Overlapping of Locust Endemic with COVID-19 Pandemic: Demanding Pro-active Interventions for Healthcare and Food Security of the Country at Risk

Md. Mizanur Rahaman[1], Otun Saha[1], NadiraNaznin Rakhi[2], Md. MirajKobad Chowdhury[3], Peter Sammonds[4], ASM Maksud Kamal*[5]

[1]Department of Microbiology, University of Dhaka, Dhaka-1000, Bangladesh
[2]Department of Biotechnology and Genetic Engineering, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Gopalganj, Bangladesh.
[3]Department of Genetic Engineering and Biotechnology, University of Dhaka, Dhaka-1000, Bangladesh
[4]UCL Institute for Risk and Disaster Reduction, University College London, Gower Street, London, United Kingdom, -
[5]Department of Disaster Science Management, University of Dhaka, Dhaka-1000, Bangladesh

*Correspondence: Professor Dr. A.S.M. Maksud Kamal, maksudkamal@du.ac.bd

Comment:

The current world is in quagmire with the continuing Coronavirus Disease (COVID-19) pandemic that affected 212 countries and territories globally infecting more than 4 million people and killing three hundred thousand so far.[1] Beside severe healthcare crises, the pandemic has already imposed deep scars in the global economy and socio-political stability. UNU World Institute for Development Economics Research (UNU-WIDER, 04 May, 2020) unveiled that the economic contraction could push an additional 500 million people in developing countries, about 8 percent of the earth's population into poverty, reversing 30 years of economic improvement(https://www.wider.unu.edu/news/press-release-covid-19-fallout-could-push-half-billion-people-poverty-developing-countries). Non-pharmaceutical strategies like social distancing and lockdown became indispensable to contain the dissemination of the highly transmissible Severe Acute Respiratory Coronavirus-2 (SARS-CoV-2)[1], but the

resulting trade shutdown implies an unimaginable threat to food production, supply chains and livelihoods. The United Nations World Food Programme (04 May, 2020) has warned that an estimated 265 million people could face acute food insecurity by the end of 2020, up from 135 million people before the crisis(https://www.wfp.org/news/covid-19-will-double-number-people-facing-food-crises-unless-swift-action-taken).

Simultaneous to the COVID-19 pandemic outbreak, locust swarm primarily of desert locusts (*Schistocerca gregaria*) are threatening the cultivation of agriculture productions[2]and pasture in 23 countries to date from Pakistan to Tanzania- 9 in the wider East Africa region, 11 in North Africa & the Middle East, and 3 in South Asia (http://www.fao.org/ag/locusts/en/info/info/index.html). Locust populations are rapidly growing, decimating hectare of crops and non-crop plants within the shortest time and found associated with great famine.[3]Zachary J. Foster (2015)[4] mentioned that locust invasion caused starvation or starvation-related diseases in Syria and Palestine during November 1915-1916 that killed 100,00–200,000 people in the region. The current locust swarm has become endemic in Africa with the infestation initially started in July 2019. While a single locust can consume equivalent to its own body weight each day[5], there may be 80 million locusts per square kilometer in swarms (https://www.dw.com/en/east-africa-why-are-locusts-so-destructive/a-52165354) capable of destroying at least one hundred kiloton's of vegetations per swarm per day. Responding to the crisis, World Bank (27 April, 2020) mentioned that this invasion is a single global outbreak at present, and if it reaches plague levels, it could cover 20 percent of the earth's land mass. Locust caused an estimated $2.5 billion in crop damage during 2003-2005 plague in East Africa.[6]

The emergence of a locust-endemic along with COVID-19 pandemic can be attributed a disaster within a disaster or cascading risk. But, it is presumed that the attention on COVID-19, made the locust-endemic a relatively overlooked hazard risk. Controlling the locust

infestation has failed significantly due to COVID-19 driven mitigation measures, where it invaded in the first phase countries including Somalia, Kenya, and South Africa. As a result, the swarm has crossed from the Horn of African to Pakistan, where the government declared a national emergency to combat the attack and save the crops, like Somalia. The cascade of both catastrophes may result in a disaster escalation process towards famine, health-hazard and poverty in the regions at risk. This discussion attempts to focus attention of national and international organizations to take necessary interventions immediately within the framework of COVID-19 induced lockdown and quarantine before uncontrolled locust-invasions occur in the regions. The projected climate-change induced extreme events- cyclones and heavy-rain in Arabian Peninsula could enhance further an enabling environment for breeding of locusts. The upcoming monsoon may add to the threat, as the locust population is estimated to increase by up to 20 times, and the locusts invade crops at harvest time (https://www.nationalgeographic.com/science/2020/02/locust-plague-climate-science-east-africa/).

To meet the demand for food, the people of the Horn of African are compelled to work in the fields to avert locust invasions and to grow crops breaching the WHO restrictions in a compromise between food security and the viral outbreak. The African countries are considered to be the next epicenter of the COVID-19 outbreak on the one hand and locusts threatening the agricultural and economical prospects on the other. Thus, COVID-19 accompanied by a possible arising of a second wave of locusts may mean the region falls into a vicious cycle. The shortage of food will not only be a threat to humans but also to grazing animals and so disrupting the entire food chain.

In addition, it has been reported that locusts may contribute to the dissemination or transfer of the multi-drug-resistant (MDR) bacteria, which will add another serious public-health concern.[7] Medical facilities in African countries are very limited and hence, social mitigation

measures appear as the only potential option but which will severely affect agricultural production. South Asian countries are seeing an increasing trend of COVID-19 infections and also expecting a giant locust storm so will have to fight on two fronts: one against SARS-CoV-2 infections and the other to ensure food security.

The World Bank (27 April, 2020) noted that the COVID-19 pandemic is disrupting the supply chains for pesticides and other equipment necessary to control the spread of locusts. So the relevant national and international agencies should take proactive and trade-off interventions simultaneously to minimize the invasions of locusts and the viral infections in vulnerable countries, before the emergent plagues take hold. Available scenarios indicate that the synergic effect of COVID-19 and locust invasion will inevitably cause famine in African countries if effective interventions by international and local agencies are too slow. The developed world and international agencies should learn the lesson to pay more attention in future to build capacity in hot-spot and vulnerable countries in order to prevent and mitigate the emergence and impact of viral infections and locust swarms.

Author's contributions

M.M.R. developed the hypothesis, drafted and reviewed the manuscript, O.S., N.N.R and MKC drafted and reviewed the manuscript, ASM MK supervised the whole work and critically reviewed the drafted manuscript. All authors read and approved the final manuscript.

Acknowledgments

The authors would like to acknowledge Bangladesh Bureau of Education Information and Statistics (BANBEIS) for research grant No. LS2019935 to M.M.R.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Funding source

No Funding

Reference:

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