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Mobilizing rurality in peri-urban water contestation: A case from Dhulikhel, a lower Himalaya town of Nepal

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Introduction

1 Following global trends, the Himalayan region is rapidly urbanizing (Rathore *et al.*, 2024). Small towns in Nepal are growing fast and spreading over the surrounding countryside creating extensive peri-urban zones. In this paper, we discuss how peri-urban areas are facing growing pressures to meet surging water demands (Narain and Roth, 2022). Emerging towns are witnessing population growth by up to 5% per annum (Muzzini and Aparicio, 2013), while water supply systems are failing to meet the growing water needs for households and industrial activities (Pandey and Bajracharya, 2017; Raina, 2017). In such emerging peri-urban areas, rural and urban functions are increasingly competing for water. As urbanization spreads upwards from the valley bottoms, upstream rural communities are depicted as sitting on abundant water resources while downstream urban areas are facing scarcity (Kovacs *et al.*, 2019). Expanding downstream towns are looking to upstream water sources in rural villages to meet their water needs. However, over time, the volume of water in these upstream sources is also decreasing (Adhikari *et al.*, 2021), rendering water sharing between upstream rural and downstream urban users more contested (Devkota *et al.*, 2019). Resultantly, contestations over 'urban water grabbing' are growing and emphasizing rural-urban differences in peri-urban Nepal.

2 In this paper, we examine the different narratives mobilized in contestations between upstream rural and downstream urban users over access to spring water in the lower Himalayan region. We take water contestations as multifaceted engagements between

rural and urban water users, involving critical interaction and occasional conflict, as they compete to establish their right to water. We focus on a case from Dhulikhel, Nepal. As a rapidly growing town in the periphery of Kathmandu with a long history of water-related tensions between upstream and downstream communities, Dhulikhel is exemplary for peri-urban water issues. We examine the nature and dynamics of these contestations and explore what they mean for the definition of the urban and the rural in peri-urban Nepal. We argue that peri-urbanization is a dynamic process shaped not merely by urban expansion, but by the interactions between rural and urban communities and functions. Access to water and water scarcity is a crucial, and one of the most contentious issues shaping the relationships between the urban and the rural in peri-urban areas. The following sections in this paper attempt to understand these local water conflicts in peri-urban areas. First, we explain our analytical framework for peri-urban water access and contestations, then we present our methodological approach. Next, a brief overview of the case study site and the history of the struggle for water access is presented, after which we elaborate on the three different dimensions of rural resistance to water sharing. Finally, in the conclusion, we draw analytical and policy implications of our analysis.

Water issues in peri-urban regions

3 Peri-urban areas are widely defined as areas emerging from a coalescence of rural and urban elements or functions. Peri-urbanization refers to the physical, economic and social processes (Butsch and Heinkel, 2020) through which such mixed places come about. Rooted in the Southeast Asian literature on desakota (McGee, 1991; Ortega, 2020), peri-urbanization in the South is generally associated with unplanned urban expansion in a process of transition towards more formally urban areas (Aguilar, 2008). However, the body of literature on peri-urbanization emphasizes how the interaction between rural and urban functions in the peri-urban area is transforming both sides, leading to a distinctive peri-urban character that defies the neat binary distinction between the rural and the urban (Douglas, 2012; Simon, 2008). Follman (2022) then distinguishes 3 different approaches to the peri-urban: a territorial one, emphasizing the distinctive character of peri-urban territories; a functional one, focusing on the relations and interactions between urban and rural functions and a transitional one, emphasizing peri-urbanization as a process of transformation from rural to urban. In our study of upstream-downstream water contestations in peri-urban Nepal, we will explore how these three perspectives help to disentangle peri-urban water contestations.

4 Urbanization process often exerts significant pressures on natural resources in the nearby rural regions, particularly when cities face shortages of resources like water. Cities then implement water transfer projects from rural to urban. Although these projects quench cities' thirst, they raise significant concerns about sustainability and issues of environmental justice. Hence, flows of water carry in their currents the embodiment of myriad social struggles and contestations (Swyngedouw, 2004). As it flows downhill, water moves across administrative borders, pits upstream against downstream users, and is competed over between different actors, both for its use and for its disposal.

5 Access to and control of water are the object of intense social contestation. ‘Access’ to water which is defined as the ability to derive benefits from water resources. It is mediated by technology, capital, markets, labor, knowledge, identities, and social relations, or their combinations (Ribot and Peluso, 2003). For instance, capital can establish the ability to access and control water resources by financing water infrastructures, while social relations among different actors, institutions and communities facilitate the making of rules and networking for sharing water resources (*ibid.*). In addition, social systems are embedded in biophysical environments which can affect access to water and hence the access to water is affected by an actor’s spatial location along the water flow as well (Langridge *et al.*, 2006).

6 In the Himalayan region, geophysical asymmetries between upstream and downstream water users and the ensuing geopolitical tensions have received significant attention (Akanda, 2012). Nonetheless, institutional relations often override locational asymmetries (Mirhanoglu *et al.*, 2022). Hommes *et al.* (2019) emphasize how water access in peri-urban areas is inherently contested and dynamic. Hence, while it is clear that downstream urban centers face water scarcity more acutely (Ojha *et al.*, 2020; Narain *et al.*, 2023; Pradhanang and Jahan, 2021; Sathre *et al.*, 2022), urban governments often have more political and economic leverage vis-à-vis rural actors in the peri-urban region and mobilize this to counter geophysical inequities and acquire privileged water access (Hommes and Boelens, 2017). Additionally, water access inequalities can also be related to social relations and hierarchies such as across class, caste and gender relations (Fournier, 2014; Bhattarai *et al.*, 2021), thus further complexifying water equity issues in peri-urban areas (Torio *et al.*, 2020).

7 In this paper, we analyze how actors claim water rights. Water rights are defined as the socially sanctioned entitlement to access and use water from particular sources for particular purposes (such as drinking, irrigation, or others). Rights over water can be formalized, in national or international legislation or covenants, but can also be based on tradition or customary rights. Moreover, as rights need to be legitimated in their social environment, they are the object of discursive struggle (Boelens, 2014). Actors claim rights by mobilizing a variety of cultural, institutional, and ecological discourses about water rights and water access (Hommes *et al.*, 2019; Feng *et al.*, 2023). This discursive struggle makes water rights dynamic and context–dependent rather than universalistic, based on specific local sociopolitical and socio-ecological relations (Sultana, 2018; Roth *et al.*, 2014).

8 Our purpose is to understand how in the case of peri-urban Nepal, urban-rural distinctions have played a role in such discursive struggles over water justice. Based on the three perspectives on peri-urbanization, we identify three important dimensions of peri-urban water struggles which result in a re-assertion of the rural as against the urban: a transitional dimension, focusing on changing (peri) urban water use and demand; a territorial one focusing on the administrative subdivision of the peri-urban zone and the assertion of territorial rights, and a functional one, emphasizing rural identities and activities as against urban ones.

9 The transitional perspective focuses on the increasing demand of water across the peri-urban area. Population growth, changing household consumption patterns and expanding economic activities are fueling demand in peri-urban regions, not just in the city center but also in the more peripheral areas (Jain and Korzhenevych, 2022). When water scarcity is felt across the peri-urban area, water transfers towards the urban

center become more contested. The balance between supply and demand is a crucial factor in the evaluation and articulation of water access rights, as are debates about the origins of the changes in supply and the legitimacy of (urban and rural) demand (Hommes *et al.*, 2019).

10 Secondly, administrative and political territorialization plays a key role in the discussions about water access rights. The administrative subdivision of watersheds, in more urban and more rural municipalities, emphasizes rural-urban distinctions in water demands (Matthews and Germain, 2007). Territorial fragmentation is an important aspect of water governance issues, exacerbating the opposition between diverse user perspectives (Hoogesteger *et al.*, 2016). Jurisdictional, territorial and scalar fragmentation creates governance gaps, overlaps and challenges (Bakker and Cook, 2011), which, in contexts of urbanization, can complicate the solution of tensions between urban and rural water users (Punjabi and Johnson, 2019).

11 Finally, a functional perspective focuses on the relationships between the rural and the urban in peri-urban regions. Urban-biased identity politics conveying a discourse of modernity to legitimize water transfers from rural areas (Hommes *et al.*, 2019; Duarte-Abadia and Boelens, 2020), are often met with alternative identity politics aimed at defending rural interests (Boelens, 2014; Dukpa *et al.*, 2019; Feng *et al.*, 2023). Many scholars have argued that local traditional and customary authorities and users have local legitimacy based on the acceptance of their custodianship of communal resources (Brown and Lassie, 2010; Bruce and Knox, 2009 ; Ruddle, 1998). They tend to be the de-facto managers of natural resources even in jurisdictions where state authorities are the de-jure managers (Gautier *et al.*, 2011). Traditional authorities are considered effective and efficient in regulating local resource use (Hirons, 2014), and base themselves on longstanding traditional rights of use to claim preferential access to water (Escate *et al.*, 2022). In peri-urban areas, such identity politics pit 'modern/urban' industries, tourism and consumption against 'traditional/rural' agrarian water uses, thus obfuscating potential alternative arrangements of water justice (Shi *et al.*, 2021). The combination of these three perspectives on water justice claims will reveal how the rural has been re-asserted in peri-urban water struggles in Nepal.

Methodology

12 This paper is based on the first and second authors' engagement with both rural and urban water users, local government representatives, local political leaders and social and environmental activists in Dhulikhel, Nepal. The first author worked in Dhulikhel from 2014 to 2021 under a number of research projects. These included the facilitation of a number of stakeholder dialogues that brought both upstream and downstream water users into a single platform, and six series of urban water forums[1], 34 key informant interviews, 12 focus group discussions, and observing a number of meetings and water-related discussions. Participants in the stakeholder dialogues and urban water forums were the local government representatives, executive members of the community-based water management groups, farmers and water millers[2] from the rural villages who rely on the water flowing through their village for their livelihoods. Similarly, key informants and participants for FGD were purposively selected among the local political leaders, people involved while negotiating for rural–urban water sharing, local activists etc. The second author was part of the reflection and analysis

and facilitating some of the conversations since 2016. These engagements were supplemented by two subsequent fieldworks - first during the end of 2022 until early 2023 and second during early 2024, where we interviewed people and hosted a district-level dialogue on current and future scenarios on rural/urban water sharing in the context of rapid urbanization and environmental change. Further, two authors conducted participant observation and transect walks to observe the latest situation of urban trends and patterns, agriculture and irrigation practices, people's use of water sources etc. These activities were supplemented by a national-level dialogue hosted by a Kathmandu-based research institute called Southasia Institute of Advanced Studies where the first and second authors are associated with.

13 These events, meetings and interviews were audio recorded with interviewees' and interlocutors' prior consent and then transcribed into the text by anonymizing their identity. These were thoroughly reviewed and categorized into different analytical threads. We identified three major aspects of rural/urban water contestations and designed our analysis for this paper. Hence, we bring insights from our own experiences as action researchers in Dhulikhel together with previous diagnostic research that aimed to investigate water insecurity under rapid urbanization and changing climate in small towns.

Prelude: growing water demand, dwindling supply

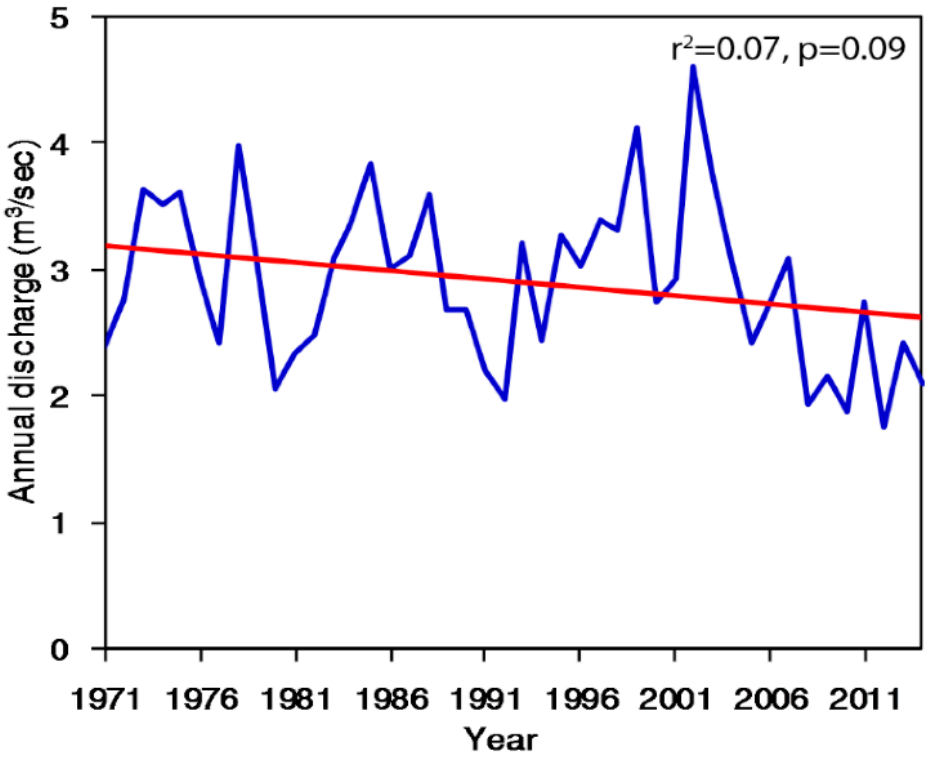
14 Dhulikhel is a popular hill-town situated about 30 km east of Kathmandu – the capital city of Nepal (Fig. 2). It lies in a subtropical climatic zone with temperatures ranging from 0^0C to 26^0C with an average of 20^0C. The average rainfall is 1500 mm with a maximum rainfall of 2044 mm. The valley around Dhulikhel is a peri-urban area of burgeoning towns interspersed with rural villages with agricultural land. Over the last 38 years (1992-2020) forest and agricultural land were reduced by 8.27 sq km while the built-up area has increased by 12.39 sq km in this region (Shrestha *et al.*, 2021). As per the census 2011, 14,283 people lived in Dhulikhel, which increased to 36,183 by 2021. This drastic increase in population is explained by migration from neighboring villages to the town center, but also due to the town's territorial expansion during the nationwide local government restructuring in 2017[3].

15 The urban core of Dhulikhel used to be an important trading center on the ancient commercial route linking Nepal to Tibet. The construction of Araniko Highway[4] in 1965 further boosted its economy. Apart from trade, Dhulikhel also attracts international and domestic tourists. The center of Dhulikhel remains a unique repository of Newari civilization with numerous architectural monuments and art. It has a distinct local identity. The urban expansion of Dhulikhel has produced a peri-urban zone extending beyond its current administrative borders. Apart from drinking water for a growing population, the water demand in Dhulikhel has been boosted by its expanding tourism industry and the establishment of public services like academic and health institutions serving the wider region (Ojha *et al.*, 2020). In an interview, the manager of the Dhulikhel Drinking Water Supply and Sanitation Users Committee shared that there is a demand of 3.9 MLD of water while the supply is only 1.8 MLD. As a result, water supply to households drastically reduced from 24 hours a day to less than 2 hours a day (Devkota *et al.*, 2019).

16 As the local sources within the city were deemed insufficient to supply water to the city dwellers, in 1982 local government authorities from Dhulikhel approached the rural village of Bhumedanda to transfer water from Roshi River - a water source 14 km upstream from the city (Fig. 2). Bhumedanda, with a mere 4,876 inhabitants, is an autonomous municipality in the wider peri-urban area of Dhulikhel. People in this village rely on agriculture and livestock for their livelihoods. With improved connectivity via rural roads to nearby cities, including Kathmandu, people in this village started commercial agriculture producing seasonal vegetables, potatoes, and buffalo milk for urban consumer markets. Some of the households in the village rely on traditional water mills that grind crops for their neighbors in exchange for part of the flour. These agrarian activities rely on the water in the Roshi river that flows through the village, for irrigation, energy for the mills, and drinking water for cattle.

17 While the water collection from the Roshi river was increasing, climate change along with other anthropogenic activities affected the volume of water in the river and its tributaries. The annual river discharge pattern from 1971 to 2014 indicates a gradual decrease in the water flow (Fig. 1). Over the past 44 years, the rate of decrease in the mean annual discharge of the Roshi river amounted to −0.015m3/s/year (Dahal *et al.*, 2018).

Figure 1. Annual water discharge in Roshi river.



Dahal *et al.*, 2018

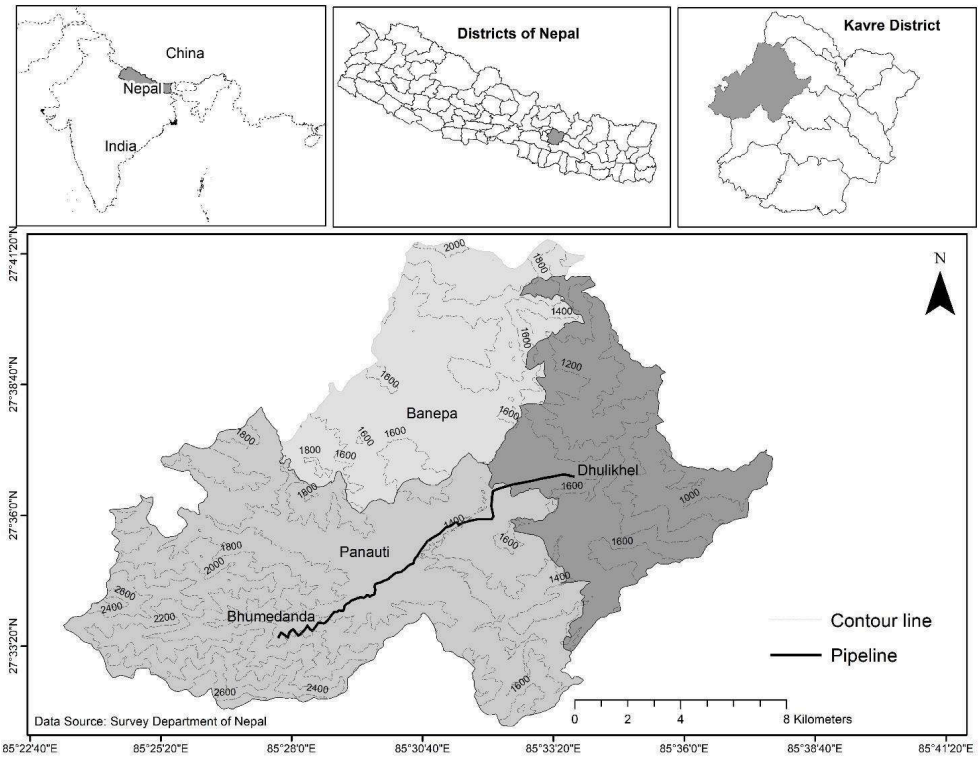
18 The reduction in water flow did not go unnoticed among people living near the river. One of the respondents asserted that "*we could not cross the river during the monsoon (Jun-Aug), however, these days it's not a problem to cross and go back and forth*". Some others recalled the 1981 flood that had swept away the houses and a small school building at

the riverbank but emphasized that they had never experienced an increase in the river flow after that.

Successive attempts to access water from Roshi river

19 Water transfers from Bhumedanda to Dhulikhel developed in 3 phases since the 1980s. On 27 July 1985, leaders from Dhulikhel and Bhumedanda signed a first agreement document under which Dhulikhel was allowed to take water from one of the tributaries of the Roshi river to meet the water deficit of the city. In exchange, Dhulikhel agreed to support Bhumedanda to construct a small bridge over the river and rebuild a school building that was swept away by the 1981 Roshi river flood. Following the agreement, the Dhulikhel water supply project was built in 1992 with technical and financial assistance from the German government. It became the first community-managed water supply system in Nepal as the management and operation of the system was handed to the Dhulikhel community[5] after completion of the project.

Figure 2. Water pipeline bringing water from upstream to downstream in Dhulikhel.



20 As the city expanded, water demand increased, and the existing supply was not sufficient. Dhulikhel again approached Bhumedanda and proposed to increase the volume of water from Roshi. During this period (2002 to 2017), there was no elected local government in Nepal. Local elections were suspended due to ongoing political unrest. To compensate for this local political vacuum an 'All Party Mechanism'[6] (APM) was assigned to facilitate local government by appointing bureaucrats for local affairs. With the negotiation between APMs from both upstream rural and downstream urban communities, another agreement was made on 12 March 2010 under which Dhulikhel was allowed to increase the amount of water taken from the Roshi river. In exchange,

Dhulikhel agreed to pay the partial salary of a primary school teacher and a forest guard in Bhumedanda. However, very soon the water demand of Dhulikhel exceeded the supply again.

21 The increasing water demand was now presented as surpassing the technical and managerial capacity of the community-based water management groups in Dhulikhel, and requiring a new water supply project. The Kavre Valley Integrated Water Supply Project (KVIWSP) was designed in 2010 by the federal government and aimed at supplying water to expanded Dhulikhel as well as the adjacent rapidly urbanizing Banepa and Panauti Municipalities (Fig. 2), each of them suffering from an irregular and insufficient water supply. Together, the three municipalities set up a USD12.52 million joint water supply project, to be financed through a 2010 loan agreement with the Government of Nepal and the Asian Development Bank (ADB). 50% of the budget was to be granted by ADB, 35% would come from Nepal's Town Development Fund (TDF) and 15% was to be financed by the local community themselves. After resistance by local communities, the latter was reduced to 5%, with the remaining 10% being pre-financed by the TDF and to be refunded through the water tariff (Timalsina *et al.*, 2021). On 8 May 2011, a third agreement was signed between the APM of Bhumedanda and representatives from three downstream urban municipalities to collect an additional 77.33 liter/sec of fresh water from tributaries of Roshi River. Table 1 summarizes the series of water agreements between Dhulikhel municipality and upstream Bhumedanda.

Table 1. Series of agreements between Bhumedanda and Dhulikhel for water sharing.

Date	**Agreement on**	**Compensation to Bhumedanda**
27 Jul 1985	Tapping water from one of the tributaries of Roshi River to supply water to Dhulikhel	Rebuild a school building and a bridge over Roshi river in the village
12 Mar 2010	Increasing the take of their volume of water from the existing supply	Partial salary to a schoolteacher and a forest guard
8 May 2011	Tapping 77.33 liters per second of additional water from different tributaries of Roshi River to supply to Dhulikhel, Banepa and Panauti	Nepalese rupees 7.5 million (≈USD 55000) and royalty from the water tariff

22 In the face of an overall decrease in the river's discharge, additional water transfers to downstream Dhulikhel raised concerns in Bhumedanda about the municipality's own water provision, and bottom-up contestation against the KVIWSP water transfer by rural Bhumedanda communities was growing. The contestation aggravated as Dhulikhel along with two other adjoining municipalities of Banepa and Panauti attempted to tap even more water through the larger KVIWSP. The protest turned violent at times, resulting in breaking of intake pipes and strikes (Devkota *et al.*, 2019; Pokharel *et al.*, 2019). The protests slowed down the project's implementation. While the construction of the KVIWSP started in 2013, its completion (aimed for by 2015) remains to be announced. In the next section, we will analyze the discourses underpinning the resistance to this project by rural communities.

Reasserting the rural: three dimensions of peri-urban water contestation

23 The Bhumedanda actors contesting Dhulikhel's thirst for water assert their claims to the Roshi river water through three interconnected discourses. These discourses tie in with the three perspectives on peri-urbanization and together serve to assert the distinction between the rural and the urban in peri-urban regions. The first perspective that is emphasized is a transitional one, asserting how rural and urban communities in the peri-urban region around Dhulikhel are both transforming. As urbanization spreads outwards from Dhulikhel, and transport infrastructure improves, the rural municipality of Bhumedanda is gradually incorporated in wider peri-urban relations, and livelihoods in the village acquire a more urban character, leading to a growing demand for water. Over time, water has evolved from an abundant to a scarce resource. Consequently, the relationship between upstream and downstream water users becomes increasingly competitive. Upstream users assert their right to access water, aiming to secure its availability not only for the present but also for the future generations.

24 In doing so, they mobilize a second discourse which emphasizes a territorial perspective. Whereas the peri-urban region around Dhulikhel is increasingly integrated, it remains subdivided into rural and urban municipalities, even after politico-administrative mergers in 2017. Bhumedanda protesters built on that administrative territorialization, and the legal rights connected to it to claim that 'their' water should not leave the territory and contest the water transfer agreements made between unelected local governments. Finally, a third, functional perspective is adopted. This asserts the rural character of Bhumedanda and the traditional rights to water to seek support for their claim in national and international legislation on traditional and indigenous rights.

Transition from rural to urban: growing water demand

25 Water demand is not only growing rapidly in Dhulikhel, but is also on the rise in Bhumedanda, as the village is gradually integrated into the peri-urban area. It is now provided with electricity, television and internet. After the 2015 Gorkha Earthquake demolished their houses[7], afflicted villagers rebuilt them in concrete and fitted them with flush toilets and a bathroom on each floor. Connectivity also improved. Each of the households in the village have at least a motorbike for their own transportation, and intermittent public bus services are available on the muddy roads to Dhulikhel, the district capital. With these emerging (peri-)urban infrastructures and changing livelihoods, life in the village itself takes on an increasingly urban character, such that also here, water demand is increasing over time. On the other hand, the volume of water in the source - Roshi river and its tributaries is decreasing over time.

26 When demand increases and supply decreases, it is obvious that access to water becomes an increasingly contested topic (Unfried *et al.*, 2022). The intensity of struggles further increases when both contesting parties attempt to establish their right to use water for their future water security. The case from Dhulikhel shows that the struggles among rural and urban water users intensify under conditions of scarcity.

27 In an interview, the then chairperson of the village who signed the first agreement with Dhulikhel shared that '*During early 80's there was sufficient water in the river. Demand was very low in the village. We also have very friendly relations with Dhulikhel people. As per our culture and tradition, we thought giving water to someone else is a virtue. Then we happily accepted their demand and allowed Dhulikhel to take water from Roshi river*'. Twenty years later, when Dhulikhel attempted to access more water from Roshi river to its water supply system, water stress was more apparent, and upstream users resisted; the culture of sharing gradually waned.

28 Increasingly, rural communities perceived this continuous attempt to access more water as a manifestation of the urban extractivism of water resources and raised their voices against it. A local resident from the upstream community shared – '*there are small springs within Dhulikhel town that can be used to augment the existing water supply system, but a new project has been designed to collect more water from Bhumedanda*'. On the contrary, the proponents of the new project argued that water sharing can continue without doing harm if upstream communities invest in the conservation of water resources and downstream communities shift to more water resilient urbanization (ADB, 2014). However, upstream communities are contesting this view as they question the water volume measurements on which the claims are based, and criticize that the public hearings which led to this water sharing perspective did not include all stakeholders.

Resistance based on politico-administrative boundaries

29 The second dimension of the water conflict we observed in Dhulikhel is related to politico-administrative boundaries. The rural community started denying access to additional water from existing and new sources to the users outside their municipal jurisdiction. Nepal's local governments have significant power and authority to manage water resources within their jurisdiction. They are mandated to sustainably utilize and manage water for their citizens. After the new constitution in 2015 followed by local government restructuring in 2017, the issues of administrative territory has become a crucial factor in sharing water resources beyond the specific local government territory. As local governments are responsible for managing water within their geographical territory, they increasingly became reluctant to share water with neighboring municipalities. Upstream communities from Bhumedanda who rely on the Roshi river for their livelihoods resist sharing water to downstream users beyond their municipal territory to ensure a steady supply of water for their own future use. They have been rallying behind the slogan "*Hamro srot, hamrai adhikar*" meaning "*our resource, our right*".

Figure 3. A slogan against intermunicipal water sharing (“Do not ask for more water”) written in water tap in Bhumedanda.

30 A new generation of young people in Bhumedanda formed a committee called the Roshi River Concern Committee (RRCC) to have their voices heard in the process. They organized campaigns, e.g. writing slogans against the project at public places, wrote slogans on walls and water pumps (Fig. 3) to sensitize people in the village regarding the future effect of allowing more water from the river. The coordinator of RRCC had a meeting with the political leaders and APM members from Dhulikhel and representatives from the ADB. RRCC further put in a 19- points high demand to be implemented in the village by the project. This included road, hospital, school, irrigation, water supply projects in the village; employment, free education, and medical treatment for the villagers in Dhulikhel etc.

31 They argued that they were not obliged to provide water to the people living downstream, people living in another municipality. They further claimed that Dhulikhel must manage water from the sources within its own territory. In the absence of an elected local government, they aimed their calls at local political leaders and government officials who were assigned to manage local administration and development. On the other hand, the downstream towns counterargued that they possessed water use licenses issued by the district administration (the district development committee which had the mandate to allocate water use licenses) and so have the right to tap water from the river. A series of protests and negotiations were held, and a public hearing was organized.

32 The rural community further argued that the water use priority needs to stay with the local communities where the sources are located. Citing the provision of the new 2015 constitution of Nepal that authorized the local governments to manages the natural resources within their jurisdiction, they claimed that they should have the first right to

use water from the Roshi river. They argued that they were not obliged to provide water to the people living downstream, people living in another municipality. They further claimed that Dhulikhel must manage water from the sources within its own territory. In the absence of an elected government, they aimed their calls at local political leaders and government officials who were assigned to manage local administration and development. On the other hand, the downstream towns counterargued that they possessed water use licenses issued by the district administration (the district development committee which had the mandate to allocate water licenses before 2025) and so have the right to tap water from the river. In 1992, in a prominent policy arrangement, water rights were defined by the Water Resources Act. This Act clearly stated that no person shall be entitled to utilize water resources without obtaining a license under the Act. This provision of licensing has been continued in the 2022 Water Supply and Sanitation Act (WSSA) of Nepal.

33 While these claims and counter claims to access water were going on, local political leaders predominantly from the upstream region applied their *de facto* authority, became influential over the local bureaucracy, and signed a contract without public consensus which allowed additional water to be taken from the Roshi river to implement the big water supply project. Some of the respondents during our interview reported that these local political leaders were influenced by their political patrons from downstream Dhulikhel.

34 Local political leaders from both up and downstream communities are tied together in patron-client relationships as they are part of one or other national political parties. Ambitious local political leaders often play dual roles as they need the support from both their local communities as well as higher-ranked political leaders. While the local leaders from upstream showed their moral support to the community, they also acquiesced to the demands of downstream urban political patrons.

35 Bhumedanda activists assert that local leaders should be responsive to the population in their territorial jurisdiction and that such decision should not be influenced through relations of patronage. Hence, upstream water users contested the contract. A local farmer during an interview shared – '*these party leaders sold our river* by *ignoring our voices. The water volume was measured suspiciously, and numbers were exaggerated. We are not convinced on that their data show that there is a sufficient volume of water in the river*.' Despite their resistance, an agreement was reached but the Bhumedanda water users argued that the negotiation and public hearing for this agreement was not accessible and limited to users who were in favor of the local political leaders.

36 The peri-urban issue of water management in Dhulikhel transcends administrative boundaries. Water flows across territorial boundaries, and peri-urban water demand is not limited to urban municipal territories. Both communities of water claimants referred to different territorial levels. Whereas the upstream Bhumedanda users were referring to the legal competences of the local level, downstream users preferable refer to the higher district policy level. Also, upstream water users assert their water claims through an affirmation of administrative territorial boundaries- whereas downstream water users try to go beyond these boundaries through rural-urban clientelistic networks that relate local to national politics.

Claiming ‘traditional’ rural rights to water

37 Finally, a third, functional perspective on peri-urban water use, is revealed in the identity politics of water users. Throughout political unrest, marginalized communities campaigned to have their primordial right to natural resources recognized and included in the new constitution. Indigenous communities and peasant farmers, who rely on natural resources like forest, river, lakes, land for their livelihoods were actively raising their voices for their preferential right to use local natural resources. Movements campaigned with slogans like “*Hamro Srot, Hamrai Adhikar*” (meaning – “*we should have our own preferential right to our local natural resources*” – authors’ translation). Indigenous communities particularly invoked the United Nations indigenous and tribal populations convention ILO 169 which grants them preferential right to access water. Nepal ratified ILO 169 in 2007.

38 Communities in Bhumedanda tapped into these discourses and the ensuing legal framework to raise their voices against the big water supply project. To contest with the water transfer project, upstream users argued that they must have the preferential right to use water based on their traditional rights to water for agrarian livelihood activities. Besides the ILO169 convention, such claimants often cite the legal provision made in Nepal’s water supply and sanitation act for the preferential access to water for traditional users. The 2015 Constitution of Nepal and the 2022 WSSA recognize the access to drinking water as a fundamental right of every citizen. But the latter act has further recognized the right of the traditional users of the water and provided them with the preferential right to use water.

39 They claimed that, being the local community, living nearby the water sources which they and their forefathers have been using since generations, they must have privileged access to water from the Roshi river. Local farmers and water millers argued that their agriculture, water mills and daily livelihoods are traditional rural activities directly connected to the water from the Roshi river. With the support from some social leaders in the village, they raised their voices against the proposal. To contest the water transfer project, upstream users argued that they must have the preferential right to use water based on their traditional rights to water for agrarian livelihood activities. Such claims are often cited with the legal provision made in Nepal’s water supply and sanitation act that has clearly mentioned that an individual or community who have been using the particular source of water for their household use have preferential right to use it (GoN, 2022), while also referring to the ILO169 convention.

40 In making these claims, local activists assert the traditional rural character of their activities and communities as against the ‘new’ urban demands coming from downstream urban communities. Their discourse serves to polarize the functional reading of the peri-urban region, emphasizing the differentiation between rural and urban functions to claim their rights, and ignoring the gradual transition of their own livelihoods as the villages are integrated in the peri-urban space.

Conclusion

41 In this paper, we have mobilized Follman’s triad of perspectives (transitional, territorial and functional) on peri-urbanization to understand peri-urban contestations of a large scale water transfer project destined to bring water from upstream

communities to a downstream urban center. As argued by Hoogesteger and Verzijl (2015) water transfers have led many rural communities to engage in collective action to defend their rights to access water against urban claims. Our analysis highlights the need for acknowledgement that access to water is embedded in political-territorial and legal frameworks, as well as identity politics.

42 Using Follmans's lense, we have been able to demonstrate how the discourses developed by the contestants of the project have creatively mobilized legal frameworks around water justice, territorial competences and democracy to reassert their rural identities in a peri-urbanizing context. Looking at the case through a transitional lens has revealed how rural communities are in a process of peri-urbanization which increases their own local water demand, thus making it harder to accept rural-urban water transfers. Peri-urban water scarcity has led rural communities to abandon their traditions of water solidarity.

43 From a territorial perspective, it is striking how administrative subdivisions do not follow the geographies of the hydrosocial community of water users. Subdividing the peri-urban territory in rural and urban municipalities has stimulated a 'municipalist' reflex among the contestants of the water transfer project, emphasizing that 'local' resources are for 'local' use.

44 Finally, a functional perspective looks at the way rural functions and identities were reasserted through the activists' discourse. This was mainly done through their appeal to national and international legislation prioritizing access rights for 'indigenous' and 'traditional' users of water. By emphasizing traditional agrarian uses of the Roshi river water (water mills, farming), upstream water users were claiming priority access to try to resist the water transfer. In doing so, they largely negate the ongoing transformation from a rural to a peri-urban community, and the fact that the local increase in water demand is very much driven by this peri urbanization process.

45 The insights about the backgrounds and discourses of the Dhulikhel water transfer contestations also offer lessons for other peri-urban water security policies in Nepal, as elsewhere. In the lower Himalayas, peri-urban development is widespread and water transfer is on the agenda in many places. Although many studies attribute water struggles to the commodification of water (Johnson *et al.*, 2016; Bakker, 2010), bigger hydro, water supply or irrigation projects (Domenech *et al.*, 2013), or bigger companies disrupting small holder water use (Bijoy, 2006; Mirhanoglu, 2023), the case of Dhulikhel highlights how everyday struggles (Truelove and Cornea,2021) among competing users can produce contestations over water access.

46 It is clear that the context of peri-urbanization heightens tensions as it drives up water demand both in city centers as in their peripheries. In the context of territorial fragmentation of peri-urban areas, such water stress can cause increased competition for water access between municipal territories. Our case study reveals how in such a competitive context, national and international legal frameworks stimulate a rural identity politics which can aggravate the political fragmentation of peri-urban areas. In such a context, not only has it been more difficult to develop water solidarity between upstream and downstream users, upstream, peripheral communities are also increasingly by-passed politically. Urban claimants succeed in gaining the upper hand through untransparent clientelistic relations, the exclusion of upstream claimants from political procedures.

47 While cities are more focused on designing and implementing water supply projects, they seem to be overlooking existing as well as possible tussles with rural water users. Water supply projects reproduce power differentials between more powerful urban and weaker rural communities. This situation has demanded a major rethink and appreciation of the changing socio-ecological and political realities of society driven by peri-urbanization, both in central and peripheral communities. While both are affected by urbanization, inequalities in water access and water claims have given rise to a strengthened rural awareness in peri-urban areas.

48 Finding ways to facilitate cooperation and collaboration between rural and urban users is crucial to ensuring sustainable access to water for all. This has demanded water planners to go beyond the administrative boundary and use river basins or catchments as operational entities to share water; but also urges them to recognize the emergence and strengthening of (material, political-administrative and identitarian) rural-urban divides if conflicts between rural and urban users which are to be alleviated. Finally, the increasing tussles among rural and urban water users call for a deeper understanding of local-level water conflicts. This paper gives a framework for analyzing struggles and contestations for water access based on the specific context. Our framework suggests a need to understand context-based causes and histories within any initiatives to ameliorate ongoing water contestation.

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NOTES

1. Urban water forum is a complete cycle of a policy process towards fostering evidence informed dialogue and critical policy engagement, aimed at addressing city level water-related issues. It helps to identify water-related issues, generate credible knowledge, facilitate to formulate specific policy and then translate that policy into practices to resolve the issue. *UWF* not only

aims to provide a platform to diverse actors for informed dialogue, but it also helps strengthening the capacity of city-level water stakeholders and enhance partnership.

2. Water millers are the people who run traditional water mills in the village to grind crops for their neighbors and collect crop flour against it for their food.

3. During the local government restructuring in 2017, more than 4000 local government units in Nepal were reduced to 753 by merging neighboring local government units. Dhulikhel was expanded by merging its 5 neighboring villages into it which has increased its size and population.

4. The Araniko highway links Kathmandu to the China border crossing and passes through Dhulikhel and was constructed with the help of the Chinese government.

5. Nepal's Water Resource Act 1992 introduced community-based Water Users Association (WUA) to manage water at the local level. Dhulikhel became a pioneer to use this provision.

6. APM was a group of political representatives from the existing political parties at the local level.It was formalized in July 2009 with facilitating mandates to run local government bodies in the absence of elected representatives by the cabinet decision. APM was dissolved in January 2012 after the recommendation of the Commission for the Investigation Abuse and Authority (CIAA). It was said that APM crossed its limitation of facilitating role and became more influential on managing the local budgets and resources.

7. Nepal was seriously affected by large earthquakes on April 25th 2015 (7.8 on Richter scale) and May 12 2015 (7.3 on Richter scale). Over 500,000 homes were destroyed, 250,000 damaged, nearly 9000 people killed, 21000 injured, and 3 million affected.

ABSTRACTS

While urbanization is a global phenomenon, it is now more rapid in the countries in the Global South. Municipal authorities of burgeoning peri-urban areas in the lower Himalaya region are struggling to deal with the new geographies of water demand. Rapidly growing towns primarily access water from upstream rural water sources, while upstream communities themselves are increasing their water consumption as they gradually integrate in the peri-urban area themselves. This 'reorganization' of water has intensified contestation between upstream rural communities and downstream urban authorities. This paper examines the different narratives mobilized in the contestation of water transfer projects to the rapidly growing town of Dhulikhel in Nepal. Our analysis deploys Follman's three perspectives on peri-urbanity to throw light on these discourses. From a transitional perspective, it shows how peri-urbanization heightens water demands across the peri-urban zone and heightens competition between water users. A territorial perspective questions the administrative subdivision of the peri-urban region, and its effects on the way water users envision water sharing as restricted within territorial boundaries. Finally, a third, functional perspective reveals how in more rural municipalities, the traditional rural character is emphasized to claim priority in the access to water, thereby giving rise to a divisive identity politics. From this analysis, we argue that peri-urbanization is a dynamic process shaped not merely by urban expansion, but by the interactions between rural and urban communities and functions. While increasingly integrated, peri-urban territories, by intensifying competition for resources, are also a fertile ground for a re-assertion of rural identities and rural-urban binaries.

Si l’urbanisation est un phénomène mondial, elle est aujourd’hui plus rapide dans les pays du Sud. Les autorités municipales des zones périurbaines en plein essor dans la région du bas Himalaya s’efforcent de gérer les nouvelles géographies de la demande en eau. Les villes à croissance rapide s’approvisionnent principalement auprès des sources d’eau rurales en amont, tandis que les communautés en amont augmentent elles-mêmes leur consommation d’eau à mesure qu’elles s’intègrent dans les zones périurbaines. Cette « réorganisation » de l’eau a intensifié la contestation entre les communautés rurales en amont et les autorités urbaines en aval. Cet article examine les différents récits mobilisés dans la contestation des projets de transfert d’eau vers la ville de Dhulikhel, au Népal, qui connaît une croissance rapide. Notre analyse s’appuie sur les trois perspectives de Follman sur la périurbanité pour éclairer ces discours. D’un point de vue transitionnel, elle montre comment la périurbanisation accroît la demande en eau dans la zone périurbaine et intensifie la concurrence entre les usagers de l’eau. Une perspective territoriale remet en question la subdivision administrative de la région périurbaine et ses effets sur la façon dont les usagers de l’eau envisagent son partage à l’intérieur des frontières territoriales. Enfin, une troisième perspective, fonctionnelle, révèle comment, dans les municipalités plus rurales, le caractère rural traditionnel est mis en avant pour revendiquer la priorité dans l’accès à l’eau, donnant ainsi naissance à une politique identitaire qui divise. À partir de cette analyse, nous soutenons que la périurbanisation est un processus dynamique façonné non seulement par l'expansion urbaine, mais aussi par les interactions entre les communautés et les fonctions rurales et urbaines. Tout en étant de plus en plus intégrés, les territoires périurbains, en intensifiant la concurrence pour les ressources, constituent également un terrain fertile pour la réaffirmation des identités rurales et des binômes rural-urbain.

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Mots-clés: demande en eau, accès à l’eau, périurbanisation, Népal
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