

Displaced Sand, Displaced People: Examining the Livelihood Impacts of Sand Mining

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PITCH

The social, economic and ecological consequences of unabated sand exploitation are profound. Sand miners, working directly in riverbed sand mining in and around Phnom Penh and urban farmers, whose livelihoods are impacted by the sand infill of urban wetlands, illustrate the complexity of the livelihood impacts of river sand mining in Cambodia¹. The governance vacuum of sand mining or infill will impact the type of development seen in and around Phnom Penh, the jobs people can access, and the environment in which people live.

CONTEXT AND ISSUES

Sand scarcity is an emerging global crisis. Sand dredgers, pumpers and miners extract sand found in rivers, oceans, estuaries, and beaches at a pace faster than natural replenishment rates¹. Much of this demand is linked to skyrocketing urbanization – sand is the main

ingredient in the concrete used for roads, houses and high rises. China, for example, consumed more sand between 2011 and 2013 than the US did during the entire 20th century. The global urban population is expected to grow from 4.3 billion people today to 5.2 billion in 2030, particularly in Global South cities. Sand is also used as infill for wetlands or state-territorial expansion – known as ‘land reclamation’ – for building dams, replenishing beaches, and producing a host of industrial commodities². Sand is the world’s third most utilized natural resource after air and water; even so, the vast socio-ecological consequences of sand labour and land infill are widely understudied.

Cambodia is an important international sand player, having had a significant portion of its coastal sand exports used as infill for Singapore’s territorial expansion. Cambodia exported 80.2 million metric tons of sand to Singapore between 2007 and 2016, representing

one third of Singapore’s sand imports in this time period. Yet, most of this trade is absent in Cambodia’s official trade logs. This period of intensive sand extraction paid little attention to how sand mining was disrupting local ecologies or impacting rural livelihoods.

METHODS

The analysis is based on data obtained through more than 50 open-ended, qualitative interviews with men working both in sand pumping sites or on sand barges along the Tonle Sap, Mekong and Bassac rivers, and with urban farmers (female and male) working in Phnom Penh’s wetlands. The authors also draw from their long history of working on sand and urban wetlands in Cambodia³, and from peer-reviewed sand articles, United Nations Environment Program (UNEP) sand reports, United Nations sand trade data, along with non-governmental organization and media reports.

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Geography Phnom Penh, Cambodia

Find out more about this project: <https://www.afd.fr/en/carte-des-projets/inequalities-and-environmental-changes-lower-mekong-river-basin>

Key words Sand Mining, Sand Miners, Urban Farmers, Livelihoods, Sand Governance, Inclusive Urban Development

Themes Poverty, Inequalities, Ecological Systems, Urbanization, Governance

¹ This research will soon be published as a chapter of the inequality/environmental change nexus in

the Mekong region, published by AFD as part of a project of the EU-AFD Research Facility on inequalities.

RESULTS

Sand dredging and pumping does offer livelihood opportunities for a few young men, namely those willing to work on barges or at remote sand pumping stations. Even though such livelihoods are limited in terms of advancement, and temporary in nature, they are seen as more appealing than alternatives such as construction work. Sand work may also be easier for younger men to access than factory work where women tend to be favoured for employment. Yet, contracts are non-existent and workers are only paid when sand is dredged or off-loaded. Sand work also compels men to live far from their families as sand dredging increasingly occurs further away from towns.

The consequences of sand exploitation unfold differently for urban wetland farmers. Here, the steady rhythm of sand being pumped into wetland spaces takes time, resulting in a gradual change to the ecosystem and landscape. Sand infill impedes natural flood cycles



that made farming in urban wetlands viable and offered a natural wastewater treatment system. Without the circulation of clean water, crops now need more pesticides to grow. Farmers take on debt to cover these costs, increasing their financial risk as the contribution that their morning glory farming makes to municipal wastewater treatment goes unrecognized and, in fact, is slowly coming to an end.

Whereas the urbanization of Phnom Penh has created diverse economic opportunities, the sand industry likely contributes to growing inequalities that impede broader development

goals. The pattern of urban expansion has been focused on wealth creation for a minority. From a public health perspective, the loss of wetlands as a natural wastewater treatment system will trigger serious health consequences. Yet, any alternative solution will be costly to build and maintain; an irony given that the current system of relying on natural wetlands achieves such treatment for free while further providing nourishing food for the city and sustaining urban morning glory farmer livelihoods.

RECOMMENDATIONS

- ▶ Advocate for better working conditions of sand workers, including written contracts, monthly minimum wage, and maximum working hours per day.
- ▶ Ensure adequate compensation in cases where sand infill impacts urban farming livelihoods.
- ▶ Recognize the important functions of wetland ecosystems in waste management and urban agriculture livelihoods, and stop further infill projects in and around Phnom Penh.
- ▶ Work towards a system of transparent sand governance: the 2019 UNEP *Sand and Sustainability* report provides an excellent starting point.
- ▶ Deliver urban policy that fosters environmentally sound, socially inclusive growth.

1 United Nations Development Program (UNEP). (2019). *Sand and Sustainability: Finding New Solutions for Environmental Governance of Global Sand Resources*. United Nations Development Program (GRID-Geneva, UNEP, Geneva).

2 Beiser, V. (2019). *The world in a grain: The story of sand and how it transformed civilization*. Riverhead Books.

3 Lamb, V., Marschke, M., & Rigg, J. (2019). Trading Sand, Undermining Lives: Omitted Livelihoods in the Global Trade in Sand. *Annals of the American Association of Geographers*, 109(5), 1511-1528.