1993) maintain that important aspects of EE are best achieved through the processes of investigating real environmental issues. They identify the following characteristics of EE:

- Are based on real problems.
- Make use of both ecological and inter-disciplinary skills and concepts.
- Are socially critical.
- Action oriented.
- Encourage the development of sustainable environment.
- Involve students working together in groups. (Robottom & Hart,1993:23)

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In analysing some school projects, Mayer (1994:102) concludes that the challenge is whether it is possible to build a common project of EE towards common aims. A central emphasis is given to the change of values, behaviour, attitudes and knowledge demanded by EE projects. He adds that to guarantee flexibility a continuous formative evaluation is needed. Niedermeyer (1992:47) provides a checklist (see Vol. 2, Appendix 6.1) intended to help identify well developed, effective instructional programmes in EE.

Newhouse (1990) also identifies some conditions for the design of educational programmes in order to promote environmentally responsible behaviour. In his view, the design must be appropriate for the level of knowledge, attitude, and moral development of the individual. Information about how ecosystems naturally function and the problems that are threatening the well being of all life should be coupled with information about action strategies. Such information should explain both sides of environmental issues, encourage people toward direct contact with the natural environment, and stimulate a sense of responsibility and personal control. Moreover, Newhouse suggests that learners should be given the skills to make future decisions for themselves.

The Curriculum Council for Wales (CCW,1992) adds that good EE must enable pupils to recognize and appreciate the diversity of perspectives and approaches and have opportunities to explore the values and attitudes, which underpin them. It should take pupils into an understanding of the way they can fully play their part in protection of the environment within an ever changing and developing world. At around the same time, Cade (1991:14) identified some hallmarks of an environmentally 'well-educated' person (presented in Vol. 2, Appendix 6.2). Fien (1994) summarizes the criteria for an effective EE to be a balance of knowledge, skills and affective objectives; it needs to be interdisciplinary, inquiry based and involve students in social action projects.

The brief review suggests a level of consensus, at least among the prominent Western environmental educators quoted.

6.2.2   Towards criteria for teacher's competence in EE

There seems to be a general agreement between teacher-educators and curriculum authors that curriculum development and teacher development should be seen as one process. Fien (1993) produced a comprehensive range of workshops on environment and development issues designed for teacher educators. The WWF of UK has launched in-service programs entitled 'Reaching Out', which explore issues of EE and EfS. In addition, OECD which funds the environment and school project ENSI, argues for a higher professional role for practitioners. The project encourages teachers to participate in research of their own, conducted in their own classrooms, and addressing EE issues of interest and concern to themselves.

Hart (1998) draws attention to the fact that since EE is not driven by a finite curriculum mandate, the focus ought to be on teacher discourse. He argues that the interest in inquiry is *change*. Teachers should be engaged in a form of professional development so they can achieve some degree of critical reflection and self-interpretation. Kealy (1995) points out that the major criticism of teacher education is that teachers are taught about alternative teaching strategies by instructors using traditional methods. He recommends that teachers must be trained in teaching methodologies that get learners actively involved in the learning process. Teaching must move towards a more learner-centred approach, where the teacher's job is to facilitate student construction of meaning rather than to dispense information. He concludes that we are not ready for a single model for teacher education but we should translate what we know about learning and teaching into some promising practices for implementation and evaluation in our programmes.

These and other writers have frequently advocated the use of action research projects. The teacher in action research is not an implementer; rather he is a developer of the curriculum. Bacchus (1996:83) argues that teachers need what he refers to as 'pedagogical content knowledge'. They must be able to move beyond passing on procedural knowledge, which simply enables students to acquire information, solve problems or answer examination questions, to increasing student's understanding of what they have learned. They should assist their students to work effectively in groups and help them develop a sense of feeling of belonging to their society. Mayer (1993) confirms that it is necessary to encourage what

he calls the 'dynamic qualities' of teachers who put forward significant aims and offer instruments with which to reflect on one's own institutional and teaching support.

Fien and Corcoran (1996:231) define the 'reflective practitioner' as:

"one who is able to conceive his/her own teaching in purposeful terms; choose an appropriate action, judge results in relation to context and original purposes."

Huckle (1987:147), a co-ordinator of EE programs in consumerism and of WWF's 'Reaching Out', indicates that young people are particularly susceptible to the culture of consumerism, appealing to wants rather than needs. He emphasises that teachers should encourage young people to be aware of the costs of their consumerism demands, get them to reflect on ordinary everyday situations so that they become aware of their true social significance. Wade (1996) as well as Fien (1993) argue that professional development in EE should be practice-based, inquiry-based, critical, community based, participatory and collaborative. It should involve teachers in an ideological-critique in order to be reflective practitioner, to critique the EE values and assumptions that inform EE policies, resources and practices. Wade suggests the following approaches alternatives for EE professional development:

- Promote decentralised, local EE professional development. This approach encourages critical appraisal and reconstructs existing socio-political and environmental conditions. Critical pedagogy, alternative to text-based 'courses' based on centrally produced curricula, involves:

  - critical analysis of values and socio-political structures
  - action in and reflection on local environmental issues and,
  - intimate involvement between learners and local communities.

- Communication of the interdisciplinary nature of EE to all sectors of the formal educational community. Engage in ongoing discussion, debate, and criticism about our foundations and principles and relationships.

- Building bridges between EE and all sectors of the formal educational community.

(Wade,1996:14-15)

Robottom (1992) concludes that the provision should be made to allow teachers of EE to adopt a form of educational inquiry that encourages a critical analysis of theories, practices and settings. Robottom argues that action research is an appropriate inquiry base for professional development in EE. He identified the guiding principles for professional development in EE being:

- inquiry-based,
- participatory and practice-based,
- critical,
- community-based,
- collaborative.   (ibid:114-115)

As a context for developing strategic models of in-service teacher development, Posch (1996) identifies the following approaches:

- Giving teachers opportunities to reflect critically on their own practices.
- In-service training is most likely effective when it targets the team of people that make up the staff of the whole school.
- Professional development programmes should respond to some challenge, which is currently being faced.
- Involving external support.   (ibid:355)

Posch also recommends that teachers will have to reflect critically on their own practices and to be prepared to actively create conditions in which learning is an activity considered to be useful for the future, and is experienced to be valid here and now.

Based on reports submitted to Unesco seminars, Fien & Corcoran (1996) describe the teacher education project in the Asia Pasific region, 'Learning for a Sustainable Environment'. The aim of the project was to find ways addressing the global crisis of development, environment and sustainability. Appendix (6.3, in Vol. 2) provides the identified principles related to EE and to professional development that were deduced from the analysis of the project.

OECD (1993) summarised the strategies for in-service training and concluded that:

'EE requires high level of competence of teachers because of the necessity of using more flexible approaches, developing group-work and inter-disciplinarity. New skills and creative potential are required of teachers, as well as the ability to evaluate their own work and make changes when needed.
                                                                    (ibid:100)

6.2.3   General criteria for effective EE in Kuwaiti context

As set out above, there is still no one distinct methodology that which exists for the development of EE. Combining arguments from Western educators with the Islamic perspectives of life (set out in Chapter 2) this section identifies some key ideas for

implementation central to environmental learning and designs the framework for an 'adequate' form of professional development in EE in Kuwaiti context. This includes:

1. Recognition that all education is potentially EE.

2. Recognition that all human societies are integral parts of a network of interconnected global systems.

3. Understanding that EE needs to help instil in the learner a kind of ethic of respect for themselves, for others and for the local and global environment.

4. Understanding that professional development needs to adopt critical reflection, to challenge current Western values and to examine possible future alternatives.

5. Realisation that EE programs ought to adopt critical approach to learning, to criticise the material and ideological basis of modern lifestyles, through an Islamic perspective.

6. Technocratic and teacher-centred classroom strategies are inappropriate to the challenge confronting EE.

7. Acknowledgement that EE is interdisciplinary, it needs contributions from different disciplines and allows comparison and co-operation between differing points of view on real life issues, mainly of the community outside.

8. Agreement that the learners are encouraged to be critical, independent thinkers and make connections between local action and global change. They would gain the capacity to reflectively self-monitor their own actions and their consequences in the environment.

In the light of these 'criteria' or guidelines for effective EE, the following section describes the position of Kuwaiti middle school teachers. It demonstrates the overwhelming need of Kuwaiti teachers for professional development experiences in order that they may pursue EE goals in their teaching.

6.3   Analysis of the survey

As noted earlier in Chapter 4, section 4.9, the priorities of this thesis have changed from the time when the questionnaire was designed and implemented. As a consequence, the questionnaire as a whole is no longer a dominant part of this thesis; therefore, this section

will be giving greater emphasis to some areas of the questionnaire than others. A full analysis would require greater space for discussion. Moreover, some parts of the questionnaire are now less relevant and the analysis is therefore selective, according to the main focus of interest of the thesis. The indications arising from the analysis are believed to serve as a 'baseline' for setting up any action for curriculum development in EE in Kuwait.

6.3.1 A portrait of EE in Kuwaiti middle schools

This section provides accounts and responses of a representative sample of teachers on some aspects of the EE curriculum and teaching pedagogy, and turns to critical analysis of their accounts. The data was obtained from the closed questions, but can also be illustrated selectively from the additional open-ended questions. The objective data are tabulated and presented in Vol. 2, Appendix 6.4. The following sub-sections are guided by some aspects of the questionnaire.

Teachers' perception of the goals and policies of EE

The analysis of q1, which is an open-ended question on teacher's perception of the goals of EE, revealed three broad *categories of response*.

1. Informing pupils about environmental matters. Within this category the data derived were arranged into two clusters.

   - Environmental concepts and issues. Examples: .. inform pupils about the characteristics of different environments .. environmental problems, causes and impacts.. significance of the environment to Mankind .. means of preserving environmental resources.

   - Preserving the environment. Examples: .. inform pupils about the significance of caring for the environment to Man .. the role of governments, society and individuals in preserving the environment.

2. Developing the learner's environmental skills. Examples: .. train pupils to care for the tidiness and beauty of the environment and preserve natural resources .. develop their skills to collect information from different resources .. develop their scientific thinking .. their ability to read tables and graph .. enable them to express their views and suggest solutions to environmental problems.

3. Developing the learner's attitudes. Examples: develop in the learner the sense of conserving resources .. appreciation for the beauty of the environment .. the sense of responsibility for keeping the environment tidy .. the sensation of God's might and benefactions .. the belief that He is a part of the environment .. develop the social, moral, physiological and religious aspects that comply with Kuwaiti society.

The overwhelming response stressed *information* about the environment (category 1), the role of science and the significance of the environment for the interest of Man. For example: .. care to conserve and to invest national resources .. care for life void from illnesses .. care for the safety of humans from pollution .. inform the learner about the career world in their environment .. develop in the learner a sense of appreciation to the efforts exerted by scientists.

On the other hand, some teachers chose to define the aims of EE by listing some teaching techniques. Example: .. enhancing pupils' ability to gain interest by simulation, exhibitions, museums and field trips, enforcing communication between pupils, developing the learner's skills to collect information from different resources, developing their skills of innovation.
The absence of concern for other communities, other species, and overall for future generations, is total - and significant.

From the teacher's responses on q3, {the degree to which your school implements EE goals}, presented on Table 1 (see Vol. 2, Appendix 6.4), it seems that the majority view that their schools do indeed to implement EE. The table shows that (32.3%, 65.6%) of the respondents perceive the goals of EE to be accomplished by their schools 'completely' or 'partially'.

Turning to the subjective data collected from question q2 concerning the schools' preparations to fulfil the goals of EE, teachers' responses can be summarised as follows:

- Provision of materials. This category of response was concerned with providing dust bins, waste bags, wall-charts, books and videos.
- Instructions. This category was concerned with instructions to pupils to care for the tidiness and properties of the school and the community, to cut consumption, and encourage pupils to read about environmental issues.

- School activities. Examples: .. planting the school garden .. discussing environmental issues during the activity session .. arranging contests and providing prizes .. call on pupils to write reports on environmental issues .. arranging field trips.

- Arrangements made by the school. Examples: .. reduction of the use of pesticides and chemicals .. routine checking on drinking water filters .. designating particular places for the canteen and eating places.

The critical feature of the responses is the absence of the link between the schools and the community concerning local environmental issues. Practical activities taken within the school environment are also lacking.

Teaching content

In relation to the content of EE (q4), teachers claim to tackle 'global environmental issues' in their classroom with their pupils. Table 2 shows that the majority of the respondents (62%) indicated that they engage their pupils in global environmental issues either 'often' or 'sometimes'. When asked to list the global environmental issues they undertake, the list consisted of the following: Environmental pollution (in general terms) - Preserving natural resources - Military ammunition - Natural disasters. Some chose to list health issues such as aids, genetic engineering, drugs, food chain, and nutrition. Global issues such as ozone layer depletion or global warming were not addressed. As such, tackling the issue of preserving natural habitats and preventing the extinction of rare animals is also very rare.

In relation to local issues (q5) {'I care to tackle local environmental issues in class with my pupils'}, Table 2 shows that the majority of teachers (64.4%) claim that local environmental issues are addressed in their classes. The list of local environmental issues mentioned are summarised as follows:

- Pollution, for example: .. impact of Iraqi aggression to Kuwait's environment .. air pollution caused by factories, by cars, by burning waste .. pollution of the Gulf (mainly from oil industry).. dessertification .. pollution caused by litter.

- Conservation issues, for example: .. economic budget .. care for public utilities .. wise use of water and electricity.

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- Other less prominent or non-environmental examples, such as: .. noise pollution .. traffic issues .. misbehaviour .. smoking .. personal cleanness .. care for cleanness of school and society.

In response to q8, {through my subject area pupils are given opportunity to discuss the impact of industrial development on Kuwait's environment}, Table 3 shows that pupils are given 'very few' chances to discuss the impact of industrial development on Kuwait's environment. Almost one third (30.2%) of the respondents said that they do not discuss the importance of industrial development on Kuwait's environment with their pupils at all; while (25.9%) indicated that they do sometimes.

As an example given for industrial developments that are discussed at class and that have impact on Kuwait's environment, a substantial number of respondents simply stated in broad terms 'industry in Kuwait', 'environmental pollution', or 'pollution of the Gulf from industrial developments' (no specific examples were given). There were also non-industrial examples such as 'pollution from smoking'. In the view of some respondents 'industrial development in Kuwait is limited'. Others, however, gave more specific examples such as: .. air pollution from petrochemicals .. chemical fertilisers.

Some have chosen to stress the economic benefits of industrial development on Kuwait. For example: .. diversifying sources of income .. high rate of employment and its effect on Kuwait's society. Others have chosen to state solutions for industrial issues. For example: .. establishing factories in remote areas .. recycling paper and glass .. using air filters in factories .. sewage treatment .. generating electricity from solar energy. It is interesting that there were some respondents who conflated health issues and environmental issues. .. calling external visitors to present lectures on health matters .. the school instructs its students to care for their personal hygiene and to refrain from smoking .. routine checking on validity dates of food stuff.

It can be concluded therefore, that the impact of industrial developments on Kuwait's environment is not being addressed in middle schools to any great extent. There is an absolute neglect of discussing, the effects of Kuwait's petrochemical industry or desalination and power plants or the sewage system on the environment, and on human health.

In response to q9, {whether the impact of exploiting natural resources on sustainable development in Kuwait is discussed}, Table 4 shows that 32% of the respondents conceded that they do not discuss the effects of exploitation of natural resources on sustainable development in Kuwait with their pupils, while 28.6% claimed that they sometimes do. The open-ended responses to list the natural resources being discussed with pupils included the following: .. water extinction .. oil and natural gas .. electricity ..fishery. Impacts discussed were: .. thirst .. famine .. poverty .. dessertification .. increase of cost of water .. recess of income .. the need to depend on exportation .. reclaiming land for construction in place of agriculture. A minority stated: .. imbalance in the ecosystem .. global warming .. negative effects on future generation.

The overwhelming statements were mainly concerned with the welfare of the society and its economic status. As with the global issues, it seems that teachers mostly tackle local environmental issues in general terms. Whenever they claim to address a local issue either it goes back to the Iraqi invasion of Kuwait, or the issue is not specified overtly; except for one response that specified a controversial local environmental issue caused by sewage works in the 'Ardia' area in Kuwait.

Certainly, there are several serious and controversial environmental incidents that have occurred recurrently in Kuwait. Major local issues such as beaches covered with crude oil, tons of dead fishes piled on shores, agricultural areas dumped with oil gushed from ruptured pipelines .. etc., are totally absent from the teachers' responses. On the other hand, impact of excessive consumption of resources, in general, or the procedures for reducing their consumption are not evident either. For example, while it may seem that oil and water are the main local resources that are discussed with their pupils, the need and the procedures for cutting their consumption appear as marginal issues. The concern for litter accumulation is not overt, yet encouraging pupils to keep their places tidy is emphasised exhorting them to throw litter in the dustbin. In general, the Islamic teachings about 'treading lightly' on the planet are totally absent.

Responses to q11, {'whether teachers encounter problems with teaching when considering environmental issues'} are shown in Table 5. The highest response (56%) shows that teachers claim not to encounter problems while teaching EE. Science teachers claim to face

least difficulties. Teachers' list of the constraints against development of EE, can be summarised as follows:

- No official plans or curriculum for teaching EE
- Curriculum and time constraint.
- Constraints from the officials in the ME
- No co-operation from the ME or outside bodies.
- No emphasis on practical aspects of education
- Lack of teacher awareness, information and training in EE
- Lack of academic institutions for teacher training in EE

In relation to q12, {through my subject discipline pupils are introduced to the concept of sustainable development}, Table 5 also shows that the concept of sustainable development is not tackled in class to a 'satisfactory level', the largest group (39.1%) lies in the 'not at all category'. In several open-ended responses, teachers revealed that their curriculum deals with general information about environmental resources, the concept of environmental exploitation, or the role of the individual and the government in environmental development. Most stated that the concept of 'sustainable development' is not familiar to them and that it does not exist in the curriculum.

The role of the teacher

In relation to q26, {'the role of the teacher is to provide pupils with the correct answers to problems'}, Table 12 shows that the majority, (55.2%, 33.3%) 'agree' and 'strongly agree' that the role of the teacher is to provide correct solutions to problems. This finding could explain the teacher's claim for not encountering problems in teaching EE (q11). It connects with the result deduced from Chapter 5, which shows that the prominent pedagogical process of teaching in Kuwaiti middle schools involves the teacher as dispenser of factual knowledge, with the learner as a recipient.

The great majority agrees on the necessity of teachers' co-operation to fulfil the goals of EE. Table 13, showing the response on q28 {'at present teachers of different disciplines communicate to discuss the development of EE'}, indicates that it is not likely that Kuwaiti

middle school teachers communicate for discussion on environmental issues, where the majority of the responses (46.4%,26.8%) were in the 'not at all' and 'rarely' categories.

In responses to q31 and q32, on the training opportunities given to teachers and their need for support and guidance, Tables 14 and 15 reveal that at present there are scant opportunities for teacher training on EE. As a consequence, the majority (56.7%, 37.4%) of the sample teachers expressed their concern for the provision of continual guidance on educational strategies for teaching EE.

Teachers' recommendations and suggestions

Responses on the request to give their views for the development of EE in schools were summarised and categorised as in the following table:

Table 6.1- Teachers' suggestions for the development of EE

Curriculum content- the need:	• to assign a designed curriculum for EE, • for EE curriculum to start from early stage, • for EE curriculum to be integrated and sequential.
Educational aids- the need to provide:	• diversity of educational aids for EE, such as references, books, journals, and software in EE.
Activities- the need:	• to provide field trips to environmental sights, • to assign enterprises, exhibitions, contests, and plays, • for external visitors, • to incorporate pupils in planting and cleaning the school, • to plan for practical programmes.
Teacher's needs- the need to be:	• qualified for teaching EE, • provided with up to date information and teaching techniques, • given incentives and time, • given freedom to decide on choosing EE topics.
Others-	• teachers and officials to be enlightened on the significance of EE, • pupils to be assessed in EE, • educational goals to be reviewed and updated, • the existing curriculum to be evaluated, • EE to be interdisciplinary, • define a specific body in the ME for EE, • co-operation of specialised bodies in this matter with the school.

This section has provided a brief descriptive account of the questionnaire responses. The next section offers reflections on what these data show.

6.3.2 *Interpretation of the results*

This section seeks to interpret the analysis of the teacher questionnaire survey on EE. It brings out the significance of the data in relation to the concepts, goals and pedagogy of EE argued in Chapter 3 (sections 3.4,3.6,3.7). As such, the questionnaire is analysed according to the Islamic ethics presented in Chapter 2 (section 2.4), and to the criteria for achieving effective EE in Kuwaiti educational context, set out earlier in this chapter, in section 6.2.3.

The analysis shows that teachers are specialised in their subject areas but have received limited preparation, if any, in EE and that they rarely tackle issues other than those provided in their texts. Their concern is to provide pupils with a limited knowledge about the environment. Some responses indicated that there was confusion on the part of teachers concerning health education and EE. Teaching strategies and activities toward developing pupils' skills and attitudes in relation to EE are extremely limited. Therefore, the findings indicate, in general, that Kuwaiti teachers (perhaps unsurprisingly) reflect little of the current debate in EE concepts and teaching methods discussed in Chapter 3, or that of the Islamic environmental ethics presented in Chapter 2. The main feature of the practice of EE in Kuwaiti middle schools is that it stresses the cognitive aspects, didactic teaching and classroom order.

Some teachers do not seem to hold the perception that, alongside the school curricula, school ethos and management can play a major role in fulfilling 'the goals of EE'. The optimistic view of the majority of teachers, claiming that their schools implement EE goals 'satisfactorily', is not surprising in relation to the findings of q1, which reveals their interpretation of the goals of EE is rather limited. It is clearly possible to relate the perceptions of teachers in the sample to the 'technocratic/anthropocentric' perspectives, discussed in Chapter 3, section 3.2.

In reviewing the teachers' list of encountered problems while practising EE (q11), it would be acceptable to understand the teachers' claim for not facing difficulties in their teaching of EE, taking into account that their schools do not have a plan, a policy for action or a set of assigned goals for implementing EE. Moreover, it is argued (see Chapter1, section1.7) that the underlying educational paradigm is didactic and stresses factual knowledge. Therefore, their treatment of environmental issues seems more likely to be marginal. A

striking point is that no hint is given to imply the need to care for the environment for its own sake, for future generations, nor as part of the Islamic tradition.

Students' engagement in higher order thinking processes is confined to applying factual information, to well-structured problems with a single correct solution. This finding connects with the results reached in Chapter 5. From the topics of environmental issues teachers have listed to be tackled with their pupils, it seems that pupils do not receive a satisfactory level of ecological insights. More specifically, they are not introduced to the concept of sustainable development. Although there is some concern for EE, there appears to be widespread neglect of some major local, regional, and global environmental issues.

In summary, the results of the survey analysis have identified the following features of the provision of EE in Kuwaiti middle schools:

- Kuwaiti middle school teachers hold a limited perception of the concept and goals of EE (cf. 6.2.3 criterion 1, 2 and 3); therefore, there is conflict between the aims of EE and the practice of EE.

- EE is supporting the economic status quo and does not take into account challenging concepts such as 'sustainability', nor the environmental aspects of Islamic ethics. It is more connected to technocratic/anthropocentric view points of the environment (cf. 6.2.3 criterion 5 and 6).

- Subject teaching-learning situations are conventional in information content, teacher-student interaction (cf. 6.2.3 criterion 3 and 8), and in their disciplinary structure; no attempt is made to give EE an interdisciplinary character (cf. 6.2.3 criterion 7).

- Little attempt was identified in the survey to foster problem solving or contact with the community outside (cf. 6.2.3 criterion 7). Environmental issues related to Kuwaiti local community are rarely subject of discussion at school.

- Few efforts have been made to supplement the traditional training of teachers with a view to producing teachers with EE competence. (cf: 6.2.3 criterion 4)

The findings put a strong case for the need of developing EE practices in Kuwaiti middle schools to enable youngsters to contribute in shaping their future in ecological sustainable ways. Such results beg the question: what form of curriculum intervention is more appropriate to be infused within the context of the Kuwaiti educational system for the development of EE? This survey, along with the textbook audit of Chapter 5, contribute towards suggesting the need of application 'appropriate' EE content and diverse teaching strategies in the cognitive, affective and behavioural domain of EE.

The suggestions made by Western writers such as Fien (1993), Huckle (1996), Sterling (1996), and Posh (1998), implying that if any educational aspect needs to be developed it resides with the teacher, articulate clearly the position taken of by this thesis. The results of the analysis have implications for training in-service teachers in EE and suggest the need for teachers to better understand the environment as a multidimensional construction of meaning. It was with this realisation that the cross-disciplinary workshop was first mooted. This is described in detail in Chapter 7.

6.4   Conclusion

According to the mainstream environmental practices in Western schools, teacher-centred classrooms are considered out-dated. Environmental issues that deal with complex situations have wide cross-curricular relevance, characterised by an interdisciplinary approach. EE demands new ways of thinking, reflection on action, new teaching methods and approaches and new forms of interaction among students, teachers and the community; thus it would demand external support. Professional development ought to be viewed as a process of change and renewal. In order for teachers to be facilitators in the learning process, they are encouraged to be imaginative and creative. Teachers must be trained in teaching methodologies and approaches that are inquiry-based, issue-based, interdisciplinary, futuristic, and critical.

This chapter has conveyed a portrait of the conceptual needs and readiness of subject range middle school teachers in Kuwait to take on board some EE concepts, goals and methodologies discussed in Chapter 3. A questionnaire survey was the tool used to gain an insight of Kuwaiti middle school teachers' perception and practices of EE. In relation to the criteria set out in section 6.2.3, the results of the analysis have clearly identified certain needs in the development of EE in Kuwaiti middle schools, which support the contentions that were reached in Chapter 5. The educational curriculum needs to take an environmental approach from an Islamic viewpoint. The analysis has also provided pointers to the development of INSET in Kuwait in order for teachers to be aware of their role in educating their students for living in a sustainable society.

This chapter concludes that teachers need support and guidance, and that attention be paid to prepare teachers to take their assumed roles as teaching and learning facilitators. Responding to such need, a workshop was especially developed for implementation in Kuwaiti middle schools. Its purpose was to identify and develop teaching methodologies, which could enable the inclusion of EE within the normal teaching of most of the traditional subject areas.

The following chapter turns its attention to this pivotal aspect of EE development, and provides a detailed content and teaching pedagogy of the proposed in-service teacher workshop in EE.

Chapter 7

Responding to need: Workshop in EE

7.1   Introduction

'The central role of the teacher in the diffusion of any innovation means that
teacher education, at both the pre-service and the in-service level is vital.'

Fien (1993b:12)

In the light of the results of the textbook analysis, and the analysis of the survey
questionnaire (Chapters 5 and 6), the need for development of EE in Kuwaiti middle
schools, and specifically teachers' need for appropriate guidance and support, was
established. Considering the global environmental conferences' recognition of teachers'
role as a key factor in the development of EE, a workshop was specially prepared for
Kuwaiti context. This thesis promotes the notion that all teachers need to understand the
importance of environmental emphasis in their teaching. It is useful to remember that
Unesco (1980:5) resolved that the Tbilisi Declaration recommended that the environmental
dimension permeate all areas of the school curriculum.

This chapter states the aims, and the specific objectives for implementing an in-service
teacher workshop in EE. It also presents the rationale for the decision to target in-service
middle school teachers. Chapter 8 provides evaluative perspectives on the limits and
achievements of the workshop as implemented.

The workshop's intention was to help prepare teachers for the challenges and
responsibilities they could face in teaching EE. It was not meant to be a standard course but
aimed to establish in the participants a base line of awareness, skills and commitment for
present and future generations. The workshop was designed to search for innovative ways
to stimulate EE in Kuwaiti middle schools. Its philosophy asserted that the primary purpose
of EE is to assist in establishing lifestyles that discourage consumerism. It endorsed some
teaching techniques and approaches, to encourage teachers to reflect on their
complementary roles in building environmentally competent citizens. Therefore, the
workshop's aim went beyond the awareness level and sought to foster in participants a
reasoned concern for the quality of the environment. It sought to emphasise the tension

between the natural needs of Man, and wants and desires that could mostly be artificially created by advertisement and social pressures.

7.2   Rationale for the teacher workshop

This section furnishes the rationale for the design, preparation and implementation of the teacher workshop. The decision to focus on teachers' competencies in EE was taken in the light of several prior experiences and considerations:

1. In order to come in terms with the latest developments, in the West, concerning in-service teacher training in the field of EE, the researcher attended, as an observer, a two-phase in-service teacher's training workshop/for secondary school teachers of different subjects/ in EE in Somerset, UK. It was sponsored by WWF-UK. The workshop was based on an action research model of participation. The first phase was held in November 1996 for two days. The second phase was held in February 1997 for one day and consisted of a briefing session of the teachers' piloted projects. The researcher has gained an insight on the concept and goals of EfS and on the use of new approaches of teaching EE.

2. A training course entitled 'Empowering Educators in the Fields of Health, Population and Environmental Education', was held in Kuwait, at Administration of Growth and Development / ME, for two weeks from (September 21st - October 5th 1997). It was sponsored by The Islamic Organization for Education Science and Culture in affiliation with the World Health Organization (see Vol. 2, Appendix 1.4).

As the themes of the Kuwaiti course seemed to centre on the core interest of this thesis, the researcher obtained permission to attend the course. Participants consisted of 20 male and female supervisors and senior secondary teachers of science and social sciences subjects. From the researcher's viewpoint, the course placed more emphases on providing information on EE rather than considering EE's pedagogical considerations or practical forms of implementation. It stressed the cognitive elements at the expense of the affective components of EE. During the sessions, the need for enlightening other

subject specialist teachers on such issues, and the need for the awareness on natural resource consumption, were raised. In general, it was the consensus of all the participants that the course succeeded in raising their 'awareness' on the three issues.

From the researcher's perspective, however, no reference to any practical action taken with teachers in the field of EE was made. Moreover, there was no reference to EfS nor to the future thinking approach for teaching EE (those approaches that the researcher has come across through the Somerset course).

3. The rationale for the workshop was also partly shaped by the teachers' survey that was carried out on April 1997 (see Chapter 4, section 4.4.2). The analysis of the data of the survey was valuable and helpful in preparing the subsequent aspects of this study. It flagged the need of Kuwaiti middle school teachers for the 'full' understanding of the aims of EE, knowledge, skills, values, attitudes and teaching methodologies relevant to EE (see Chapter 6, section 6.3).

The insight from the English workshop, the shortcomings of the Kuwaiti workshop combined with the findings of the teacher survey confirmed the researcher's belief that Kuwaiti teachers need further assistance in the field of EE. The workshop, specifically designed for the Kuwaiti context, can be understood as a response to these considerations.

7.3   Workshop Objectives

The workshop attempted to examine critically modern lifestyles. Its specific objectives were to insure that participants:

- Recognised the need for all educators to be 'environmentally literate'.
- Recognised the importance of collaborative activities for the promotion of sustainable development.
- Gained awareness of major local regional and global environmental issues and their inter-connections.
- Gained awareness of concepts and goals of EE and EfS.
- Identify and analyse critically environmental issues and problems.

- Critique their own lifestyle, be judicious about their consumption habits and be aware of 'responsible actions'.

- Participate in promoting critical thinking and evaluating personal actions in their students.

- Considered the application of a range of teaching-learning EE in their daily school settings.

- Recognise the importance of introducing a 'future perspective' in teaching and appreciate the importance of being able to identify alternative futures, particularly those which are more just and sustainable than today.

The extensive and ambitious nature of these objectives, which were expected to stimulate co-operative and creative work with students, was meant to involve, along with the cognitive and practical aspects, the development of positive attitudes and engagement in activities, which considered the notion of 'sustainability'. Attitudes that the workshop explicitly promoted included:

- willingness to participate for the conservation of the natural environment,

- appreciation of the finite nature of many of the Earth's resources,

- awareness of the responsibility of the individual to maintain his/her personal well being and the well being of the community for future generations.

7.4   An overview of the workshop

Because of the constraint of time on behalf of the teachers leaving their classroom, the workshop was planned to last for eight hours excluding tea breaks and was broken into two days. Each day was designed to run in three sessions with two break intervals. The two-day workshop was launched on (21-23 December 1997) to which 25 Kuwaiti female middle school teachers of one district area were invited, of which 24 participated. It took place at the Administration of Growth and Development, under the aegis of the ME, situated at Al-Jabria 10 km from the Capital. Posters indicating the location of the workshop-room, designed with a background of a burning oil well, were placed by the entrance hall.

Based upon the spread of participants backgrounds and viewpoints, and in order to gain holistic concepts of environmental issues, participants were divided for all the activities into groups of five members, each member of different discipline. Each group represented one of the five schools to encourage possible development of interdisciplinary teamwork. Attendance was entirely voluntary.

Some posters obtained from the Ministry of Electricity and Water were displayed on the lecture-room walls (see Vol. 2, Appendix 7.1a-d). The room was originally arranged with attached tables in a U shape with 26 chairs set on the outside edges of the tables adjacent to the walls. The lecturer's table was facing the audience. Two boards were situated behind the lecturer's table, one with a movable white screen next to the TV and video machines.

The methodologies and resources used were innovative for the Kuwaiti context. Those incorporated included the use of interpretative learning experiences of teaching EE across the curriculum, the adoption of future oriented approach, critical reflection, and the use of external visitor lecturing. The researcher developed her own overhead transparencies (OHTs), offered relevant audio-visual support, referred to local and global environmental examples for illustration, prepared samples of questions in resource sheet material and used pictures as a basis for some group discussions on those themes.

The workshop content was organised around the aims and content of EE, based mainly on the theme of EfS. The emphasis was on the impact of human consumption of natural resources on the environment. The workshop set out to provide an overview of the contemporary Kuwaiti consumerist lifestyle, covering cognitive and affective aspects of EE. It stressed the complex connection between human activities, natural resources and environmental issues. It attempted to model teaching-learning strategies, which could suggest classroom activities for Kuwaiti teachers wishing to infuse EE into a range of subjects. The workshop highlighted ways in which individuals' practices as consumers could be guided by the idea of 'sustainability'.

Therefore, the activities were organised to exemplify approaches to EE, with the emphasis on education for sustainable living. The workshop relied on the participants' *active* participation. At the start of each activity participants were given a brief overview of the

themes of the activity. The activities included small group reports and whole group discussions. They were designed to promote co-operative interaction amongst participants, provide frameworks to help analyse critically the social, environmental and other implications of chosen actions. While the workshop only sampled the main local issues (water, electricity and solid waste), the methodologies were supposed to apply to any form of consumption of product or service.

The workshop aimed to develop in the participants an understanding of the concept of sustainability, and encourage in them a critical understanding of their own personal behaviour, and to empower them to convince others of the possibility to cut down resource consumption. More specifically, the desired outcome was clarification of the 'appropriate' pedagogy and learning outcomes associated with EE. In other words, elicit in participants an incentive for devising teaching/learning activities, either individually or through inter-disciplinary co-operation, that infuse critical thinking of the status quo, as well as placing a futurist dimension to their teaching whenever possible. The ultimate goal was, through teachers, to secure in youngsters the foundation of knowledge and skills combined with a personal commitment for the progress and sustainability of their society.

7.5 Difficulties encountered surrounding the workshop

Although discussions and debates were encouraged during the tasks, in general, participants were not given adequate time. The activities were brought to a close whenever some of the participants had the opportunity for discussion. The main difficulties encountered during the workshop, and obstacles against the propagation of its ideas, can be summarised as follows:

- reluctance by some school boards to release their staff for a demand arising from an un-authorized body,
- the limited days allowed for teachers to leave their schools in order to attend the workshop; as a consequence, the limited time allowed for the workshop activities and discussion,

- inflexibility of school timetable and system for negotiations between colloquies of different subjects, for planning cross-curriculum activities, and the limited time allowed for teachers to practice, the methodologies tried out during the workshop,

- strict administrative rules in following traditional methods by the administrative policy of some schools, henceforth, teachers are not entitled officially to such demands,

- the time of the workshop coincided with end of the first term exams. This weakened the chances for teachers to plan for genuine activities, as they usually have their scheme of work from the beginning of the school year.

Appendix 7.2 in Vol. 2 contains a portrayal of the content and pedagogy of the two-day workshop to be read as a description. For the Kuwaiti context, the content and processes embodied by the workshop make a distinctive and entirely new form of in-service activity for teachers. It represents an original response to the researcher's previous analysis of EE and EE concepts in relation to the Islamic context in which Kuwaiti education professionals work.

7.6   Summary of the workshop

Up until now, research on teacher education in Kuwait has not been a major focus within the field of EE research. This workshop is considered as a first and preliminary step in the field of professional development in EE in Kuwait, which is argued to be required if the goals of EE are to be achieved. It was set up as a direct response to the analysis of the survey questionnaire. It is unique in the sense that in-service teacher training is a matter of official dictate in Kuwait. The workshop evolved some teaching strategies that teachers could use to develop learning activities in EE in schools. All activities were designed to encourage active participation and involvement in the learning process.

The workshop demonstrates the potential to give EE a key role in INSET, yet, the central purpose is not to present a model; it provides possible insights for teacher educators to work on this direction. The central purpose of the workshop was to promote positive environmental behaviour and attitudes as well as to promote awareness. Drawing on the experiences from the workshop, and gaining a rich input from teachers who took part in the

workshop, the focus of the thesis was diverted towards the emphasis on the Islamic ethics. This was not the overt focus at the beginning of the workshop; it has emerged from the workshop.

It cannot be claimed that the workshop has fulfilled all its aims. Rather, analysis of the collected data from evaluation processes of the workshop could identify the success and shortcomings of the workshop. Exploring the results could promote models of better practice. It is feared that the impact of the workshop may fade unless reinforced and amplified through continuous support. The workshop evaluation is presented in the following chapter, after the next section, which offers a mere personal commentary and series of reflections on the workshop.

7.7   Subsequent developments

The head of the teacher training in GDA was impressed, mainly, by the practical aspects of the workshop, and these were later thought to be valuable by the ME. Therefore, a significant outcome of the workshop was the invitation from the ME to run a second workshop, suggesting it to be of one-week duration. This request (see Vol. 2, p:120) re-enforces the theme of this thesis that educational opportunities should provide the learners with consciousness raising and help them to acquire a wide understanding of environmental issues and their relationship to all aspects of human life, hence, to traditional subject areas. With the ministry's consent, the two major drawbacks of the first workshop, the administrative support, and the shortage of time were resolved. However, because of her busy schedule the researcher was able to implement a second workshop of one-day duration only. One was implemented on November 17th /1998 with female teachers, another on December 5th /1998 with male teachers of middle schools, approximately one year after the implementation of the first two-day workshop. The rest of the INSET course was conducted by other educationalists. The one-day workshop was split into two sessions each was scheduled one hour and a half, with a thirty minutes break in between.

By this time, as the researcher's understanding of the Islamic ethics has broadened, she was clear in her own mind that the Islamic dimension should be given priority (see further

discussion in Chapter 9, sections 9.6, 9.7, 9.8). As a result, the approach of the following workshops was to emphasise Islamic wisdom and to bring to the participants' notice ecologically questionable values that do not comply with Islamic values. The teaching techniques used were the same as those used at the first workshop. They were designed to expose different views, interests and practices to help the participants to examine their life-styles and to investigate alternative behaviours to develop a commitment to the environment and therefore act on their Islamic values.

The one-day workshop consisted, mainly, of four activities:

- Discussion of the video clip "Our world our future", similar to the first workshop, (see Vol. 2: p158).
- Analyzing various environmental issues related to solid waste through the display of some household refuse, similar to the first workshop, (see Vol. 2: p160).
- Analyzing various environmental issues displayed on separate pictures each conveying an environmental issue.
- Role-plays dealing with issues of economic, social, health, and environmental implications and involving conflict of values and interests of different parties about the environment.

Apart from the first activity, which addresses the general environmental state of planet Earth, all other activities represented, mainly, local real-life situations. They were designed to stimulate with participants an exploration of the issues interactively and critically. The participants were provided opportunities for multiple perspectives examining the issues from different aspects, while encouraged to consciously analyse them relative to Islamic ethical teachings. They were meant to help them realize that each individual can take a positive or a negative role towards the environment according to his/her choice of action.

The one-day workshops commenced with a couple of verses of Qur'an:

{Then do ye remember Me; I will remember you. Be grateful to Me, and reject not faith}.

(al-Baqara 1:152)

{If ye are grateful, I will add more (favours) onto you.. But if ye show ingratitude truly My punishment is tenable indeed}. (Ibrahim 14:7)

These verses were interpreted from an environmental perspective followed by a brief lecture on Islamic environmental ethics. Gratitude to God was explained to imply dealing with Earth's resources as sacred gifts from God. None of the participants expressed their doubt concerning the assertion that those exemplar verses have environmental implications. In fact, they seemed to be spiritually moved, and seemed to have a shared vision that Islam bears intrinsic environmental ethics, and that Muslims have obligations with respect to the whole of God's creation.

Before dealing with any environmental issue, the researcher sought the participants' opinion on whether they preferred to have a somewhat detailed lecture on the concerned issue or to be given the spare time for reflection and discussion on the designed practical activities. In all cases they advocated the second choice. As a consequence, the researcher's role was mainly instructional, and her lectures were very concise. Therefore, there was no need for extensive use of transparencies, or assistance, as was the case in the first workshop. The one-day workshops were more discursive; the researcher felt relaxed and the participants were provided 'adequate' time to be engaged in a natural and friendly atmosphere.

The only incident where any disagreement was raised concerned the researcher's criticism of the middle school curriculum. A group of male teachers rejected the idea that their curriculum is deficient in the provision of EE, and claimed that they do teach EE in their schools. To explain her point of view, the researcher referred to a practical activity in the second year science textbook, as part of an activity to examine a plant according to given instructions, that asks the student the following question: 'pull out a plant from the garden; do you feel resistance? Why?' (see Chapter 5, p:154). The researcher brought into their attention that such instruction promotes aggressive attitude towards nature. She compared such attitude to that which is found in a Western textbook dealing with the same topic. The student is asked to gently remove the plant from the sand, and finally the student is asked to take the plant back to its original place delicately, after finishing the experiment. During the solid waste activity one male participant disclosed that all members of his family are

annoyed from his grandmother's habit of treasuring disposable materials for future use. He said humorously: 'now I know that my grandmother could be classified as an environmentalist'. Towards the end of the workshop it seemed that they all have comprehended the theme of the workshop and have reacted positively towards the raised issues.

These one-day workshops of both the female and the male teachers, separately, were scheduled at the last day of the two-week course. The majority of the participants were involved in the discussions. They kept comparing the workshop events with those of the others. During and at the end of the workshop there were favourable comments expressing their satisfaction with the workshop content, and the use of diverse and new methods of teaching that they experienced. Some also wished that the workshop would be extended. One of the female teachers, a member of 'Safia school' - who had obviously heard about the previous year workshop thought that the workshop has been originally designed by the ME - was anxious to know the reason why the ME does not run the workshop on EE more than once a year.

It is noteworthy to mention that a group of male teachers (mostly those who objected to the idea of criticising their curriculum) engaged the researcher in an interesting discussion at the end of the workshop for around thirty minutes. The main topic concerned the neglect of EE in the school curriculum and the policy behind it.

Because of the time constraint the issues dealt with were mainly local, examining hypothetical and real-life dilemmas. As for the same reason the one-day workshops were not evaluated. For future work, it would be of interest to take account of the global dimensions of the environmental issues. A summative evaluation process of each similar event could help broaden the understanding of the particularity of each context in order to overcome the limitations and shortcomings of similar future events.

Chapter Eight

Evaluation of the workshop and follow up activities

8.1   Introduction

Chapter 7 presented a conceptual outline of the workshop undertaken with Kuwaiti Middle School teachers, with the full details being supplied in Vol. 2, Appendix 7.2. The focus of the workshop was to highlight the importance of the place of EE and EfS in the school curriculum and within the whole school ethos. An evaluation process to judge the impact of the workshop was undertaken in several steps. This chapter outlines in broad terms the outcome of that evaluation. It presents the strategies adopted for gathering the data, presents the data obtained and provides an analysis of the data. It begins by reporting on the researcher's preliminary comments on the workshop. Secondly, it notes on record an external observer's independent report written soon after the workshop took place. Thirdly, it reports on the participant teachers' responses on the workshop: questionnaires were used to elicit teachers' views of different aspects of the workshop. Finally, it provides analysis of interviews with some of the workshop participants, members of one targeted school, to identify changes in the teachers' understanding and motivation to teach EE following the workshop experience, after a considerable time lapse.

The results indicated that the workshop event (as well as the researcher's follow up contact with one school for the purpose of providing additional support and guidance), helped develop greater coherence in teachers' conceptions of the nature and teaching methods of EE. The evidence suggests that it helped facilitate the development of 'positive' personal attitudes and behaviour among both teachers and their students. Analysis of the evaluation data informs and may possibly improve the processes of INSET practice in Kuwait and a number of suggestions regarding improvements in teaching/learning approaches and techniques, for classroom and INSET events, are made in the light of the evaluation outcomes in Chapter 9.

8.2   Preliminary comments on the workshop in practice

A common characteristic of the participants was that none of them had previously attended any course in EE. The workshop demonstrated how INSET can facilitate EE for a combination of a wide variety of subject teachers. It suggested various approaches and

methods which teachers can try out with their students. Initiating whole school initiatives was among the workshop targets: the emphasis was on teachers' co-ordination and formulation of whole school activities, those which may prompt the learner to examine environmental issues from different aspects and points of view. These of course, are ambitious aims for a single workshop.

From the researcher's personal reflection, and listening to the participants' positive comments, it seemed that the overall experience was productive. The activities seemed to stimulate the participants into reflection about some issues of environmental values and consumption of some resources, and it was clear that the majority viewed the workshop to be challenging, where a significant level of co-operation and discussion between different subject teachers, across the groups, was noted. Some even expressed their willingness to articulate some of the workshop ideas in their schools. Others, however, complained that they had little opportunities to practice lesson planning in EE, and made it clear that they have their own (subject) burdens to fulfil. As a result, some asked to have detailed, informative lessons related to their specific subject discipline.

Although discussions and debates were encouraged during the tasks, in general participants were not given adequate time for full reflection; the activities were brought to a close in a short time owing to the need to keep up with the programme. From the participants' reactions and the researcher's own impression, it was felt that they needed more information and time for substantial input and feedback. Yet, from the impression gained, most seemed interested, and the quality of the workshop issues and activities was more than satisfactory. This was evident from the reaction of a number of participants expressing their concern for immediate action in their schools. Some commented that *'every one needs to be informed of such issues'*, and asked the researcher to lecture at their schools. Others were already planning for EE activities (while engaged in the workshop activities) to be implemented with their students. 'Safia School' members asked for copies of several transparencies. Before the commencement of the first session of the second day of the workshop, this team of teachers granted the researcher a framed and hand painted sketch showing the interlock between the environment and education. Members of another school 'Laila Al-Qurashia' handed the researcher a 'thank you' card signed by the school principal (see Vol. 2, Appendix 8.1).

The overwhelming impression of the participants' attitude towards the workshop was that each participant was concerned with matters of practical significance to her subject area, and later it seemed that they evaluated their learning accordingly. The most effective aspect of the exercise was that the participants were involved in the learning experiences. Important insight was gained from the incidental comments during the activities and the informal chatting with the participants during the break hours. Perhaps the most significant outcome of the workshop was the observation that RE teachers were the most active and responsive members in each of the five groups. This may have been because environmental values were seen to have a religious connotation. This led the researcher to review the literature on Islam and investigate its relevance to the Western ecocentric ideologies. This was the key moment, the critical incident, that led to the change of focus of the thesis, as noted in Chapter 4, section 4.9, and explained in Chapter 9, section 9.6.

8.3   External observer's evaluation of the workshop

As a sign of his interest in the workshop content and pedagogy, the head of the teacher-training department at the Growth and Development Administration (GDA) asked to attend the workshop sessions. He played the role of an assistant and assessor. Therefore, he provided the researcher with his personal evaluation report on the workshop (see Vol. 2, Appendix 4.9).

He expressed his interest in the issues raised, the diverse teaching techniques applied, and the discussions that took place. In his words: 'the discussions created an enjoyable atmosphere of free expression of opinions'. A major significance of his assessment was that it emphasized the need for INSET workshops of this nature for Kuwaiti middle school teachers. An acknowledgement of such a demand by an official in the INSET sector, certainly, gives credibility to the workshop. The main defect, in his view, was mainly the time constraint allowed for detailed discussions. This limitation which was acknowledged by the researcher as well (see section 8.2 above).

8.4   Participants' immediate evaluation of the workshop

The preliminary data collection tool was a teacher's evaluation questionnaire (see Vol. 2, Appendix 4.7 for the Arabic version, and Appendix 4.8 for the English version). It was used to document the participants' views on the workshop for its future development. It

assesses the various aspects of the workshop, such as the suitability and effectiveness of its content, the activities that took place, and its strategies. The evaluation questionnaire was designed to identify aspects which teachers felt to be most influential in shaping their attitude and possibly influencing their future actions (cf: Chapter 4, section 4.6.1). It was administered to all the 24 teachers of the five Middle schools in the Capital area who agreed to take part in the workshop. Participants were asked to rate the relative importance of particular components of the workshop from their perspectives. The questions were analyzed qualitatively and quantitatively. Thus, the objectives of the evaluation questionnaire can be stated as follows:

- To elicit teachers' views of the effectiveness of the workshop content and the different teaching methodologies used.
- To identify possible immediate changes in teachers' conceptions of EE, possible commitment to draw links between their subjects and EE, deliver some of the teaching and learning experiences with their pupils, as well as the development of personal environmental attitudes and behaviour.
- To register their suggestions for future development of this workshop.

As explained earlier in relation to the main survey questionnaire (cf: Chapter 4, section 4.9, and Chapter 6, section 6.3), some parts of the evaluation questionnaire are now of less interest to the main focus of the thesis. The analysis of the evaluation questionnaire is therefore selective, and its function is to provide a general insight of the impact of the workshop on the participants. The sequence of the analysis of participants' responses is guided by the main components of the questionnaire (Vol. 2, Appendix 8.2 shows the tabulated data).

The objectives
In relation to q2 {The objectives set out on the workshop are linked to the behavioural objectives of my subject area}, Table 1 (see Vol. 2, Appendix 8.2) shows that only 3 of the respondents claimed that the objectives were not linked to their subject areas. For example, a social studies teacher stated that: … Social studies curriculum does not comply with the workshop objectives, but the overwhelming majority of participants could, perhaps surprisingly, see links between the workshop objectives and their subject domains.

Table 1 also shows that all but 2 of the responses to q3, {It is possible to achieve the objectives set out on the workshop with my pupils}, believed that it is possible to achieve the objectives with their pupils. A more pessimistic position was attributed to the following reasons, for example: ... I am obliged to adhere to the prescribed curriculum ... Only if the curriculum is being changed, I might be able to achieve those goals.

Another negative reaction concerned the presentation of the workshop objectives; it was expressed by one participant stating that: ...There was a repetition of the workshop objectives, which was boring. It could be that revisiting the workshop objectives was not of interest to some of the participants. From the point of view of the researcher, it was important to remind the participants of the objectives already accomplished before commencing the second part, but it is possible that the objectives were over laboured for colleagues who seemed to claim overwhelmingly to be familiar with the field.

The workshop content

In relation to q6, {The workshop content was related to the content of my subject area}, Table 2 shows that about 2/3 of the participants took the view that, to some degree, the content of the workshop was related to their subject areas. All participants stressed that the content was relevant to theirs' and to the society's needs (through their responses to q7&q8), though one of the IT teachers stated of the workshop that: ... The content should have been more relevant to participants' needs.

To different degrees, all participants stated that the workshop stimulated their interest in EE (responses to q11). The major criticism was stated by a third of the respondents, indicated that: ... The workshop content was very condensed, which prevented thorough discussions. This confirms the fact that lack of time was the most frustrating element throughout the workshop. No doubt the issues were complex, yet the discussion of their root causes, the implications, and the proposed solutions were rushed.

Workshop Teaching Techniques

Table 3 shows that in response to q18, {Teaching techniques encouraged teachers participation}, all participants agreed that teaching techniques required their participation. In response to q19, a significant number, about half, agreed that the teaching techniques engaged them in 'critical thinking'. Responses to q21 show that two-fifths of the participants believed that it was possible to follow the workshop teaching techniques with

their students, to some extent. Again, the majority's only criticism of the teaching techniques used was lack of time for discussion and reflection.

General Opinions

In response to q30, {In general teachers need such workshops to broaden their understanding of EE}, and to q31 {In general teachers need such workshops to get a grip on some teaching methods in EE}, all agreed that teachers need such INSET to broaden their understanding and to get to grips with some teaching techniques in EE. This request corresponds to the external observer's comments, which generally support the results obtained from the analysis of teachers' questionnaire survey (Chapter 6, section 6.3.3). This evaluation therefore confirms the finding to have emerged from this research that there is a need for – and a demand from teachers – for in-service activity and curriculum content and pedagogy.

In response to the open-ended question {What expectations you had of this workshop that were not fulfilled?}, those who gave negative comments were mainly science and IT teachers. Representative examples of their responses were:

I expected some models of teaching lessons around the environment related to a certain subject domain.
We need practical teaching lessons not to be taught concepts and aims that we have to memorize.
We already know many of the workshop information such as: the need to refrain from buying excessively packed goods in order to help reduce polluting the environment; this is a known information.
We would rather have other information especially for science teachers so I could make use of in my life and inform my students.
I wish we had some realistic examples that touch our lives so I could inform others, such as the examples given by the visitor concerning the excess plant watering and its impact in causing water penetration to the house basements.
I wish we had more realistic solutions to local environmental problems, since we have no recycling factories in Kuwait.

These responses show that there was a substantial degree of resistance among these teachers to adopting 'new pedagogy' and to take on board some ethical aspects of education. They show that these Kuwaiti middle school teachers had moderate knowledge about the aims of EE, but of more specific interest to this thesis was that they evidently did not seem to recognize their potential role, as specific subject teachers, to make connections as a possible vehicle for EE.

Nevertheless, the use of a range of learning experiences challenging the participants to re-evaluate their environmental conceptions, attitudes and behaviour seemed to have been successful. It seems that it has stimulated critical reflection on personal behaviour or

lifestyle. This was expressed as in the following responses to the open-ended question {What was the impact of the workshop on you personally?} as follows:

It stimulated in me the responsibility of preserving the environment and natural resources.
Ever since the workshop I have tried to advise every one to cut down the use of water and electricity and preserve the environment.
Ever since the workshop I am trying to advise my students on preservation of natural resources and reduction of pollution.
Personally I started at home reducing wastage of water & electricity, paper and others.
I am trying to change my habit of excessive use of water and electricity.
I am trying to change my habit of consumption of all sort of resources, I try to reuse or make use of throwaway things, and I am trying to convince my own children and my students to do so.
Every time I come across an environmental matter I remember the workshop.
I became more aware of the needs of the environment.
I learned the strategies of teaching EE.

Considering the short span of the workshop experiences such responses reflect a short-term relative success in achieving the workshop objectives.

Regarding the response to the question {Which sessions did you find personally most useful and why?}, written responses indicated that mainly topics on pollution and conservation of resources were proved to be useful. This time, the link with Islam was highlighted by some participants (even though this was not the main purpose of the workshop). The following are some representative responses:

All topics can be related to Islamic education since all are God's commands.
Education for sustainable development, it gives incentive to students to participate in making their future.

On a different note, one interesting response stated:

An important teaching technique experienced in the workshop was that we should allow students to find solutions for themselves; we need to encourage them to think for themselves of the causes, problems and solutions of the issue.

This comment reveals a significant step on the part of the respondent concerned, albeit possibly rather isolated. Linking this sentiment with desire of others to relate EE to Islamic education provided the researcher undertaking this analysis with an interesting possibility for future development, juxtaposing these 'blocks' of thought against each other in order to generate new ways forward for introducing EE to the Kuwaiti middle school curriculum.

A major assumption of this thesis is that education binds together the past and present with the future, in a dynamic relationship (see Chapter 3, section 3.6). On this basis, slide pictures of old means of distribution of water and electricity in Kuwait were displayed

during the workshop. From the expressions and comments of most of the participants over this activity, the researcher observed a significant interest and enjoyment on behalf of the teachers. Only one negative response to the question {Which sessions did you find least useful and why?}, reported the following: ... As we are all Kuwaitis we did not need the display of the history of transportation and the distribution of drinking water and electricity.

Responses to the question {Do you intend to take any action/s with your pupils individually or collectively as a result of this workshop?}, were encouraging. Examples were:

Making contest between classes on the issue of consuming water & electricity and for the school tidiness.
Researches on environmental issues (pollution caused by solid waste).
Group discussions on environmental issues.
Making use of throwaway materials.
Agricultural activities.
Producing songs and role-plays.
Planning for field trips.
Displaying samples from the environment and discussing the problem and its solutions.
Asking students to write an essay about water resource and its importance for human life with reference to some Qur'anic verses.
Forming environmental groups such as friends of electricity- there task is to inspect the electricity points, friends of water- there task is to inspect the water leakage, friends of tidiness- their task is to inspect the tidiness of classes and schools.

Such promising plans could be considered to reflect at least the short-term profound impact of the workshop. The level of their determination for action in the larger term could be established only by the activities implemented in a later stage by the targeted school, one of the five schools, as will be shown in the following section.

In relation to any obstacles to the implementation of any proposed EE activity with their pupils, the following points were stated by the teachers:

The requirement by the ME to follow the prescribed curriculum.
The disagreement of authorities, parents and the supervisors.
The curriculum is not relevant to EE.
Shortage of technical educational aids and films.
No encouragement from the school management for outside trips or inviting visitors.
Shortage of time for extra preparation.
No communications with outside parties.

It could be argued that these statements summarize reality. On the one hand, traditional subjects imposed by authority cannot be eliminated, but on the other hand, it is not hard for a Muslim to come to the conclusion that Islamic environmental wisdom relates to all educational areas and subjects. Therefore, educators have their share of responsibility for

the promotion of environmental ethos and choices of lifestyles that provide benefits for future wellbeing. The acquisition of 'responsible' environmental behaviour is argued in this thesis to be one major goal of education, and Islamic principles may help the curriculum to 'carry' such a goal.

Suggestions for further development were given by few teachers as follows:

It would have been of benefit if it was officially endorsed.
The time of the workshop has coincided with the practical examination period; it could be more convenient if it was at the beginning of the term.

More radical answers were:

The school curriculum should be cut down.
The curriculum should be changed.

It seems that some teachers were more concerned with environmental *content* than educational context. However, in Islamic thinking, which describes the broad educational *context* in Kuwait, knowledge includes faith and belief; and contemplation of God's creation is regarded as a form of worship. It is the obligation of every Muslim to adopt and propagate the Islamic ethics and to criticize secular values from an Islamic perspective. Further more, EE is seen to be more an approach to the curriculum than additional content. Thus, to ask subject teachers to pay serious attention to the educational context may hopefully suggest how to 'deliver' environmental contents.

Criticisms of the workshop were as follows:

Scarce participation of some participants.
The accumulation of content in a short period causes weariness and prevents full understanding.
My suggestion is to run the workshop for 2 hours per day for one month instead of having us seated for a long time, which does not comply with the teachers' nature being used to flexibility.
The workshop to be run more than two days.
We needed longer time to assimilate the issues.
We needed more debates and discussion time.

Such criticism parallels, in essential respects, that of the external examiner. These demands support the notion that teachers need to be provided with opportunities to realize the relevance of the educational theories to everyday life, in particular, to articulate environmental approaches and pedagogy to their teachings.

In summary, a major deduction from the results of the quantitative and qualitative analysis of the data collected is that they are consistent in indicating that the workshop aided teachers to gain a greater insight on EE concepts and teaching methods. It also seems that the workshop affected a shift in participants' thinking and facilitated changes in their personal and professional attitudes and behaviour, at least in the short term. It created opportunities for teachers to reflect critically on their own practice and become clearer about their own environmental and educational values, as a way of making their students reflect on their own responsibility rather than simply to propose measures that should be taken by the authorities. Such achievements have been gained on a personal level in a context of limited resources and experiences. On the other hand, in order to persuade the reluctant schools to take a more ecocentric position in practical terms, or, at their best, to persuade them to adopt an Islamic stand point, it would probably require official recognition of EE as an important component of the whole curriculum, as well as of INSET activities. Though the evaluation shows teachers to be positive and responsive there is also evidence that schools would also require partnership and support of an expert, and to be financially sponsored by the educational board.

8.5   Post workshop evaluation

The task of gathering the feedback of the evaluation questionnaire required several visits to the five participant schools. This provided the researcher with an opportunity to discuss with the schools' management the possibility of some sort of joint co-operation with the researcher to help propagate the concepts and pedagogy of EE with their students (cf: Chapter 4, section 4.7). The researcher's main intention was to target one co-operative school in order to furnish additional information and guidance for future development of EE in Kuwaiti Middle Schools, through experiencing action research work. Safia School offered the best prospect for progress in these respects.

This section reports on the outcomes and the significant EE activities carried out by the targeted school 'Safia School' teachers, collectively or individually, with their students during the school year, following the workshop. It describes and comments on the interviews undertaken with the four workshop participants, all members of the targeted school.

To enable the school to development, the researcher kept in touch with the school to

motivate its teachers to plan for a tangible framework. This needed consecutive informal visits to be paid to the school. The meetings took place from January to April 1998, and were conducted with two to three teachers at a time, according to their availability, in the principal's office. In all there were ten meetings of 30-60 minutes duration. The teachers seemed to be keen to articulate some of the workshop ideas with their pupils. They were encouraged to use their own creativity, which resulted in the production of some interesting school activities. They reported on trials of their earlier promising suggestions. Those follow up activities, indicating the longer-term effect of the workshop, were recorded in several ways: photos taken by the teachers of the school activities, an audio-tape was made of a morning activity on water and electricity (recorded by the researcher), and teachers' notes on their proposed plans (see Vol. 2, Appendix 4.1). These materials themselves provided a form of evidence to inform this evaluation.

After over four months liaison between the targeted school 'Safia Middle School' and the researcher, a semi-structured interview (see Vol. 2, Appendix 4.10) was conducted with each of the four workshop participants at the end of the school year, on April 13th 1998. The objective of the interviews was to establish a baseline regarding the longer-term impact of the workshop on teachers' conceptions, attitudes and commitment to EE. They were conducted in the deputy's office. This was to be the last contact between the researcher and the teachers. Teachers were called to take part in the interviews as their time allowed, as one or two of the teachers needed to rush up to their classes and come back at a later time. During the final half-hour of the researcher's visit all the four teachers shared their views and comments. The researcher kept notes of each interview and the final meeting. The data interviews were built on earlier observations during the researcher's visits to the school.

Objectives of the interviews

The objectives of the interviews were to examine the longer-term impact of the workshop and look for the means of its development. The interviews sought to:

- Identify topics, and activities related to EE that the school had implemented before its participation at the workshop.
- Identify interdisciplinary co-operative school activities achieved following the teachers' participation in the workshop.
- Identify EE activities that the school wished to implement in the near future.

- Identify difficulties faced during implementation.
- Elicit teachers' views and suggestions for the development of the workshop in the future.

8.5.1   Data gathered from the interviews

The interview data showed that the participant teachers, individually and collectively, incorporated some ideas with their students, and that there was a potential for increased collaboration between subject area teachers for implementation of EE activities. It was clear that a significant shift occurred in participants' thinking about the nature of EE and commitment to their originally held environmental viewpoint as a result of attending the workshop. Respondents moved away from the notion that EE is confined to a specific subject area, or that it was concerned only with cognitive aspects of learning.

Teachers pointed out that the group of different subject teachers who participated in the workshop met around 3 times to arrange for an EE plan and decide on the priorities within school. The criteria for priority of implementation were set according to the most persistent issue, and according to the teachers' spare time. Other short meetings were conducted between the individual teachers as their timetables allowed. They indicated that they were keen to involve students in practical activities that had the potential to affect their attitudes and actions towards the environment. The teachers confirmed that some of them had already individually incorporated some of the workshop information and ideas in their classes, by integrating certain topics with environmental issues. Along with the workshop handout that was supplied to the participants, the teachers claimed that they made use of some environmental articles in some magazines.

The following are some extracts of their statements, indicative in some respects of the struggle experienced by these teachers:

We distributed the work among us, we decided to work with one class, from year one, in order to implant the seeds of EE throughout the school for the following years. Pupils were given 5 sessions in EE.
The interesting point was that the pupils themselves were enthusiastic, and have contributed with their ideas in producing the materials.
With the help of the school administrative staff we made contacts for arranging visits to the Ministry of Water and Electricity, a dairy products farm, Authority for Environmental Protection. None of the visits were actually conducted because of the refusal of the other parties to receive the pupils, and as time passed the school was approaching the final exam.

The teachers formulated their own aims and began the process of implementing some actions that made sense to them and for which they held ownership. The data collected from the interviews identified some significant work could be related to EE:

Security measures

Following the latest Iraqi threats on December 1997 to Kuwait, the school management, with the assistance of a visiting expert from the Health Ministry, prepared a programme on 'Security measures'. Using gas masks and special uniforms, the precautions to be taken against any possible chemical air attack were rehearsed by the students on February 1998, after the mid school year holiday.

School workshop

The school organized workshops (five sessions) during activity lessons. They dealt with several environmental issues using different teaching techniques. Students were informed about the aims and intentions of the activities and about some environmental problems facing Kuwait. They were given background information on recycling and the need to conserve environmental resources. The emphasis was to involve the students in resource conservation and making use of some refuse materials - such as cardboard used as frames for school posters, decorating cans used as dust bins, painting plastic containers used as flower vases or pen holders.

'Green action' groups

The school established different 'Green action' teams. Students were divided into 3 groups, one group was called friends of electricity, the other friends of water and the third, the litter cleaning group. Their task was to encourage the others to conserve water and electricity and care for reducing litter during school hours and at home.

Programme on Conservation

Also during the school EE workshops, the teachers claimed that the students rehearsed for a ten-minute radio-programme. The role-play encouraged environmental protection; its theme was a call for conserving water and electricity and keeping the environment tidy (see Vol. 2, Appendix 4.12). A range of resources was used: posters on water and electricity, an old Kuwaiti device used for water transport, and wastebaskets. Students were dressed each according to her role. Concerning this event, the teachers expressed their ambition to prepare this for programme using a live donkey to go round the school

yard among the pupils in order to resemble the real historical case, though for logistical reasons this was not witnessed by the researcher.

Advice balloons

The English teacher, a workshop participant, produced a morning show using large coloured balloons. Advice and slogans were written in English, one per balloon. A game was devised during which students read the advice and lets go the corresponding balloon. The slogans included:

obey your teacher ... keep school tidy ... conserve water ... conserve electricity.

Participating in the Ministry's Exhibition

Despite the fact that the workshop had not been officially recognized by the Ministry's INSET director, the researcher was asked by the head of the training department to participate in the Ministry's exhibition on educational materials produced by trainees as an impact of their INSET attendance. The exhibition was held on 30th of May 1998, for two weeks. It was the first of its kind to be held in Kuwait. A copy of the workshop handout, along with a file of Safia School's activities were displayed at the exhibition (see Vol. 2, Appendix 8.3a, 8.3b).

· Future activities intended

As expressed by the teachers, the following are extracts of their ambitions and future intentions:

As an extension to this school year's effort that has focussed only on the first year group, the intention is to work out the activities with different year groups.
- To perform successive role-plays on EE during the school year.
- To issue a school magazine on EE, edited by the students.
- To arrange an exhibition of the students' products of refused materials.
- To implement EE programmes exceeding the school boundaries to be presented to other schools.

It is worth mentioning that the activities were accomplished within a strictly defined timetable. Clearly, there would be a need to build on the teachers' motivations and help them develop their ideas.

8.5.2 Summary analysis of the interview data

From the responses to the interviews, it appeared that the workshop found an echo within the targeted sample. The evaluation interviews cited the teachers' satisfaction with the workshop, and showed tangible positive effects on them. This claim is supported by Safia School's activities and their creative ambitions for future development. They appreciated the researcher's support and hoped for further support and training in the future.

Those brief examples of the activities carried out by the teachers of the targeted school with their students illustrate a level of obligation to environmental morality and responsibility that is unusual in Kuwaiti schools. The implementation in practice by the school may seem limited by some standards, but this can partly be explained by the voluntary nature of the work since EE is not recognized officially.

A number of factors provided the motivation of the school's significant actions. A major factor is to realize that the incentive to introduce EE strategies was crucially dependent on the underpinning ethos and values adopted by the school management. This was evident from the readiness of 'Safia' School's management to 'venture' in co-operating with an external body, on a private and friendly basis, without abiding to the rules of getting ME prior consent. Seeking consent might have led to the delay or refusal by the ME. As such it could be argued that the quality and skills of the staff and the climate of co-operative relationship are also crucial to underpin progress. The partnership of an expert could also be an effective factor, in order that teachers might be helped to find their way through existing subjects and make connections to environmental values and concepts. The success of the long-term effect of the workshop was evident from the substantial efforts presented by the targeted school in partnership with the researcher.

8.6   Conclusion

The workshop represented a framework for subsequent application to the training of teachers in EE. The assembled data of both the evaluation questionnaire and the follow up interviews provide material for reflection on some of the lessons learned. The analysis could help inform and improve the effectiveness and process of INSET practice.

A significant feature arising from the analysis of the objective questions in the workshop evaluation questionnaire was that mainly positive responses were noted; these results are

supported by comments on the open ended questions. The analysis also identified possible deficiencies in the workshop arrangements and provided suggestions for overcoming those deficiencies. From the point of view of a minority, it might be that the display of the workshop objectives was over elaborate. This might have caused weariness and saturation for some. For future application, it may well be more convenient to be more concise in reviewing the objectives.

It also seemed that some participants needed to be enlightened about the educational effect for the use of historical approach on the issues of water and electricity in Kuwait. But the position taken in the workshop was an emphasis on the solidarity between past, present and future generations, and this theme may need further highlighting. The more explicit link with Islam has a significant role to play in this regard.

The results also indicate that it is possible to move teachers toward a deeper understanding of EE. A good place to start was thought to be the identification of a key environmental issue in the lives of the learners. Therefore, the main local issues chosen to deal with were water and electricity on which the participants are likely to take a personal stand. This was clearly appreciated by all workshop participants. But there were even more significant contextual issues, from which we can draw some important conclusions.

Some participants might have felt alienated from their own subject specialization and expected a model defining the content and structure of a typical classroom event in EE with their pupils. This indicates that some teachers may be conditioned to expect a pre-determined designed course of action and an exact model of teaching lesson. It is as if they are accustomed to rely on fixed and certain answers to problems. In this connection, the same sense was shared with WWF (1995:p15) in its remark that:

'Often through no fault of their own, many schools and teachers are dominated ..... by tradition and external authority and circumstances, rather than by democratic reflection and action on the real needs of their community and the issues it faces. Reflective rather than routine action on the part of students and teachers require courses of professional development which foster rationality, openness, keen observation and a preparedness to question what is currently taken as given'.

Moreover, it seemed that, as the participants were confronted with the possibility of implementing a scheme of work that would deal with environmental issues, not all were ready to endorse this responsibility. A significant defect of the workshop was that the overall time provided was not enough to allow clarification in order to provide effective treatment of the issues. If time had allowed the activities would have drawn out all aspects

related to each issue, and perhaps engage teachers in some kind of curriculum design activities.

Nevertheless, the short-term reaction of the participants, in general, was quite favourable. It was clear from several responses that the workshop achieved a substantial gain. For example, most of the participants confirmed that their participation in the workshop has triggered their act of reflecting on their daily habits and provoked some changes in their usage of resources. The quality and details of their replies show that they have taken strong personal concern in relation to the workshop activities. It seems that the workshop succeeded in getting them at least to reflect on the possibility of modifying their personal behaviour and in providing the basis for them to consider convincing others in favour of reduction of waste and cutting down resource consumption. They perhaps indicated that Kuwaiti middle schools have the potential of contributing to the growth of the ethical consciousness of their students.

The feedback of the interviews also proved to be rewarding. The narration of the targeted school's accomplishments was extracted from the teachers' comments to the interview questions. It was authenticated by the tangible activities made by the School, which proved to be in response to the workshop recommendations. No matter how small-scale their efforts may be, it seems that the workshop filled in a gap, which persistently exists. This provides some cause of optimism about future developments.

In general, analysis of the evaluation processes confirmed that EE is not a part of the educational agenda in Kuwait. An indication of the neglect of EE can also be ascertained from the results of Chapters 5 and 6. Teachers are under great pressure to complete the formal subject-based school curriculum. Therefore, they feel constrained when it comes to integrating an 'extra' curricular burden. Therefore, the main reasons for the absence of EE provision in Kuwaiti Middle Schools could be attributed to the following reasons:

- lack of the teachers' EE background, their belief that EE is unrelated to the teachers' disciplines,
- rigidity of the educational curriculum,
- the reluctance of the authorities to impose EE officially,
- no communication with outside parties.

This information furnishes a basis for revision and improvement of EE. It seems there is much to be done to foster the development of EE in Kuwaiti Middle Schools, despite some optimistic judgements drawn from the workshop evaluation.

The main practical difficulties encountered by the researcher were identified in Chapter 7, section 7.5. Initially, during the administration of the survey questionnaire, the researcher set a task to inform the school administrations about the objectives of the intended workshop and its educational and environmental implications to the students in particular, and to the Kuwaiti environment in general. Some of the schools applied to were hesitant in further co-operation with the researcher. Another major obstacle was the workshop timing. As the mid-year vacation was approaching, together with the holy month (Ramadan), the researcher had limited opportunities to persuade the participant teachers of 'Safia School' to take immediate action. Political instability in the form of the Iraqi threat to Kuwait in December 1997 has also posed some delay in the implementation of the school's environmental activities.

This thesis does not claim that implementing an INSET workshop is the only way for EE development in Kuwaiti Middle Schools. Yet the findings lead to the judgement that a structured INSET programme, based on identified need, and specifically designed for the Kuwaiti context, reflecting on Islamic values would be a useful and a motivating addition to any effort taken for improving this aspect of education.

However following directly from this point, an even more significant conclusion is the 'hypothesis' that emerged from the researcher's reflection of the workshop evaluation, that the demand for 'new' environmental values exists within a pool of Islamic teachings. The Islamic moral tradition already embodies an ethic, which is well suited to the current ecological problems facing humanity. Through appreciating care and concern on behalf of the planet and all its constituents, Islam brings a prosperous vision to the future. It trains the individual to overcome his self-interest and strengthens his ethical obligations towards God's creation. An essential message of Islam is for Muslims to filter out those external influences that run against the Islamic spiritual and moral obligations towards the environment.

The outcomes of the evaluation processes highlight the need to identify and develop methodologies, which will enable the inclusion of EE ethics in the teachings of the subject disciplines. This development can be accomplished by taking into consideration Islamic environmental ethics. Putting Islam to the fore enables teachers of all subjects to accommodate and assimilate Western environmental concepts in a culturally specific way, enabling EE to find place within the 'traditional' curriculum.

Chapter Nine

Discussion in relation to aims of this research

9.1 Introduction

This chapter addresses the research questions. The following sections are guided by the research questions identified in Chapters 1 and 4 and revisit the main ideas generated by both the conceptual and empirical components of this thesis.

9.2 Research question 1: What is the status of the provision of EE in Kuwait Middle Schools?

This question is dealt with in Chapters 1, 5 and 6. Chapter 1 provides a background of the Kuwaiti educational system, and a critique by some Kuwaiti scholars of the existing educational strategy and goals. It reveals grounds for considerable modification of the educational curriculum, rethinking of the traditional structures and organization of classroom teaching, and professional development in-service training of teachers. A major concern was the demand for compliance with the needs of the individual learner and the Kuwaiti society, in accordance with the latest educational developments around the world and, at the same time, fostering moral Islamic judgement. Some scholars were found to be concerned specifically with the consumer oriented attitudes of Kuwait society and with the state of the environment.

The Kuwaiti curriculum assigns nationally defined texts. The analysis of middle school Kuwaiti textbooks (see Chapter 5) indicated that the text-based didactic patterns of instruction are mainly theoretical, disconnected from the context of local concerns. No examples were found to develop students' attitudes and behaviour through action projects. The texts do not overtly attempt to empower students for responsible environmental action. There is no encouragement for students to appreciate nature. The texts seem to include some environmental information, but they end up reinforcing a 'technocratic' perspective, and alternative viewpoints are not explored. They encourage the belief that environmental problems can be fixed by technology. In doing so, they may be thought to draw a veil over the real state of the Earth, valuing it only in terms of human needs, and preparing students as agents for economic growth. They present development as a positive process without revealing the possible negative impact on the environment. The textbooks do not stimulate teachers to provide the learner with experiences to develop critical

thinking, to question traditional practices, or even to reflect on Islamic environmental values. In short, the extent to which Kuwaiti middle school practices can be regarded as complying to the criteria for effective EE in Kuwaiti context, as presented in Chapter 6 (section 6.2.2), is minimal. Environmental values are not explicit. Perhaps more significantly, the curriculum is not strongly compliant to the Islamic ethics and values.

The analysis of the teachers' survey questionnaire, summarized in Chapter 6, showed that the Kuwaiti middle school teachers have an unsophisticated and partial understanding of the concept and goals of EE. The tendency of Kuwaiti teachers is to concentrate on the nationally devised, subject specific curriculum materials. They are not encouraged to construct their own educational learning activities or units. Moreover, the ME has no policy plan for INSET training in EE. Again, the analysis reaffirmed the findings of the text-book analysis, that present classroom practices are not adapted to the proposed practices of the Western concept and pedagogy of EE, nor to the aspirations of an Islamic ethos towards the environment.

9.3 The research questions 2: What are the principles of the Islamic doctrine that bear on environmental ethics?

The primary aim of this research became to identify the environmental ethics rooted in the Islamic worldview, and examine its prospect for contributing to the environmental ethic, which is discussed in Chapter 3 (section 3.5.2). The significance of several Islamic principles was highlighted in the lengthy literature review on Islam (Chapter 2). It displayed the moral contribution of Islam for the preservation of the integrity of the Earth's constituents. In summary the following Islamic principles can be highlighted:

- the place of Man on Earth and his responsibility of 'stewardship',
- significance of knowledge,
- ethics for justice, equity, moderation in consumption, and globalization,
- the Earth as living unit,
- the Islamic conception of history,
- the Islamic perspective of nature.

Islam considers the Qur'an (the message of Islam), and the tradition of the Prophet as a complete system of Divine knowledge, whose meaning is valid always; it is never out of

date. The Arabic interpretation of knowledge includes science. Islam puts emphasis on knowledge and intellect. Science leads Man to the acquisition of knowledge. The Qur'an repeatedly tells Man to study the elements of nature and the natural phenomena. It encourages contemplation of the cosmos and understanding of God's creation; this, in Muslims' belief, culminates in God's fearing and a sentiment for adhering to the Divine Law.

Islam is based on three fundamental principles which are: Divine Unity, vicegerency (delegation of power to Man), and justice. In Islam great emphasis is laid on ethics and moral values. The stewardship ethics of humans as caretakers of the rest of creation is a fundamental faith within the broad spectrum of the Islamic religion. The whole Earth is a trust of God. Humanity is a steward responsible to God for the care of the Earth.

This thesis argues that Muslim communities need to revive their Islamic tradition and seek the means of converting the *environmental ethics* provided in Islam into a component of the individuals' mainstream life. It is 'hypothesized' in this thesis that Islam may become an essential vehicle to 'carry' EE into the Kuwaiti middle school curriculum.

9.4 The research questions 3: What key concepts (e.g. Sustainability) of Western EE relate to Islamic schools?

The ecocentric perspective, discussed in Chapter 3, emphasizes the intrinsic value of all nature. It holds that modernity has encouraged humans to look at the Earth as a resource to be used and that human respect for nature is lost in the pursuit of the material world. It looks at modern progress and technical development as boosting economic growth at the expense of the depletion of natural resources, the destructive impact of Man on the environment and the degradation of the biosphere. It holds that it is a materialistic worldview, which isolates and diminishes spiritual and sacred aspects of reality. The basic principle of the ecocentric worldview is that the universe is made of one basic spiritual-material entity. Although such a perspective is Earth-centred, it is argued that it has much resonance with Islamic ethics which are God-centred (as explained in Chapter 2).

Islam rejects materialism and consumerism. It constrains human action through imposing limits to desires. It calls Man to make limited demands on the planet's resources. In Islam, moral and religious response to the environmental crisis could be found in historical

narration. Islam calls Muslims to dwell upon errors of ancient nations. It views that corruption leads to an accelerating decline of human civilizations (see Vol. 2, Appendix 2.3). Such an Islamic view of history is to an extent shared by the ecocentrics' view, which is expressed by Clark (1983:195):

'to have a sense of history is an essential part of the holistic view, simply because it is only overtime that the patterns and relationships are visible'.

Leiss (1994:61), extends this view by explaining that:

'the rebellion of human nature is a recurrent feature of human civilization. What is new in the 20th century is the fact that the potential scope of destructiveness which entails is now much greater .. revolt of external nature accompanies the rebellion of human nature.'

As Chapter 2 highlighted, Islam sanctifies the whole life, and gives religious connotation to every act necessary for life. Every deed of a Muslim must be guided by the law of God *'the Shari'ah'*, which emphasizes the interconnectedness of Man with Earth and all creation. Islam declares Man and his faculties responsible for the outcomes. God has given Man freedom of will; on account of his choice and conduct (how he has discharged his responsibilities in this world) he defines his destiny.

Comparing on ecocentric ideology of life with the Islamic philosophy of life and its code of principles, this thesis argues that there is great similarity between the two. Islam shares the same fundamental ethics with the Western ecocentric perspective needed for achieving a sustainable society. But, a major disparity is seen in relation to the notion of 'sustainability'. Islam considers the eternal life in the hereafter as a continuation of life in this earthly lifetime material world; the condition of an individual's life in the hereafter would be pertinent to his worldly conduct. The supreme achievement of this life, in Islam, is abiding in heaven and, therefore, the real abode is in the afterlife. In contrast, the environmental ethics and values established by Western ecocentric perspectives for ensuring 'sustainability' are directed to the prosperity of life on planet Earth.

9.5   The research questions 4: How can teaching be supported to develop EE in Kuwaiti Middle Schools?

This research stemmed from a desire to develop a framework for promoting EE in Kuwaiti middle schools. The ME states that the aim of education in Kuwait (cf: Chapter 1, section

1.4) is to promote students' spiritual, and intellectual aspects within the context of Islamic principles. Yet the literature review of the Ministry's documents shows no indication of how the ME's curriculum contributes to this goal. To achieve such a goal, there would be a need for a carefully planned strategy for change. Chapter 1, section 1.7 presented critique of Kuwaiti formal education arguing for the need for educational curriculum to be adapted to present and future needs of the learner, the society and the environment.

It is argued that no development can be applied in isolation of the teacher. Chapter 7 presents the conceptual outline of an in-service teacher workshop (with full details provided in Vol. 2, Appendix 7.2). Heeding the work and suggestions of several environmental organizations and educationists across the world, such as WWF, OECD, Fien (1994) and others, the INSET workshop was designed and implemented in a Kuwaiti context with Kuwaiti middle school teachers. It was informed according to the criteria identified in Chapter 6 (section 6.2.3). Its aim was to identify its implications for the purpose of exploring an effective means by which to ensure that EE forms an explicit part of teacher training for all practising teachers in Kuwait.

The objectives of the workshop were to create opportunities for:

- Teachers to reflect critically on their practices.
- Critical analysis of values.
- Action and reflection on local issues.
- Demonstrate how EE content and pedagogy can be incorporated into all subject disciplines.

These objectives were undoubtedly ambitious particularly for a two-day experience. Nevertheless, the workshop demonstrated some tangible evidence that it moved towards its goals. The style of instruction used was, for the Kuwaiti context, more of class-directed participation than purely instructor directed. The learning experiences were designed to involve teachers in exploring and reflecting upon their own and others environmental and educational philosophies and practices. The potential implication of the workshop was to elicit teachers' perceptions to examine environmental issues critically and to help develop their capacity for setting activities in school or classroom events to support students in acquiring knowledge relevant to the needs of the environment.

Water and electricity issues were selected to be dealt with in the workshop for three main reasons: the importance of these issues for human sustenance, the controversy around their availability, management, as well as the significance of quality of drinking water for life. From a local aspect, water and electricity in Kuwait are provided using the energy released by burning oil. An alarming fact is that their consumption price in Kuwait is low, and as a consequence, their consumption rate is increasing (see Chapter 1, section 1.3). It should be emphasized again that at this stage the Islamic dimension was *not* a major issue in planning the workshop. The workshop became the catalyst, indeed the evidence based, for further reflection which led to the realization that the Islamic context of Kuwaiti schools is potentially highly significant in the development of an EE curriculum component.

In order to judge the workshop effectiveness, Chapter 8 presents an analysis and commentary of the workshop evaluation data. The aim of the evaluation processes was not to discuss substantial findings, but to provide a basis for discussion of the difficulties experienced and the lessons learned through reflection. The aim was to identify appropriate modifications to provide possible methodological insights for teacher educators who may seek to work on similar projects.

One of the strengths of the workshop was the variety of the educational techniques and approaches, which involved several educational aids and activities. The analysis showed that the workshop was enriching and a worthwhile learning experience that did create conditions for critical reflection. The participants asked for more information, more insight, and more time. The ethical approach, and explicit reference to some Qur'anic verses, evoked response from all participants. This contributed to further reflection on Islamic ethics. In subsequent stages of the research, Islam was increasingly seen as a viable organizing set of principles for EE curriculum development in Kuwait.

One measure of the workshop success could be felt, since it seemed it had led to a generally heightened awareness among most of the participants, and it later spurred one of the schools, 'Safia' school, into producing an action plan for EE. Following the workshop, the researcher conducted a series of visits to Safia School contributing in the enhancement and guidance of the teachers, in the light of the priorities and the needs of the school. The interest and the enthusiasm of the school management and the particular teachers could be testified by their efforts to respond directly to the workshop recommendation. The evidence indicated that this particular school had taken on board the commitment to try

out some activities with its pupils, and as a consequence it brought about some change in the school environment. The school carried out some environmental-focused activities and developed policies on energy and water consumption. For example, students were accustomed to switching off the lights and electrical devices at school when not in use. Indeed, these procedures are encouraging.

This case exemplified the potential of Kuwaiti teachers to carry the workshop objectives with their students. However, there is still a long way to go. These working examples could be an initial first step for taking on board environmental concerns more deeply. Furthermore, these efforts could be propagated as successful models that could easily and effectively be adopted and modified for use by other schools.

In the context of the practical difficulties encountered, the workshop experience provided important evidence and basis for judgement to ensure effective results for future applications. It highlighted the significance of the Islamic dimension as a vehicle that has the potential to carry the ethics of EE. The introduction of the Islamic environmental ethic within the course of the workshop action could be used as the integrated theme, which goes beyond subject compartments. However, this would not be possible unless there are some political measures to support it: for example the official recognition, support and sponsorship of EE as a factor in teacher professional training programmes, emphasis on Islamic environmental ethics, and school support and provision of resources in EE.

The results have set the scene for teachers to be exposed to educational opportunities so that they can fulfil more effectively the objectives of EE. The workshop could be considered as an initial step of INSET in EE for Kuwaiti middle school teachers. No doubt, many of the themes and ideas, which have been explored, will require further elaboration and more in-depth study from those who share a mutual concern for the future of the Earth community.

9.6 The emerging significance of the Islamic dimension

As with most research conducted over period of years, this project has its own narrative. Part of the story is personal, for this research has stimulated a good deal of change and personal development. Originally, the emphasis of this thesis was on training teachers on teaching methods and insights from looking at Western practices on EE concepts and

ethics. The significance of the Islamic dimension emerged *during* the empirical study (during the implementation of the workshop, see Chapter 4, section 4.9; Chapter 8, section 8.2: the Islamic dimension did not feature strongly in the workshop). In a later stage, it was felt that Islam could carry those ecological concepts and ethics, and that Kuwaiti teachers have the potential to endorse such an ethical task, given that Kuwaitis hold firmly to their belief.

The research questions of this thesis were intended to study the impact of utilizing IT facilities already provided for the Kuwaiti middle schools for the promotion of EE. Therefore, influenced by the Western ecocentrics' views of nature, while gaining substantial theoretical and practical experiences in teaching methodologies developed in the field of EE in the West, the researcher planned for implementing a two-day workshop with Kuwaiti teachers. The main focus was on theories of learning, innovative teaching aids and methodologies recommended for EE. Thus, the IT teachers were included in the sample of the survey questionnaire and therefore the questionnaire examined the use of IT and teaching aids in educational settings intensively (see Vol. 2, Appendix 4.3). However, from the initial stages of the thesis, the researcher acknowledged the similarity between some of the Western environmental perspectives and those of the Islamic theology. Therefore, within the two-day workshop plan there appears incidental references (see Vol. 2, p:167, p:168), to a couple of Qur'anic verses and Islamic tradition. A brief reference to Lovelock's "Gaia theory" was also made to indicate its relevance to the Islamic perspective on Earth as a living organism.

The approach of the two-day workshop was to integrate the theoretical content of the school curriculum with every day practical issues, to engage the participants in critical and reflective arguments, and to enhance their pedagogical content knowledge. This was a challenge to the existing classroom culture. The ultimate purpose was to enable the teachers to help their students to cope with real-life environmental opportunities and crisis and question their own personal values in order to promote the development of conscious raising.

In the course of the two-day workshop events, positive reactions of the teachers (mainly of RE) were recognized; there were moments of contemplation of the verses. Virtually, all were satisfied with the presented interpretations and comprehended their relevance to the contemporary state of the environment. During the breaks, the researcher was engaged

with the teachers in informal chats. These were the key informant moments. The majority expressed their interest in the process of relating Islamic teachings to Western worldviews and present day issues acknowledged by the West; one remark was 'every one should be informed by these findings'. A couple of teachers of different schools persuaded the researcher to lecture on environmental ethics at their schools. The researcher was not able to fulfil their ambitions as a result of the lack of time for preparation and her urge to advance her own understanding of Islamic ethics. The workshop provided her with insight to the significance of an ethical Islamic approach to EE.

In a way it seems that the ME responded to the criticism of some Kuwaiti scholars that Kuwaiti teachers are not prepared to respond to controversial issues (see Chapter 1, sections 1.7, 1.8). In particular the ME reacted to the middle school teachers' perception that the middle school curriculum is largely theoretical and disconnected from the context of practice, and to their call for development of their professional skills for planning school-based activities (see Chapter 1, section 1.7.1). This response is apparent through the ME's decision to conduct a two-week INSET programme, targeting middle school teachers, those willing to take the responsibility of engaging middle school students in educational activities during the weekly activity sessions. The ME had contacted different parties for the arrangement of a specially tailored training course. This could be considered as an acknowledgement on behalf of the ME to comply for the middle school teachers' needs. The main concern of the course' sponsors was to train and acquaint the teachers on some practical educational activities relative to the needs of the middle school curriculum.

In regard to the recommendations of the GDA - which is the authorized body for conducting in-service teacher training programmes in the ME - the head of the educational activity unit in the ministry, Miss Basima Al-Turki, contacted the researcher by telephone to seek her agreement to conduct a one week workshop for the middle school teachers. Finally, the researcher agreed to conduct a one-day workshop for male and female teachers separately (for more detail see Chapter 7, section 7.7).

Drawing on her expertise from the two-day workshop, the researcher gained rich input from the teachers, and, as the researcher began to read more about Islamic teachings, the focus of the thesis diverted towards emphasis on the Islamic ethics. Therefore, the major outcome was the change of the focus of the research - from an emphasis on Western

environmental ethics to Islamic environmental principles. Hence, Islam became the unifying theme.

9.7   Reflections: Possibilities, constraints, limitations

The main obstacle against testing new educational strategies in Kuwait was to overcome the resistance of the authorities behind a traditional educational system that feels threatened by the notion of change to the status quo. Such "confrontation" between individual research and vested interest of groups against the accomplishment of a personal goal, required self-confidence, patience, perseverance and determination to win.

The two-day workshop evaluation presented constructively the weaknesses and problems. The main complaint was the content over-load, and that the overall contact time was insufficient to allow clear definite treatment of the issues. It also showed that the workshop had proved to be effective in the sense that the participants seemed to be developing as reflective practitioners. They seemed to be equipped to bring about changes, however small, into their schools.

Initially, the researcher underestimated the ecological significance of Islamic ethics, and later was convinced that opening up the Islamic ethos with Kuwaiti teachers could be a solid basis in all environmental arguments. And that teaching Islamic environmental ethics could be a powerful organizing tool for teachers to develop their students' attitudes and behaviour towards nature according to those ethics defined in the Divine Law.

It could be assumed that the seeds for development of EE in the Kuwaiti educational system had already germinated, perhaps, from the initial steps of the teacher survey questionnaire. This gained its first fruits by the accomplishment of the first two-day workshop conducted with female teachers only, and consequently, by conducting the officially recognized one-day workshops implemented with both female and male teachers separately. The fact that the ME invited the latter event is considered significant.

On an educational level, the first workshop (the two-day workshop) proved to be successful in raising the awareness of the officials in the ministry and the targeted teachers for the need to develop the standard of current practice of EE. The official invitation of the researcher to conduct another workshop (the one-day workshop), and the freedom of

choice of content and pedagogy given to her could be an indication to believe that the ME has lately sensed the need to relate teacher in-service training with real-life problems, and to integrate theory with practice.

Promoting Islamic environmental ethics as a central element for developing the learners concern for the quality of the environment has proved to be an effective approach to the development of EE in Kuwaiti Middle Schools. Therefore, the researcher has come to realize, in a late stage of her doctoral research, that the promotion of IT facilities in developing EE in Kuwaiti Middle Schools was not the 'proper' approach. This idea could stimulate others with an interest in IT and EE to develop this area further, building on the main findings of this thesis.

Raising the environmental awareness and competencies of the teacher is a central element for developing EE in schools. This thesis addresses itself to the neglect of Islamic environmental ethics in teacher training. It has argued that Islam could be the element that can integrate all educational curricula into a coherent effective educational substance. Islam has the potential to develop the individual's ethical basis of his/her responsibility to the environment. However, the chain of empirical work of this thesis represents a framework for subsequent application of teacher-training in EE in Kuwait. The findings of the analysis could be regarded as a milestone in the process of educational development. It could be considered as an initial step of EE development in Kuwaiti Middle Schools. In the course of this work, there emerge a range of gaps and unexplored issues, where much work remains to be done. Many of the themes explored may yet require further investigation and more in-depth elaboration by those who share a mutual concern for a sustainable future. Prominent among these is evaluation processes of the existing INSET programmes.

Learning from hindsight, if this research was to be re-implemented several research processes would be conducted differently. Initially, the survey questionnaire could be more concise and would be designed to examine the environmental ideologies adopted by the teachers, school administrations, and the curriculum authors along with the teaching methodology.

The workshop approach would now definitely be through the introduction of Islamic environmental ethics. Lectures on Western environmental concepts such as EE, EfS would

not be so elaborate. The participants would be provided time for reflection and discussion, to look into the issues with critical analysis of values and life-styles. As a result, the evaluation tools would be designed to address the new set of objectives. The possibility of future workshops would tackle wider issues, local and global and would cover a variety of environmental topics to be examined from various aspects, the physical, social, political, economic, health, and ethical aspects.

It would be of interest if the workshop could be conducted with the same participant teachers in two phases, with considerable time-lapse. The second phase would examine the projects and activities implemented by each school group. The participants would be encouraged to reflect on and discuss each other's projects. This is thought to give insight on the opportunities for future development.

Further research within the themes of this thesis covering all educational phases, across the curriculum involving male and female teacher, along with students would be useful. It could also be useful to extend the developmental ideas of this thesis to the pre-service teacher education.

As a first step, in order to reform and improve the existing in-service practice, there is a need to question and to uncover the underpinning educational policies and ideologies behind educational decision making against the background of Islamic ethics. Then, to articulate a coherent approach to EE in teacher education, in order to define a clear framework and relation of EE and of Islamic teachings to the educational curriculum. On the basis of the analysis, appropriate modifications should be made in educational policies, henceforth to INSET content and pedagogy, school text-books, teaching aids, and teaching methodologies. Promoting the proposed educational opportunities should aim to foster in the learner the development of critical reflection and moral reasoning, and the development of self-regulated ethical thought and action.

The crucial, personal impact of the two-day workshop on the researcher resulted in her determination to explore the Islamic ethos and relate them to Western ideologies in order to develop an Islamic approach to environmental education in Kuwaiti middle schools. A major outcome was that the emphasis of this thesis has shifted from mainly the utility of information technology and a fascination with the Western environmental ethics towards enforcement of Islamic environmental ethics by relating Islamic environmental wisdom to

traditional subject areas. Islam, it has been argued (see Chapter 2, section 2.7) provides a coherent moral judgement for the dilemmas of modern life. In addition, and because of this, it also provides a vehicle for carrying EE into the Middle School curriculum as a whole. Therefore, from a personal level, the researcher has gained a broader understanding in the field of EE and Islamic tradition as well as acquisition of the necessary skills needed to run teacher workshops. The insight gained from the strength and weaknesses of this study has provided the researcher a considerable experience in the field of professional development of Kuwaiti teachers in EE. As an experienced classroom teacher, the idea of running INSET workshops as a teacher educator was not within the researcher's initial expectations.

Building from initial accomplishments of this thesis, there could be the prospect for a future development of EE in Kuwait, mainly, through the development of the teacher-training sector in Kuwait.

9.8   Conclusion

The main purpose of this thesis is to examine the content and pedagogy of EE, and the way these can be incorporated in the Kuwaiti middle school curriculum. The analysis of the Kuwaiti educational curriculum showed that the classification of its adopted ideology matches that of the technocratic ideology rather than an ecocentric one and (as it later became clear); it is in contrast with the Islamic ethic of life. In the context of the literature review, text-book analysis, survey questionnaire, reflecting on the practical difficulties encountered and the positive reactions of the teachers to the workshop content and pedagogy, it was realized that Islam was a way to 'carry' the fundamental environmental ethics, newly developed in the Western world. The biggest factor against development was the lack of sufficiently trained teachers. This thesis was stimulated by the lack of studies in these areas.

An ecocentric ideology, incorporating values and spiritual notions, assumes in the wholeness and integrity of Man/Earth, and places Man as part of the natural environment, as one element of a whole network. Moreover, it supports a simple lifestyle and calls for moderation in consumption.

This is reflected in Engel's (1992:74) statement that:

'the salvation of the world lies in a global revolution in human consciousness, not in economic growth.'

This thesis argues that some of the principles of the ecocentric ideology are consistent with the basic spiritual approaches in Islam. It also argues that the statement of values implied by the 'new world ethic for sustainability' emerging in the West, claimed to be rooted in eco-philosophy, is deeply reflected in the Islamic wisdom. Islam holds a code of ethical principles based on sanctity of all God's creation, as a consequence of Oneness of the Creator. It has the potential to take a prominent role in formulating a global environmental ethic for 'sustainable' living (however this contested concept is defined). There exist moral constraints on the dealings of humankind with nature. Islam inhibits exploitation of nature. It ascribes rights for the non-humans. It advocates co-operation with nature aimed at the enhancement of natural beauty and the glory of God.

It is the contention of this thesis that Islamic faith can become an integral part of the development of environmental ethics in Kuwait. It presents a perspective that can provide a motivating force, aimed at protecting the Earth from human exploitation. This thesis calls for revival of Islamic ecological and ethical teachings, because Islam sets out ethical basis for EE. Islamic environmental traditions could act as a cross-curriculum theme that is possible to be utilized in an Islamic educational system to solve problems, or at least address issues, which are not possible to be solved or addressed sufficiently in a secular system. This thesis argues for explicitly including Islamic values in the specific objectives of individual lessons, in terms of getting students to examine critically, and understand the underlying ideology behind people's environmental decisions and actions and help them confront realities which are not in accord with the Islamic ethics.

In particular, this thesis appeals to teacher education as a means to facilitate the process of integrating EE into subject based curriculum. Rather than waiting for the ME to realize the need for developing in-service teacher training in EE, this thesis has taken such initiative. A workshop, reflecting the works and suggestions of leading environmental educationists around the world, was implemented with Kuwaiti Middle School teachers. However, it does not aim to produce a blueprint for future workshops; it could be considered to be useful and a motivating addition to any future INSET effort. The workshop can be used as

a basis for officially recognized structural programmes of professional and curriculum development, which may provide ideas and new skills for teachers.

Islam is prominent through cultural educational life in Kuwait. Since Muslim teachers are committed to Islamic environmental ethics, this thesis proposes a scheme that looks into the possibilities of integrating Islamic teachings with Western concepts and teaching methodologies of EE within an educational system of Islamic communities. It represents a framework for subsequent applications of teacher's training in EE, and can serve as an invitation to further investigation.

9.9   Recommendations

In Islam, education has an inherent moral dimension. It becomes obligatory on part of an Islamic educational system to take on board ethical issues related to the environment, to be an integral part of students' educational experience. In the light of the review of the literature and the empirical findings, this thesis suggests that attention should focus on the three key and inter-related sectors that constitute the backbone of the educational process: the curriculum; the teachers; and the pedagogy and methods of work.

- The curriculum needs to be under continuous review for adaptation to contemporary life issues as a means to help students to be aware of Islamic environmental ethics. Such a curriculum review will foster in students' moral Islamic judgement through critical reflection and moral justification. It will encourage them to examine their lifestyles and investigate alternative behaviours, to help them understand what impact their lives have on the environment. An effective educational curriculum should include a set of organized experiences which aid students in developing knowledge, awareness, skills and attitudes concerning the environment.

- EE needs official recognition from the ME, and to be promoted across a wide range of disciplines, as an important component of the whole curriculum, with Islam being the guiding principle.

- In-service teachers require continual training and development in EE to keep abreast of new skills and approaches, made accessible through their interpretation, and modification in an Islamic context. Provisions ought to be made to allow teachers to

adopt a critical form of educational inquiry, and draw on a range of appropriate knowledge, materials and classroom techniques in EE. The practice should challenge the dominant technocratic understandings and approaches to 'sustainability'.

- EE educators in Kuwait have the opportunity to learn from experiences in EE development elsewhere and frame their own educational goals, procedures and responsible environmental behaviour models on the basis of Islamic tradition.

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