

Coping with flood disasters: new lessons from COVID-19?

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Has COVID-19 compounded the risk to the people affected by floods? Flooding (fluvial, pluvial, tidal and storm surge) affects the lives, livelihoods and socio-economic activities of millions of people every year and displaces them from their homesteads, communities and socio-cultural setting. During extreme events, people are forced to move to shelters where they have to share space and resources in close contact with many people. Such congregations may considerably increase the risk of the spread of the virus unless appropriate physical distancing and health safety measures are ensured at the shelters. To combat the spread of the virus causing COVID-19, a third of the global population is currently in a lockdown [1], which causes to restrictions on people's movement and a ban on congregating outdoors. The lockdown has also severely damaged the livelihoods and socio-economic activities of communities affected by the dual disasters. It is important to learn how the compounded impact is affecting the vulnerable communities, and how they can cope with the evolving situation. COVID-19 is teaching us new lessons in flood disaster management.

Spread of the virus causing COVID-19 may significantly constrain the flood emergency and recovery responses [2]. There are concerns in places such as Bihar, India, where flood risks reduction measures such as embankment maintenance and repair works have been affected as workers headed home due to COVID-19 lockdown [3]. This might exacerbate flood risk in the region with the onset of monsoon rainfall. In many countries we see a declining number of reported COVID-19 cases, however in Central and South America, South Asia and Africa the peak has not yet been reached [1]. In many of these regions, where disaster preparedness is also limited, the urban population is particularly vulnerable to flooding. These flood disaster-affected areas are prone to becoming epicenters of pandemic explosion. In areas affected by both flood disasters and COVID-19 national and local governments and DRR agencies are facing unprecedented challenges to manage these dual disasters due to their competing approaches and far-reaching consequences [4]. For example, in East Africa, a region in the midst of a prolonged lockdown, the region is now experiencing exceptional heavy rainfall, causing floods that threaten life and livelihood [5]. In India, COVID-19 is already spreading in crowded slums of which a large number are regularly flooded during the monsoon season, where there is increased incidence of disease such as dengue and chikungunya during rainy season [6]. In Bangladesh, maintaining physical distancing and health safety measures in cyclone shelters during the recent Cyclone Amphan has been very challenging. Social (physical) distancing may stop the spread of the virus, but will hamper to take appropriate actions to decrease the direct flood impacts.

On May 29, 2020, the High-level Experts and Leaders Panel on Water and Disasters (HELP) has called for immediate use of the Principles in countries, cities, and hospitals to better manage the critical challenges under COVID-19 [7]. These principles promote actions to raise awareness, ensure coordination and collaboration, establish common goals and targets, monitor

progress, and take effective measures aimed at addressing the issues of water and disasters (see text box).

This pandemic is teaching us new lessons which should be systematically collected, evaluated and disseminated [8]. Countries such as Vietnam, Nepal, Bhutan, Sri Lanka experienced very early cases of COVID-19. However, they have been exceptionally successful in containing the spread compared to other South Asian countries such as Bangladesh, India and Pakistan [1]. Comparison shows the importance of cooperation and exchange of information at state, regional, and international levels. In addition, it reveals that countries with a well-functioning risk communication system in place to provide early warning of floods (often disseminated via mobile phones), such as in Nepal, can use these systems to inform and advise people about COVID-19 [8]. The role of local communities, local stakeholders and local governments is gaining prominence as support from outside affected areas is hampered in the COVID-19 era due to travel restriction and overstressing response operations throughout the world. They play a key role in hygiene promotion and social distancing in local communities. In the Hlaing Thar Yar township, one of Yangon's most densely populated areas with a high risk of flooding, a running, multiannual campaign to enhance urban resilience has been adapted to build capacity in the communities to better anticipate and respond to the risk of COVID-19. Government organizations should support operations at the community level and strengthen the capacities of local communities. In Canada and Japan, the governments have successfully mobilized staff and volunteers to secure social distancing during flood fighting and disaster management works to avoid exposing them to the risk of COVID-19 infection [2]. Self-isolation and physical distancing adopted by some societies is simply not possible in high volume evacuation scenarios with short notice. Therefore, improved early warning systems to extend the lead time of warnings, including better communication methods, are needed to earlier and better anticipate floods which allow to design and implement evacuation protocols that comply with COVID prevention measures. COVID-19 shows that disaster management and prevention are increasingly inter-related and can no longer be treated in isolation. We need to integrate biological hazards into a multi-hazard response framework. This requires scientific innovations and data – from earth-observing satellite images to disease-testing technologies and international cooperation on COVID-19 research priorities embedded in research programs on disaster recovery and resilience. As investing in resilience seems to payoff, this global pandemic provides an opportunity to combine short-term COVID relief efforts with investments in sustainable infrastructure.

The Principles to Address Water-related Disaster Risk Reduction (DRR) under the COVID-19 Pandemic was approved at the online HELP 15th Meeting on May 29, 2020 [7].

- Principle 1: Enhance leaders' awareness on disaster risk reduction (DRR) in the pandemic
- Principle 2: Integrate risk management of disasters and pandemics
- Principle 3: Provide clean water, sanitation, and hygiene sustainably during and after disasters
- Principle 4: Protect disaster risk management stakeholders from threat of COVID-19
- Principle 5: Protect scarce medical resources from disaster impact
- Principle 6: Protect disaster evacuees from threat of COVID-19
- Principle 7: Protect COVID-19 patients from threat of disasters
- Principle 8: Develop Specialized Evacuation Guidance for Cities and Areas under COVID-19 lockdown
- Principle 9: Finance DRR actions under COVID-19 effectively to avoid economic catastrophe
- Principle 10: Strengthen global solidarity and international cooperation to cope with these cooccurring challenges towards building our world back better

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