Chapter 9
Concluding Reflections: Towards Alternative Peri-Urban Futures?

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9.1 Introduction

This book represents the output of various research initiatives and projects that share a growing concern about urban expansion and the multiple ways in which it influences the city's surroundings, turning them into peri-urban and, ultimately, urban spaces. There are several good reasons for paying specific attention to the peri-urban. The past and current pace and trends of urbanization in South Asia — and more specifically the countries that feature in this book, Bangladesh, India and Nepal— foretell patterns of urban expansion that will deeply influence currently rural areas and populations. As an important dimension of this, the intensified exploitation of peri-urban natural resources like land, surface water and groundwater, and forests threatens the lives and livelihoods of peri-urban populations. As Swyngedouw and Kaika (2014, p.469) have argued, these "assemblages of capital-natures-cities-people", stretching far beyond the city itself, "retrace the socio-spatial choreographies of the flows of water, waste, food, etc., rearticulate patterns of control and access along class, gender and ethnic lines, and reconfigure maps of entitlement and exclusion". Despite all this, there is a strong tendency to approach these urbanization-related processes from an ecological modernization perspective, in which the city is a modern, sustainable and developmental win-win solution to the world's problems. Urban political ecology perspectives often show an urban focus as well, in which the metabolization of nature in urbanization processes is causally linked to the structural forces of capitalism and neoliberalism, but often not

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researched from a peri-urban perspective. Hence, there is a need to pay attention to what these processes actually mean "on the ground" and how they are perceived and acted upon by people situated in specific peri-urban settings.

Within this general problematic of the peri-urban, our focus in this book was peri-urban water security, a topic that is receiving growing attention in South Asia and elsewhere. Important points of departure for researching water security are the need for an interdisciplinary approach rather than a disciplinary techno-managerial conceptualization of "scarcity", recognition of its situated, social and relational character, as well as the different experiences with and meanings given to water security. The dynamic peri-urban context requires research approaches to water security that take into account its emergence and fluidity, its ongoing production and reproduction in socio-natural transformations characterized by power differences, inequalities and in- and exclusions, creating multiple water securities and insecurities (see Boelens & Seemann, 2014; Lankford et al., 2013; Zeitoun et al., 2016).

In the remaining part of this chapter we reflect on the main findings from the various contributions to this book, all against the background of the wider debates and scientific insights on urbanization and water security. In the next section we summarize the main findings. Following this, we present a short reflection on peri-urban futures and the role of research and action in attaining them.

9.2 Summarizing the Main Findings

The chapters of this book are illustrations of various dimensions and manifestations of peri-urban water (in-)security, researched from various perspectives and representing different forms of engagement with different scientific and societal objectives in mind. They show the diversity and complexity of water security issues in the various case study locations, as well as their embeddedness in highly dynamic social, economic and other contexts and linkages with the wider urbanizing process. Multiple interrelated processes come together in the peri-urban: expansion of the resource needs and the growing ecological "footprint" of cities, resulting in intensified peri-urban resource exploitation and growing peri-urban environmental problems; an uprooting of existing livelihoods and lifestyles (from rural and agriculture-based towards urban and mainly non-agricultural), a process with both winners and losers; migration flows and other social-demographic changes; capitalist economic agendas and policies, with the state as a facilitator of global growth-based enterprise; and, last but not least, a changing climate.

The examples of these insecurities are manifold. Flows of water into cities to meet growing urban water demands are changing peri-urban water rights, water control and access, as well as water availability (e.g. the drinking water canals discussed in Chap. 6, and commercial water provision through tankers and groundwater in Chaps. 5 and 8). Return flows of wastewater or disposal of solid waste in peri-urban water bodies have become a major environmental threat to peri-urban

water security (see its linkages with lakes and wetlands in Chap. 2, and its role in conflicts around gate operation in Chap. 7). At the same time, they are sometimes seen —and used— as an opportunity for adaptation of peri-urban agriculture and aquaculture to changing peri-urban conditions (e.g. Chaps. 2 and 8) and to a changing climate (Chap. 6). Massive migration into peri-urban spaces, the emergence of new markets for agricultural produce and new water needs change locally existing water rights, forms of management, functions and uses of water (see the case of surface irrigation in Kathmandu Valley; Chap. 3). In the socio-economic mix of global capitalism and local hierarchy and patriarchy of the ready-made garment industry, the challenges experienced by women in securing a living place with secure access to domestic water are huge, in sharp contrast to optimistic assumptions of their "empowerment" (Chap. 4).

Above all, the chapters of this book show how peri-urban water users are continuously and creatively engaging with the multiple water-related challenges emerging in their life-worlds. The inhabitants of peri-urban spaces are far from passive onlookers, but actively try to come to terms with changing water security, devise solutions and look for opportunities (see Long, 2001). They adapt their agricultural, aquacultural and other water-based livelihoods, explore the opportunities provided by new infrastructure (such as wastewater canals) and investments in new water technology (e.g. groundwater pumping devices; drip and sprinkler irrigation; wastewater appropriation and pumping devices). They try to institutionalize new practices of water use around canals, and adapt their cropping choices and schedules to changing water security. They organize in new ways to seek forms of government or project support for investments, awareness raising and capacity building. They explore new urban markets for agricultural produce (and for products like bottled water or bricks, for that matter; all activities that may further increase water scarcity and competition). They engage in conflict negotiation and resolution, and adapt their water use practices to avoid conflicts in conflict-prone situations of water competition. The mediation of peri-urban water insecurity is a socio-technical process, in which both technologies and institutions are mobilized (see Roth & Vincent, 2013).

Such adaptive solutions, however, are not accessible for all; win-wins hardly exist in real life. As several contributions have shown, urbanization creates opportunities for some, but also reproduces or worsens existing forms of social differentiation, inequalities and related water insecurities. It crucially changes existing water control, rights and access, and does so in unequal ways, in the process creating multiple in- and exclusions (Bartels et al., 2020). In Kathmandu Valley (Chap. 3), for instance, dependence on an increasingly unreliable canal irrigation system can be reduced by using alternative technologies, such as groundwater pumps. Such solutions, however, are only available to those who can afford the investments in this technology (or other, water-saving, alternatives). Massive pumping may in the long run reduce groundwater levels and threaten sustainability of groundwater use, creating new inequalities between those who can invest in more pumping power and those who cannot (see also Shrestha, 2019a).

Institutionally, the peri-urban is a hybrid space characterized by problems of existence of policy gaps, overlaps, ambivalences, contradictions and conflicts between state-initiated institutional arrangements that are either "urban" or "rural", and local ones that are embedded in specific situated ways of governing, managing and using resources, defining rights and restrictions, jurisdictions and authorities. The resulting competing frameworks, contradictions and gaps in peri-urban governance, combined with the intensified exploitation of resources by a variety of actors with often competing interests, make the exploitation of important resources in these spaces conflict-prone. This legal-institutional complexity makes for a property landscape characterized by "fuzziness" of property relations, allowing for speculative claiming of access and rights to resources, either actively supported or silently condoned by government administrations and agencies that refrain from actively intervening. Several chapters noted the problem of the disappearing or degrading commons under various processes of encroachment and privatization, and its consequences for people depending on them (see also Narain & Vij, 2016).

Developments in the peri-urban space certainly increase the risk of resource-related conflicts. On the basis of the research reported in this book, however, there is no evidence to support simplistic assumptions about a direct scarcity - conflict causality. The chapters that explicitly dealt with issues of conflict and cooperation are, of course, far from conclusive. Though resource-related conflicts occur regularly, they seem to seldom turn violent and cannot be causally related to an abstract notion of growing "scarcity". Some observations seem to be possible. In several cases discussed, the relatively gradual processes of change for which it may be difficult to directly allocate responsibility locally may be part of the explanation for the fact that people tend to seek adaptive options rather than engaging in conflicts. In more sensitive cases, where the effects of people's actions are directly felt, conflict avoidance may be preferred in order to maintain good relationships and decrease dependence on a contested water source. In the Nepal case (Chap. 3), for instance, human-induced water scarcity does not lead to conflict but to more investments in technology, dug wells and borewells. Hence more intensive water use does not necessarily lead to more conflict. In the case of gate operation in Bangladesh (Chap. 7), the authors note that people are losing interest in negotiation and dialogue about the gate operation because the river water quality has degraded to such an extent that it is rapidly becoming useless.

As for cooperation, several cases show the important role of locally existing norms, rule systems and practices in defending existing water rights (even if with limited success only, such as in Nepal) and in establishing and strengthening new forms of collective action, including defining rights and responsibilities (the case of wastewater canals in India). Last but not least — and in contrast with the simplistic conflict-cooperation dichotomy, which does not grasp the multiple dimensions, layers and nuances of both — much cooperation is invisible but exists in the networks of interest and power that normalize existing relations of power and perpetuate forms of dependence, exploitation, and inequalities. The research presented in this book suggests that conflicts and co-operation do not exist as binaries; rather there exists a continuum representing varying degrees and forms of co-operation and

conflict. Other than conflict or co-operation, there could be situations of conflicts of interest or forced co-operation (see also Vij et al., 2018). Power relations may prevent the escalation of conflicts of interest into explicit conflicts. The dependence of sharecroppers on landowners and of water users on providers of water, for instance, are relationships and mechanisms that dampen conflict.

9.3 Peri-Urban Futures: From Local Struggles to Transformative Changes?

9.3.1 Engaging with the Peri-Urban: Rearguard Action?

Several chapters show specific intervention-based concerns with the peri-urban and the management and protection of its resources for the benefit of peri-urban populations. Are such concerns for peri-urban land and water rights, irrigation canals, commons and livelihoods more than fighting a rearguard struggle, just before the bulldozers and concrete mixers definitively roll out the city? Take, for instance, local engagement with the preservation of irrigation canals in Kathmandu Valley (Chap. 3). It is highly probable that such engagement will not save this canal or others, nor the related livelihoods and agricultural practices, from the waves of urban expansion that roll on and face few policy restrictions. Just a few more years, and these peri-urban spaces will probably have become fully urbanized. In a similar way, the authors of Chap. 2 (Mundoli et al.) plead for a change in perception with regard to waste-water linkages between cities and their peri-urban spaces and water. But to what extent does this contribute to the implementation of an ecological modernization-style urban sustainability agenda that comes close to what Kaika (2017, p.98) has called "immunological practices" — combating the symptoms but not the deeper causes of the problem?

Every form of engagement raises questions as to which perspectives, approaches and activities stand a chance of contributing to socially, politically and environmentally sustainable peri-urban transformations. What is realistically possible and worth struggling for, and how? How can "the right to the peri-urban" be defended in a socially, politically and environmentally meaningful way? Should such struggles aim for quickly achievable small improvements in local issues, or link up to bigger concerns, networks and movements? How can local peri-urban engagement and initiatives be scaled up and connect to broader initiatives or social movements on socio-environmental and political issues of urbanization? In short: how can peri-urban rearguard action become part of a truly transformative social-environmental political movement that transcends the artificial boundaries of the urban, the peri-urban and the rural? We do not pretend to have the answers to these question, but will shortly reflect on a number of research and action needs for the peri-urban.

9.3.2 Research Needs for the Peri-Urban Space

What kind of alternative peri-urban futures are realistically imaginable, and what kinds of scientific engagement are needed to take steps in realizing them? There is a growing scientific, NGO and broader societal engagement with peri-urban issues in all three countries discussed in this book. Governments are increasingly made aware of the specific characteristics and problems of the peri-urban, and in some cases show growing recognition of the need to engage with these problems. Overall, however, governmental engagement (or rather non-engagement) with the peri-urban seems to be part of the problem rather than of the solution. As discussed above, we should not have unrealistic expectations about the role of new administrative divisions, laws and policies. Yet a key step would be a political-administrative recognition of the specifically peri-urban dimensions of urbanization, their influences on peri-urban livelihoods and natural resources, and the need for governance approaches that take these peri-urban characteristics as a point of departure for rethinking the urban-rural dichotomies that form the usual basis of administrative divisions, policies and forms of legal regulation. Making the peri-urban visible as a fluid, hybrid and institutionally complex space with specific problems that need policy attention remains crucial (see Allen, 2003; Allen et al., 2006). There is a clear role for scientific engagement and active science-policy interaction here. It is important, however, that scientists and researchers remain critical of the ways in which relevant and potentially transformative scientific developments, insights and concepts are turned into policy buzzwords, instruments and objectives.

An example of this is the relationship between scientific research and the changing agendas and priorities of development policies. Several authors (e.g. Arabindoo, 2009; Kaika, 2017) have noted the important role of development funding and global development institutions in setting agendas and priorities for research and policy on themes like urbanization, peri-urban research and climate-related research. Kaika (2017) mentions the focus on "safe, resilient, sustainable and inclusive cities" that has become part of the current urban Sustainable Development Goals agenda. Like "sustainability", "resilience" has become a popular buzzword in the development policy world, as part of what Taylor (2014) has called "the holy trinity" of climate change adaptation. Although this is not the place to go into the criticism of the superficial and depoliticizing uses of concepts like resilience (see e.g. Béné et al., 2014; Boyden & Cooper, 2007; Taylor, 2014), important lessons can be learned from the ways in which such concepts are taken up and are given meaning (and power) as they "travel" through the development policy world. Much more critical thinking about such developmental trends and fashions is needed on the part of research funders, scientific institutions and researchers, to put into perspective its uses and claims of its relevance, and criticize its depoliticizing effects on debates about sustainability, climate change and urbanization, including the peri-urban (see Shrestha, 2019a, b).

Urban political ecology has yielded extremely important insights on urbanization and the socially unequal metabolic flows that interconnect multiple scales and

spaces far beyond cities themselves. It has also criticized the techno-managerial and post-political character of market-led sustainability approaches (Cook & Swyngedouw, 2012; Swyngedouw & Heynen, 2003). However, as discussed above, even in this literature there is an urban bias (Angelo & Wachsmuth, 2014, 2020), while local peri-urban manifestations, processes and mechanisms of urban – peri-urban metabolic flows, researched as "assemblages of capital-natures-cities-people" (Swyngedouw & Kaika, 2014) remain a black box. Future research can fill a gap here by becoming explicitly ethnographic, studying in an in-depth way the multiple dimensions of peri-urban social-environmental changes as situated in specific socio-economic, cultural and other contexts in which these changes are experienced and acted upon in multiple and unequal ways (see Shrestha, 2019a; Webster, 2011).

However, in light of the many insights from urban political ecology on the scalar relationships between urbanization and the metabolic processes in the peri-urban space, research should also move beyond the local and, where research links up with action, beyond consensus-based institutional design approaches. It should trace the linkages and flows of urbanization by "studying up", crossing spatial and other boundaries and actively engaging with the urban-based actors, powers and policies that propagate specific forms of urban expansion, economic growth and resource exploitation beyond the city, in short: the political-economic processes that fuel the engine of urban expansion and lead to contestations between state and corporate power on one hand, and differently affected communities on the other (Shatkin, 2019). Instead of dealing with such contestations through the usual consensus-building approaches (e.g. stakeholder platforms, participation, co-creation), Kaika (2017, p.99) proposes to take issues of dissensus as "living indicators" and "signposts" for further action research and political engagement.

Last but not least, research should put much more effort at in-depth research on resource (re-)allocations, property transfers and property transformations that are so deeply influencing the peri-urban space. Degradation and disappearance of the commons, for instance, is frequently mentioned as an important impact of urbanization, but in-depth studies on the processes and mechanisms through which such transformations can take place are scarce. Aside from the fact that such transformations are not unique to the peri-urban space, they are also rooted in wider socio-environmental transformations that may throw light on causes of their degradation and disappearance. The commons has become an ideological concept with multiple meanings, but what is "the commons" in specific socio-historical and resource use contexts? What processes of claiming and counter-claiming are developing around commons? How are property relations defined and redefined, and turned into use and management practices? How are commons given new meaning? What has disappeared, and why? What do we want the commons to be(come)? It is only through such understandings of the commons that we can start using the commons concept as a social imaginery (Wagner, 2012; see Bakker, 2010) and envisioning alternative peri-urban commons futures.

9.3.3 Research, Policy and Action

As brought out by all contributions in this volume, the peri-urban is a complex space to intervene. Approaches to intervention are based on the narrative that there is a need to straddle the rural-urban dichotomy in development see also Mehta and Karpouzoglou (2015). This needs overcoming the divides created between urban planning and rural development agencies among the institutions of the state. While this is important given the fluid, transitory nature of peri-urban contexts, it is simplistic to rely only on formal state approaches to address peri-urban challenges. As some contributions in this volume show, interventions in the peri-urban space need strong coalitions among critical academics, civil society organizations (CSOs), citizens and state agencies, combining research with action. CSOs active in the field have a strong grounding in local contexts and an ability to engage with and mobilise local populations. Academics and researchers possess the skills for scientific research and documentation. This academic-CSO nexus is necessary to reorient state agencies, create mutual accountability relationships between peri-urban populations and state agencies, and sensitize the state to seriously addressing peri-urban issues. At the same time, CSOs must continue to play a role in providing support to peri-urban populations, getting them into dialogue with state agencies, building their capacity to demand better and improved services, and helping them to defend their rights where needed.

While the literature on gender and water has grown well in recent decades, little is known about changing gender relations around water in peri-urban spaces. This constitutes another area for further research and action. Given the social heterogeneity in peri-urban contexts, intersectionality of gender with other axes of social differentiation can be very sharp indeed and merits further investigation, in relation to agendas for action to deal with such forms of social differentiation. Given the gender-based division of labor around collection of water and other water-related tasks, this needs specific attention in action-research concerning the water-related transformations of the peri-urban and changing water security.

Another important domain in which research and action should combine is in uncovering the vulnerabilities that are created or reproduced by urbanization processes. These could become the basis for sustained advocacy, political action and policy reforms, in which linkages are sought with, for instance, water justice and environmental justice movements that are active at higher levels and may connect urban and peri-urban issues. Although peri-urban water security is always situated and contextual, we see a need here for initiatives to protect the peri-urban to engage with supra-local movements and thus to create forms of engagement that transcend the boundaries of localised "particularisms" (Harvey, 1996; see Walker, 2009). Such movements could also play a role in linking problems of peri-urban water security and public water provision to (hydraulic) citizenship (see Anand, 2011; Gandy, 2004). Finally, such a broader movement linking peri-urban and urban issues can contribute to exposing the fallacies and downsides of the techno-managerial "smart cities" ideology.

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