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VIEWPOINT

Shrimp and coastal adaptation: on the politics of climate justice

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Strategies for climate change adaptation are contingent on normative analyses of ideal development outcomes and possible futures. Competing visions for the future thus result in adaptation programmes that benefit some while disadvantaging others. In coastal Bangladesh, shrimp aquaculture provides an example of one such adaptation strategy with contested unequal outcomes. Focusing on the impacts of adaptation on the poorest and most vulnerable reduces the risk of negative impacts on the most structural disadvantaged. Attention to power imbalances, as opposed to technical solutions, can help ensure more equitable outcomes of adaptation measures.

Keywords: adaptation; development; South Asia; aquaculture; political economy

In coastal Bangladesh, the conversion of agricultural lands for commercial shrimp aquaculture has emerged as a key strategy advanced by donors and development agencies for climate change adaptation.¹ As their logic would have it, this conversion transforms the hazards of growing coastal vulnerability and rising soil salinity into an opportunity for market growth and export-led development.² Thus, proposals for shrimp aquaculture as climate change adaptation exemplify a broader vision for technical solutions to the social and ecological crisis of climate change facing this region (Lewis, 2010). Yet, the conversion of agricultural land for shrimp cultivation predates the movement towards climate change adaptation: between 1980 and 2014, the land being used for shrimp aquaculture in this region expanded more than tenfold (Abdullah, Myers, Stacey, Zander, & Garnett, 2016). Shrimp aquaculture has also itself been implicated in the widespread displacement of many of the most vulnerable members of rural communities in the coastal zone,³ while delivering economic benefits to the least vulnerable (Paprocki & Cons, 2014). In this sense, it also illuminates the broader consequences of adaptation strategies which privilege technical solutions over those concerned primarily with a social analysis of potential transformations (Bassett & Fogelman, 2013). Shrimp aquaculture thus offers a significant example of how such a social analysis might suggest divergent approaches to understanding the

science of and response to global environmental change (Castree et al., 2014).

The IPCC Fifth Assessment Report chapter on the Economics of adaptation begins with the following statement: ‘In the presence of limited resources and a range of objectives, adaptation strategy choices involve trade-offs among multiple policy goals’ (Chambwera et al., 2014, p. 948). While the trade-offs between approaches centred on mitigation and adaptation have been much debated, differences among approaches to evaluating what makes for successful adaptation, and for whom, have been less discussed (Adger, Paavola, & Huq, 2006). Equally salient as debates over who will pay for adaptation (and how) (Ciplet, Roberts, & Khan, 2013) are questions of how these funds are spent, and the kinds of social transformations that they may entail.

Climate change adaptation involves a normative process of imagining what the future will look like, and then working towards that vision, given particular constraints. Indeed, there are many possible visions, their implications are radically different, and impacts are heterogeneous among individuals and communities of different classes, genders, and geographic locations. What constitutes an adaptation strategy for some may result in distress and displacement for others. Indeed, Juhola, Glaas, Linnér, and Neset (2016) explain that the very task of delineating the difference between adaptation and

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maladaptation is hampered by the subjective nature of the analysis of either. Technical solutions to climate change adaptation which do not explicitly address this heterogeneity of impacts among adaptation interventions risk exacerbating existing disparities.

Shrimp farming in coastal regions of Bangladesh is an important example of such adaptation possibilities with contested outcomes. Like many other areas confronted with sea-level rise, Bangladesh's southwestern coastal region is threatened by increasing soil salinity and the erosion of land and protective embankments. Though climate change is not the exclusive cause of these transformations, the outcomes and responses are linked. Among many options for addressing these concerns are to convert lands that have historically been used to cultivate rice and other crops into large ponds for growing shrimp, which is processed and exported primarily to Europe and the United States.

However, the benefits of commercial shrimp production are not shared among all members of these communities equally. The majority of profits are earned by a small percentage of large absentee landholders, and by urban-based processing factory owners (Adnan, 2013; Paprocki & Cons, 2014). The salination of agricultural soils through the intrusion of saline water used in shrimp ponds has its own environmental consequences and compromises the fertility of the soil for ongoing and future agricultural cultivation (Ali, 2006; Hossain, Dearing, Rahman, & Salehin, 2016). Moreover, the extremely low amount of labour required for shrimp production relative to rice farming causes a labour surplus that results in displacement from agricultural livelihoods, forcing many landless labourers and former sharecroppers to move to cities in search of work (Paprocki & Cons, 2014). New employment generated by the expanding shrimp industry is limited, and primarily based in processing factories located in urban areas. Thus, substantial rural populations are displaced from their homes in the absence of alternative rural livelihoods. While benefits may be derived by wealthier residents and the national balance-of-trade, the poorest (those who are most vulnerable to ecological change in the first place), suffer disproportionately (Belton, 2016). As a result, there is significant opposition to shrimp aquaculture among social movement groups and other local residents, who see it as a threat to their well-being and their continued habitation of this region (Adnan, 2013; Belton, 2016; Paprocki & Cons, 2014).

The debate over commercial shrimp farming in Bangladesh throws two perspectives on its use as a climate change adaptation strategy into stark relief. One frame proposes that it is an ideal adaptation strategy, suggesting that social benefits arise from GDP growth through the expansion of export markets, turning the ecological risks of sea-level rise and salination into an opportunity (Sovacool & Linnér, 2016). The other frame, which highlights the

pervasive negative social and ecological impacts of shrimp farming, suggests that the expansion of shrimp aquaculture should not be regarded as an effective adaptation strategy due to its disproportionately negative impacts among the poorest members of coastal communities.

The case of shrimp aquaculture highlights the ways in which understandings of climate change, responses to it, and possible futures in the face of it, are shaped by socio-cultural relations of power (Barnes & Dove, 2015). The future of Bangladesh's coastal region and its residents will be shaped not only by climate change, but also by climate change adaptation. The impacts of these interventions are contingent on their sensitivity to power imbalances. Where technical adaptation strategies neglect analysis of such inequalities, they risk magnifying them. The value of possible adaptation strategies should be assessed in relation to precisely this concern: their impact on existing socioeconomic disparities, and benefits to the poorest and most vulnerable.

These competing adaptation frames illustrate the key dilemmas at the heart of climate justice. How do power and equity shape the ability to adapt as well as the ability to determine what the future should look like? The normativity of climate change adaptation proposes that an effective adaptation should help some people. However, even as some may benefit from certain adaptation strategies, all solutions will be bad solutions for some people. Conversations about climate change need to address these discrepancies directly, or run the risk of perpetuating inequalities which have made so many vulnerable to the impacts of climate change in the first place. When it comes to climate justice, from coastal Bangladesh to downtown Manhattan and beyond (Wachsmuth, Cohen, & Angelo, 2016), adaptation measures which do not first and foremost address power and equity are part of the problem, not the solution.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1. The expansion of commercial shrimp production has been promoted by most foreign donors in Bangladesh, while the first major program in the 1980s was supported by the World Bank and the UNDP (Adnan, 2013).
2. Frozen shrimp is Bangladesh's second largest export after garments.
3. Figures indicating the magnitude of dispossession are elusive; however, due to the difficulties of cultivating shrimp and rice together (Belton, 2016), this transition has far-reaching effects. Local farmers estimate that the labour requirements for shrimp cultivation are somewhere between 90% and 99% less than those of rice cultivation, resulting in rampant displacement of landless community members

who were previously dependent on sharecropping and agricultural day labour.

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