Peri-urbanization, Land Use Change and Water security: A New Trigger for Water Conflicts?

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Abstract

Urbanization processes involve the appropriation of land and water resources from the peripheral regions. Thus some individuals and groups lose access to these resources to support urban expansion. Since water access is often tied to land ownership, the acquisition of land for urban expansion compromises periurban water security. This process creates a potential for water conflicts; these conflicts may take place between urban and periurban water users, between periurban water users and the state or among periurban water users. Understanding potential causes of conflict and devising institutions to reconcile divergent interests could be instrumental in promoting periurban water security.

Keywords

Urbanization, water security, ecological foot-print, Gurgaon, governance

Urbanization has been a key demographic trend in India in the past and current century. In particular, the nature of urbanization processes has undergone a change since the neo-liberal reforms of 1991, with more space being created for private enterprise and real estate (Vij & Narain, 2016, in press). Several Indian cities have seen a steady growth, sustained by a real estate boom and the rapid growth of outsourcing and other services.

Peri-urbanization is a term that is often used to describe a process of transition from rural to urban areas, that characterizes the growth of urban agglomerations. The word peri-urban denotes a conceptual construct to look at the relationship between rural and urban areas and the transforming flows of goods, services and resources between villages and urban centres (Allen, 2003; Narain, 2009a, 2009b). It is often understood to be a contested space in which claimants over land and water steadily multiply, creating a potential for conflict (Douglas, 2006; Dupont, 2007). Peri-urban contexts are characterized by rapid transition, land use change and a growing heterogeneity of interests. The claimants over scarce land and water resources increase. Inherent, therefore, are processes in which some people or groups of people lose land and water resources to others. This raises questions about justice and equity (Narain, 2014); urban expansion is based on implicit assumptions about who modern cities are meant for.

Gurgaon, in the north-western Indian state of Haryana, is a good example of this process, and its growth has been accompanied by a systematic process of acquisition of land and water from the peripheral areas, creating pockets of deprivation for peri-urban communities. The population of Gurgaon stood at 1.5 million in 2011 against 0.8 million in 2001—this indicates a population growth of 87.5 per cent in a decade (Census of India, 2001, 2011); as a result, a high demand for better utility services has been created. A real estate boom since the 1990s has been accompanied by a process of land use change wherein land has been acquired by the state as well as by real estate and put to alternative uses (Narain, 2009a, 2009b; Vij & Narain, 2016, in press).

At present, there is tremendous stress on the city's groundwater resources. The city's groundwater table level

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is depleting at a rate of 1 metre (m) per year (*The Times of India*, 2014). The level of the city's groundwater table has fallen below 33 m, though in the neighbouring areas of Sohna and Farrukhnagar, the level still hovers around 22.79 m and 17.69 m respectively. Over the next seven years, the city's groundwater level is expected to fall to about 40 m; by 2030, the city's groundwater levels may plummet to 50 m. This fall in the water table is attributed to the mushrooming of hundreds of multinational corporations resulting in an increase in population over the last two decades. About 250 of the fortune 500 companies are located in Gurgaon; and there are about 45 shopping malls and hundreds of residential condominiums. It is estimated that there are about 30,000 groundwater extracting units drawing 70–230 million litres of water every day. In contrast, the city has only about 1,000 rainwater harvesting units that recharge water for just 20–25 days in a year.

The steady fall in the city's groundwater tables has implications for water security of the small and marginal farmers who lose out in the race for groundwater. In many peripheral villages, with the mushrooming of farmhouses of the urban elite, local residents have lost access to groundwater as they are unable to afford the high costs of extraction (Narain, 2014). Thus, they now depend on rain-fed agriculture or just take on one crop instead of two.

This is the outcome of a legal and institutional framework in which groundwater access is tied to landownership. As the urban elite move to the periphery of the city and acquire land there, they are also able to extract groundwater using expensive submersible pump sets that local residents cannot afford. The impact of this trend has been aggravated by a decline in rainfall over the years—a fact often reported during research and fieldwork conducted by the author.

Though residents of modern private condominiums receive water supply from Haryana Urban Development Authority (HUDA), it falls short, especially during peak summer months. Due to this fact, many city residents during the peak summer months are forced to buy water tankers at steep prices from the market or install borewells to extract groundwater. Again, this compromises the water security of rural populations, who lose access to water as it is transported to meet the requirements of a steadily growing urban population.

Current policy approaches have done little to arrest this trend. A High Court order in 2012 had prohibited extraction of groundwater by setting up borewells for construction or residential purposes, allowing only civic agencies to withdraw water. However, illegal groundwater extraction is known to be rampant. The rapid expansion of real estate beyond the capacity of state agencies to meet the new demands is considered responsible for the current water stress.

With the failure of legal approaches, several other responses are advocated by different segments of the society. One response from civil society organizations has been a growing demand to build water banks. An alternative perception, common among authorities, is that the problem lies not necessarily with increased water withdrawals, but the failure to recharge groundwater adequately. This narrative is likely to tilt the focus of policy on supply augmentation, for instance, through recharge measures, rather than put in place measures for effective demand management that may be needed in the long term. Though there is growing involvement of civil society in local governance processes, exemplified, for instance, through the rising voice of Resident Welfare Associations (RWAs), their concern seems to have been on their water security, rather than that of the peripheral areas that have lost land and water to support them!

This process of the acquisition of land and water from the peripheral regions creates a potential for conflict. Research has reported growing dissent among landowners in peri-urban Gurgaon—in village Basai—over the low prices received for their land acquired by the state; in fact, the rates offered were well below the market price (Narain, 2009a). Compensations were delayed and often received in small instalments; this prevented the landowners from acquiring similar plots of land elsewhere. Worst affected were tenants and sharecroppers who received no compensation in the process. Though there has been wide debate in the media on the land acquisition issue, attention has focused mainly on compensations to landowners; little attention has been paid to the plight of tenants and sharecroppers who are vulnerable to the impacts of land acquisition as they have little by way of private land or alternative assets to bank upon. Likewise, the implications of the land acquisition process for peri-urban water security have received scant attention in the popular discourse on urbanization and land acquisition. When lands are acquired for urban expansion, people also lose access to water sources located on those lands.

Though stress on groundwater is growing, as described earlier, conflicts over groundwater are rare. This has perhaps to do with the invisible nature of the resource and the lack of physically visible and enforceable water rights. However, rural–urban water conflicts have begun to emerge around surface water. Peri-urban farmers made a breach in the National Capital Region (NCR) channel that was built to bring water to the city (Narain, 2009b). The NCR channel supplements water being transported to meet the requirements of the growing city through the Gurgaon water supply channel, that provides water to the Basai

water treatment plant—the major supplier of water to the Gurgaon city. In March 2008, farmers living in villages along this canal made a breach in the canal to divert water to their agricultural fields.

These canals that are built to bring water from the countryside to the city are the physical embodiments of rural–urban resource transfer. Acts such as making a breach in the canal are the concrete manifestations of the conflicts that characterize rural–urban settings. These are the more visible forms of conflict around water in peri-urban contexts.

Another aspect of conflict around water is in the context of common property resources, auctioned to non-residents of the village. An important feature of peri-urban contexts is that locus of control over resources often shifts to outside the village, to residents of nearby towns who may take part in the auction of the village resources. During his field research in an International Development Research Centre (IDRC)-supported project on peri-urban water security, Vij (2015) reported dissent amongst residents of the village Budheda over the unfair practices resorted to by the village panchayat to auction the village's ponds to residents of the neighbouring village of Nuh. Local power structures allowed the village elite to evade accountability to the members of the village community even as the locus of control over village resources moved to outside the village—as often happens in peri-urban contexts.

As cities like Gurgaon continue to grow, sustained by narratives of the glory of millennium cities, issues of peri-urban water security will continue to acquire centre stage. These issues manifest in the acquisition of rural land and water resources to augment urban water supply, the growing competition over groundwater that deprives access to the resources for local populations, the movement of water through water tankers and the erosion of the urban commons. These issues of peri-urban water security need to be approached from a perspective of justice and equity, asking questions about who modern cities are meant for and whose commons are being acquired to build them. An understanding of issues of peri-urban water security needs to inform action research aimed at overcoming the peri-urban blindness of policymakers and urban planners, steer away from the rural–urban dichotomy in development and mobilize communities to improve their water security.

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