Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Climate change and COVID-19: reinforcing Indigenous food systems

Indigenous populations are at especially high risk from COVID-19 because of factors such discrimination, social exclusion, land dispossession, and a high prevalence of forms of malnutrition.[1] Climate change is compounding many of these causes of health inequities, undermining coping mechanisms that are traditionally used to manage extreme events such as pandemics, and disrupting food systems and local diets.[2] Addressing underlying structural inequities and strengthening Indigenous knowledge systems offer opportunities for building resilience to compound socioecological shocks, including climate effects and pandemics.

Climate change is affecting Indigenous food systems, making Indigenous populations vulnerable to food and nutritional insecurity.[3] The nature and extent of the effects of COVID-19 on Indigenous food systems are still largely unknown, but the direct results include mortality from severe illness, reduced access to food, changes in local diet, and economic losses resulting from lockdowns. These outcomes present impediments to the recovery of populations already facing substantial nutritional challenges. The effects of previous pandemics on Indigenous food systems affected children in particular, when adults became ill and household food access was reduced.[4] Inadequate health service provision for Indigenous populations, including scant access to culturally safe services,[5] adds another layer of complexity in the face of the COVID-19 pandemic. Effects of climate change undermine Indigenous food security, in turn compromising the resilience of Indigenous populations to pandemics. At the same time, disruptions to food and nutrition security and the resulting health implications for Indigenous populations during pandemics exacerbate their vulnerability to climate change. In this context, understanding, reinforcing, and protecting Indigenous food systems in the context of a changing climate must be a cornerstone of post-pandemic recovery.

In the Peruvian Amazon, some Shawi Indigenous communities have chosen to self-isolate in the forest during the COVID-19 pandemic.[6] These communities are relying on traditional diets and Indigenous knowledge of local food systems, and they have little availability and accessibility to external food and government food-aid programmes. During this self-isolation, reliance on Indigenous food systems is inextricably linked to Indigenous knowledge about the land, rivers, and biodiversity, which includes knowledge of local techniques to preserve and prepare food.[7] However, food from the forest is being affected by biodiversity and vegetation loss: heatwaves, precipitation variation, and more frequent and intense extreme weather events are all related to deforestation and climate change and are compounded by a weakening of traditional hunting and fishing skills as a result of climatic and societal changes.[6,8,9]

In the Arctic, Inuit are witnessing some of the most rapid rates of warming globally.[3] The remoteness of the region and travel restrictions have helped curtail the spread of COVID-19; however, disruptions to supply networks have had effects on food availability in communities that rely on retail food flown in from southern regions. To manage these disruptions, harvesting and sharing local foods, which is widely practiced in many Arctic regions,[9] has helped maintain food and nutrition security. Simultaneously, however, these local Indigenous food systems have been compromised by climatic extremes, including record-breaking temperatures, drought, and wildfires.

In Uganda, some Indigenous populations (eg, Batwa) have adhered to COVID-19 measures, including physical distancing, staying home, and avoiding trading centres because of crowds, which challenge food and nutrition security by restricting access to markets. Furthermore, timely government food aid has not adequately reached Indigenous populations. The extended lockdown in Uganda, particularly for border districts where many Indigenous populations live, has hampered their mobility to access forested areas for foraging, access to nearby communities to offer labour for food exchange, and access to agricultural fields for food production. These challenges are exacerbated by existing climate effects,[9] including recent flooding in 2019 that damaged crops, compromised food production,[10] and reduced the resilience of Indigenous populations when the COVID-19 pandemic hit.

Climate change challenges the resilience of Indigenous food systems with direct and immediate repercussions

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for the health and nutrition of Indigenous populations.[2] In our highly connected world, the COVID-19 pandemic has easily travelled across continents, reaching remote geographical locations and Indigenous communities in less than 6 months. There is a vital window of opportunity to support Indigenous populations who face the double and syndemic burden of compound and cascading socioecological hazards, such as climate change and pandemics, by prioritising the protection of key Indigenous food sources (eg, tropical forests, Arctic ecosystems), by reinforcing and supporting the importance of Indigenous knowledge systems, by improving access to culturally safe health resources, and by and safeguarding access and rights to land and natural resources of Indigenous populations. This is the time to ensure that current decisions and development trajectories do not further jeopardise the resilience of Indigenous food systems, which have integral roles in the response of Indigenous populations to current and future pandemics and climatic changes.

See Online for appendix

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