## Protecting environmental defenders to prevent pandemics





Although the jury remains out with regard to the origin of the ongoing COVID-19 pandemic,1 this global health crisis is a stark reminder of the continuous threat of emerging infectious diseases, and the need to tackle their upstream drivers (eg, deforestation and illegal wildlife trade). However, proposals for preventing pandemics at the source<sup>2</sup> tend to focus on high-level policies and actions, with relatively little support afforded to ground-level environmental defenders, who are arguably the most important frontline defence in stopping future zoonotic spillovers. Through sustained involvement in activities that reduce deforestation and biodiversity loss (eq, lobbying against powerful industries or politicians, and patrols to curb illegal harvesting), environmental defenders face increasing duress, ranging from occupational burnout to life-threatening attacks.3 Protecting the welfare of environmental defenders must be part of the solution to preventing future pandemics.

Fulfilling a role as an environmental defender can result in serious threats to an individual's life, as the number of murders of environmentalists continues to rise. In 2020, a record-high 227 deadly attacks on environment defenders were documented globally, making it the deadliest year for environmental defenders to date.3 In southeast Asian biodiversity hotspots (eq, Malaysia and Philippines), where threats to biodiversity<sup>4,5</sup> and risks from zoonotic spillover are concomitantly high,6 environmental defenders are disproportionately bearing the brunt of our planetary health crisis, particularly its political and commercial drivers. Colombia, Mexico, and the Philippines are considered the deadliest countries in the world for environmental defenders in 2020, with the Philippines being considered the deadliest country in Asia.<sup>3,6</sup> The need to protect environmental defenders from these threats is urgent and of greater importance than ever before.

Insufficient income among environmental defenders is also one of the main factors that hinders them in achieving their occupational fulfilment, which is crucial for effective job performance. In Asia, the low and irregular income of environmental defenders was reportedly the worst part of their job, with most of them reporting that they did not receive the proper safety equipment and amenities to fulfil their duties.<sup>7</sup>

Environmental defenders needed to make difficult decisions to provide income for their families. Data from 2016 show that almost half (45%) of the environmental defenders in Asia only spent less than 5 days per month living with their families due to job demands and great financial need.<sup>7</sup> With the current pandemic and its accompanying global recession, it is possible that environmental defenders are now facing much worsened economic hardship.

Additionally, environmental defenders could also be susceptible to the inimical mental health consequences of their jobs. Environmental degradation has been reported to have detrimental effects to mental health (eg, eco-anxiety and ecological grief) in children and general adult populations.<sup>8</sup> Even environmental scientists, some of whom might be working in universities that are farther from the front lines, already report mental health concerns related to their roles.<sup>9</sup> It is not difficult to imagine the extent of mental health consequences among environmental defenders who constantly face low income and an increasing risk of murder, and who also witness nature's decline first hand.

Pandemic prevention through nature conservation must include investing in the welfare of environmental defenders. Therefore, we present some recommendations. First, governments must prioritise the safety of environmental front-line workers who risk their lives protecting the natural environment. Governments must establish and strengthen domestic and international laws that protect environmental defenders from the dangers associated with their roles, as well as track and report violence inflicted against them. A stronger push government-led environmental peace-building efforts is also necessary to promote trust, encourage cooperation, and minimise aggressive encounters between environmental defenders and illegal loggers and poachers. Second, governments and non-governmental organisations must provide sufficient, stable income and financial safety nets for environmental defenders.

Lastly, there is a need to implement effective health and social services including mental health services for environmental defenders. For example, preventive (ie, mental health screening and detection) and curative (ie, counselling, psychotherapy, and other psychiatric services) mental health services are some key interventions that could ensure that environmental front-line workers can perform their function without distress or fear, and instead with flourishing psychological wellbeing. In all these actions, special attention must be given to the needs of the children of environmental defenders, female environmental defenders, and those who are members of Indigenous communities. We must do whatever it takes to defend the environmental defence profession, which is key to protecting humanity from pandemics and ecosystem destruction for generations to come.

RRG is a member of the Editorial Advisory Board of *The Lancet Planetary Health*. All other authors declare no competing interests.

Copyright © 2022 The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY-NC-ND 4.0 license.

\*John Jamir Benzon R Aruta, Renzo R Guinto, Gopalasamy Reuben Clements, Jemilah Mahmood johnaruta@sunway.edu.my Department of Counseling and Educational Psychology, De La Salle University, Manila, Philippines (JJBRA); Department of Psychology (JJBRA), School of Medical and Life Sciences (JJBRA, RRG, GRC, JM), and Sunway Centre for Planetary Health (RRG, JM), Sunway University, Selangor 47500, Malaysia; Planetary and Global Health Program, St Luke's Medical Center College of Medicine-William H Quasha Memorial, Quezon City, Philippines (RRG)

- Horton R. Offline: The origin story. Lancet 2021; 398: 2136.
- 2 Preventing Pandemics at the Source. We can prevent the next COVID-19. https://www.preventingfuturepandemics.org/ (accessed May 4, 2022).
- 3 Global Witness. Last line of defence. 2021. https://www.globalwitness.org/ en/campaigns/environmental-activists/last-line-defence/ (accessed May 4, 2022).
- 4 Clements R, Rayan DM, Zafir AW, et al. Trio under threat: can we secure the future of rhinos, elephants and tigers in Malaysia? *Biodivers Conserv* 2010; 19: 1115–36.
- 5 Hughes AC. Understanding the drivers of southeast Asian biodiversity loss. Ecosphere 2017; 8: e01624.
- 6 Bordier M, Roger F. Zoonoses in south-east Asia: a regional burden, a global threat. Anim Health Res Rev 2013: 14: 40-67.
- 7 World Wide Fund for Nature. Ranger perception: Asia. 2016. https://files. worldwildlife.org/wwfcmsprod/files/Publication/file/3ijzw1rbax\_Ranger\_ Perception\_Survey\_\_Asia\_.pdf (accessed May 4, 2022).
- 8 Cunsolo A, Ellis NR. Ecological grief as a mental health response to climate change-related loss. *Nat Clim Chang* 2018; **8:** 275–81.
- No authors listed. We need to talk about mental health. Nat Ecol Evol 2022;
  233.