

WATER GOVERNANCE IN RAPIDLY URBANISING SMALL TOWN: A CASE OF DHULIKHEL IN NEPAL

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Submitted 03 May 2018; accepted 10 September 2018

Abstract. Small towns in the mid-hills of Nepal rely on springs, streams and rivers in surrounding catchments for drinking water. The rapidly growing population in these towns has put increasing stresses on limited water resources. The inverse relationship between supply and demand of water has created challenges to the water security in these towns. In the absence of elected local government, decision making processes, including the management and governance of water at local level were directly affected. There were some unanswered questions – who are the leaders? who sets agendas? How do they formulate and implement strategies and make decisions? This paper aims to analyse the context of water governance in rapidly urbanising small town in Nepal, focusing on actors and institutions. Primary data were collected through semi-structured interviews, focused group discussions and key informant surveys from Dhulikhel municipality and its upstream communities. This paper argues that the local level water governance practices in rapidly urbanising small towns in Nepal are still evolving. During the political transition and vacuumed local jurisdictions, the real decisions to manage and govern water were made in an informal way. The formal course of making decisions by authorised actors and institutions has been curtailed significantly.

Keywords: *actors, institutions, policy, water security, urbanization.*

Introduction

Water scarcity is one of the main problems faced by many societies in the 21st century. It is both a natural and a human-made phenomenon. Water use has been growing at more than twice the rate of population increases in the last century. By 2050, 2.3 billion people are expected to be living in areas with severe water stress, especially in North and South Africa and South and Central Asia (UN Water, 2016). The Himalayan River Basins that feed Bangladesh, India, Nepal and Pakistan are also seriously threatened by water stress (Kolås *et al.*, 2013).

In Nepal, more than half of the urban population lives in small towns lacking basic services and necessities (Devkota, Neupane, 2017). These towns rely on springs, streams and rivers in catchments surrounding them for the drinking water. Several other rural communities live far from water sources. The spring water sources around these settlements have been drying gradually (Dhakal *et al.*, 2010; ICIMOD, 2014). In urban areas the rapidly growing population has put increasing strain on limited water supplies (WaterAid in Nepal, 2012) and suffer severe water shortages during the dry season (Price *et al.*, 2014). Similarly, in peri urban areas as well the water supply system that are managed and governed through state and community (Narain *et al.*, 2013) are facing the similar problems. About 35% of urban households mostly in newly inducted small municipalities have no access to tap water (Devkota, 2018) where limited practices of private sector management through bottle, jar and tanker have problems on quality of water (Pant *et al.*, 2016).

Since 2002 till 2017, Nepal's local jurisdiction remained without elected representatives and faced several social and political movements including Maoist movement. This fragile local political context has affected local level decision-making practices including decisions on resource governance. Particularly impacted are the management and governance of resource allocation, planning, fund disbursement and implementation (Carter Centre, 2011). The management and governance of water resources were equally affected by this situation. After the huge political change in 2015, state and the local government has been restructured and the election of local government followed by the federal and province government has been held in 2017. With the new provision in the constitution, local governments have now become further responsible to manage drinking water to their respective jurisdiction. As the existing authorities on water management mainly the district level government organizations, community level user committees and state owned corporations are continuing their role and authority, a new dimension on managing water has emerged. There are some important questions – who are the leaders? Who sets agendas? How do they formulate and implement strategies? Who is accountable to what? How do they make decisions on management and governance of water?

As the issues of ownership and control right, legitimacy and authority of water use are more important than the pricing, purchasing or privatizing the water (Boelens, Zwarteveen, 2005), this dimension has become important to deal with.

While urbanization process and water management issues has been studied adequately on separate basis, the issue of water governance linked with the rapid urbanization has not been understood (Celio *et al.*, 2010). Hence, taking water resource management as a political process (Hope *et al.*, 2007; Mollinga, 2008), this paper tries to analyse the local political context, focusing the case of local level water governance in small towns in Nepal. Specifically, this paper tries to review the policy provision for water governance in Nepal, dig out how formal and informal institutions related to water have emerged, understand who are the leaders of those institutions and gain insight into the role they play in local level decision making. Further, it also aims to analyse the actors representing different institutions who wants to engage into the water governance process, their interest and their leadership role to govern water in the mid-hill towns of Nepal. The study considers the case of a small town, Dhulikhel in Nepal, and its upstream region as we identified some of the unique characteristics of this town while choosing this city as the case study site. Dhulikhel is pioneer in Nepal to bring community into water supply management. This community water supply system used to be perceived as the best system because of its quality and quantity supply, quick repair and maintenance during the infrastructure damage, compensation to the upstream communities against using water. The up and downstream linkages and politics has further made this case relevant to our study. Though this case of single city may not be sufficient to generalise the whole country, the empirical evidences presented here can represent the cities in the Nepal situated in the similar social and geographical context.

This paper is divided into five different sections. The first section is a brief introduction to the paper, which also includes the research questions of the study. The second section explains the context and methodology of the study. Related literature review, particularly the policy review, are collated in section three. This section also comprises the institutional mapping related to water in Nepal. The fourth section of the paper is analysis and results about empirical case from the field and discussions. Actors and institutions related to water governance in Dhulikhel of Nepal are discussed in this section. Finally the conclusions are drawn based on the review and discussion on empirical evidences in section five of the paper.

Material and Methods

This paper is produced from the data compiled by our recently completed research on “Political economy of water security, ecosystem services and livelihoods in the western Himalaya”.

Dhulikhel – rapidly urbanising mid hill town in Nepal has been chosen as the study site for this study. It lies in province No 3 of Central Nepal. It is 32 km east of Kathmandu valley along the Arniko Highway. This town is

situated at 1441 m above sea level. Before the local governments were restructured in 2016, Dhulikhel covered an area of 14.01 km² and consists of 9 wards (Dhulikhel Municipality, 2011). Geographically, wards 1 and 6 lies in comparatively rural areas, whereas the remaining wards are urban in nature. The population size was 16,263 residing in 3,291 households and the sex ratio was 106.6 (Central Bureau of Statistics, 2011). Major sources of income include trade, agriculture, tourism and services.

The study adopted a mixed method including review of documents and field study comprising of series of field visits. Primarily, qualitative and ethnographic methods were used to gather information. We adopted a phased approach of research including gathering information using a range of research techniques and iteration of the findings through stakeholder workshops, expert field observation, expert roundtables, review of archival records – agreement papers, meeting minutes, municipal records etc. Major research methods used include key informant interviews, focus group discussions and observations. 40 interviews including 10 key informant interviews were held based on the checklist prepared by the research team. Similarly, 5 focused group discussions, 1 stakeholder workshop and 1 expert workshop were held in Dhulikhel. Semi structured interviews were recorded in audio and transcribed which were duly reviewed and analysed. We also participated into several programs, such as public hearing, annual meetings, general assembly etc.

Policy provision in water governance in Nepal

The piped water supply system in Nepal began with the installation of Bir Dhara – the first piped water supply in Kathmandu – in 1891. The Essential Commodity Protection Act (1955) was the first policy initiative to regulate water by law. There have since been more than fifty policy documents including Civil Code (1853), Local Self Governance Act (LSGA) (1999), Water Resource Act (1992) and the acts, regulations and directives related to drinking water, irrigation, hydro-power, forestry, mining etc. Table 1 shows the number of different policy documents related to water in Nepal.

As per the table, there are 18 acts, 10 regulations and 3 treaties with mandatory provisioning to apply into the practices. Similarly, water plan, policy documents, guidelines, Memorandum of Understanding and meeting minutes are to facilitate the mandatory activities. With political liberalisation and a focus on decentralisation after 1990, important new actors in water management – namely community groups, local government and the private sector, including non-governmental organisations – have emerged in Nepal. Later on local governance policy of Nepal, mainly after the promulgation of the Local Self Governance Act in 1999, also entrusts local government units to prepare drinking water projects for the supply of drinking water to the communities, construct and maintain drinking water

related infrastructure, and to make water related decisions at local level.

Table 1. Number of policy documents related to the water in Nepal

	Types of Policy Documents	Numbers
1.	Acts	18
2.	Regulations	10
3.	Plan	1
4.	Policy	3
5.	Strategies and Guidelines	3
6.	Formation Order	4
7.	Treaties	3
8.	Bilateral Minutes	7
9.	Memorandum of Understanding	2
10.	Joint Standing Technical Committee Meeting	2

But the rights and responsibilities offered to them under the LSGA were primarily premised upon the assumption that the Local Governments units are led by those who are directly elected by the people of the respective jurisdictions. However, after the expiry of elected representatives in July 2002, the usual course of local governance and of local democracy has been curtailed to a significant degree. In more recent years, especially as All Party Mechanisms (APM) were firmly in place in the post-2006 transitional context, local level decision making practices on natural resource management, particularly the distribution of water resources and negotiating between up and down stream communities, have been influenced by the APM.

In the case of community managed systems, Water Resource Regulation (1993) (His Majesty Government of Nepal, 1993) has provisioned the District Water Resource Committee (DWRC) headed by the Chief District Officer to register the water user committees while tapping water from a particular source. Representatives from other line ministry organizations in the district, such as water, forest, agriculture, irrigation are the members of this committee. As per the act, District Development Committee hosts the Secretariat of this committee. This committee is the apex district body which allows water user committees to tap water from a particular source. However, registering a water user committee is a difficult task due to the long list of documents to submit as well as up and down stream contestation over ownership of the water source. The DWRC also scarcely hold approval meetings. The DWRC is a semi-virtual committee whose members rarely meet as they are busy in their own sectoral assignments. In the cases of Dhulikhel, we observed that most meetings are held at the end of fiscal year and sometimes the meetings are not held for more than six months. Following section explains about the water governance provisions in specific policy documents.

Water related institutional mapping in Nepal

There are multiple institutions from government, non-government and private sectors that are actively engaged in managing water in Nepal. These institutions are set up at national, regional and local level with different role mainly on coordination, operation and regulation. The National Water Plan (2005) prepared by Water and Energy Commission Secretariat has divided the institutions related to water management into three levels. Figure 1 is the mapping of such institutions.

After 2005, there have been some changes in the institutional landscape. Several ministries like ministry of Physical Planning and Works, Ministry of Urban Development and Ministry of Water Resources have been leading the role of water management. During the political transition, these ministries sometimes dismantled and merged which created the dilemma on actual roles, responsibilities, coordination and accountability mechanism. After the Ministry of Water Resources was split into Ministry of Irrigation and Ministry of Energy on 2009 (Suhardiman *et al.*, 2015) there was no single authority to govern the water related issues at the central level. Ministry of Urban Development and Ministry of Physical Planning and Works jointly worked for the water related development activities. In December 2015, government of Nepal again constituted the separate Ministry of Water Supply and Sanitation to achieve many national and international set goals and targets in water, sanitation and hygiene. To coordinate the activities at policy level, Water and Energy Commission Secretariat (WECS) is already there. The primary responsibility of WECS is to assist Government of Nepal, different ministries relating to water resources and other related agencies in the formulation of policies and planning of projects in the water and energy resources sector. Ministries, councils, commissions and WECS are more engaged on formulating policies and coordinating activities. At operational part, departments under respective ministries, district and local government organizations are involved. Community associations are another key operational institution at grassroots level. Similarly, limited private sector organizations with business interest are also supplying water in bottle, jar and tanker. District Water Resource Committee (DWRC), Water Resource Utilization Investigation Committee and Water Tariff Fixation Commission (WTFC) are the main regulatory organizations at district and national level respectively. The key responsibility of DWRC is to provide licence to the community associations to use water from particular sources. WTFC fixes the tariff against the water managed by government organizations.

Though there are multiple institutions to manage water to the same community, there is no coordination and collaboration among them. There are confusions and overlaps in the roles and responsibilities as well. For instance – registered water user associations and the

respective local governments both are the authorized institutions to use water from the same sources. This sort of dual ownership over the source has often created contestations among community and local governments. Similarly, there is no comprehensive accountability mechanism among these institutions. Users associations

being registered into the DWRC are more accountable towards this DWRC but no vertical and horizontal accountability mechanism among different types of institutions is provisioned.

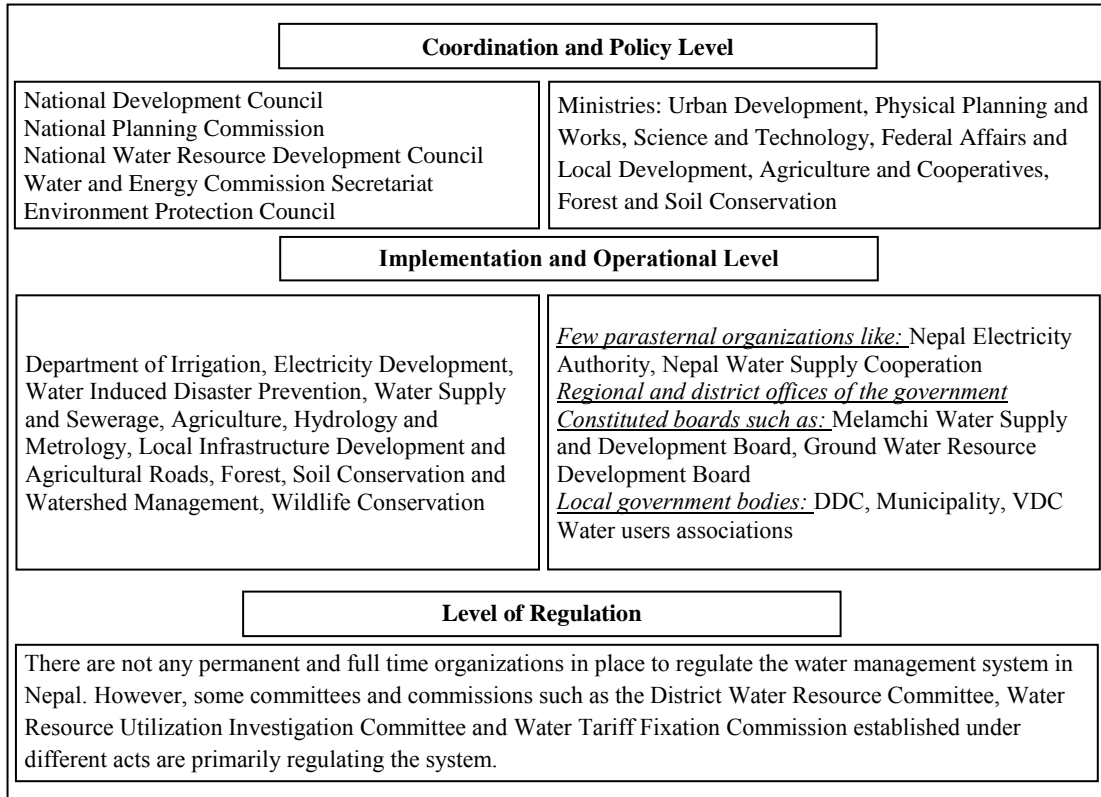


Fig. 1. Water related institutional mapping in Nepal

Analysis, Results and Discussion

Water governance in Dhulikhel

As per the data available in Dhulikhel Drinking Water and Sanitation Users Committee, currently water demand in the city is 3.7 million liters per day whereas the supply by the users committee is only 2.2 million liters a day. The gap between demand and supply is managed either by diminishing the water use or fetching water from local seasonal springs, buying through jars and tankers etc. There are multiple sources of water in this city. The main source of water is Kharkhola river which is 14 km far from the city. Beside this, local springs are tapped and recently a deep boring has been installed to extract the ground water. All water from these sources is treated into the well-established water treatment plant. As per the treatment system different steps of processing water (screening, roughening filter, slow sand filter disinfection, storage reservoirs and distribution network) are applied. This has improved the quality of water supplied to the city by

maintaining key WHO standards of water quality. For instance, pH value of this water was 7.81 which falls within the range of 6.5 to 8.5 as per WHO standard. The status of Turbidity is 0.1 NTU, iron is 0.065 mg/L, chloride is 1.5 mg/L of this water. As per the WHO standard limits these indicators should be 5, 0.3 and 250 respectively. The total standard solids of this water is 74 mg/L which is within the limit of WHO standard.

Being the districts headquarter of Kavre, Dhulikhel has access to meso-level decision making. People can simply observe that they have a collective voice for their town and ignore their different political affiliation while raising voice for their community. However, several contestations are found among the different settlements. Frequent visits by the King and Royal family, senior government officials, political leaders and security personnel for the retreat in this touristic town led them to have linkages to Kathmandu, bureaucracy and national decision makers from the historical period.

Dhulikhel village Panchayat (a rural village) was declared as a municipality (urban center) in 1987 by

merging the surrounding villages Vajrayogini, Shrikhandapur and some part of Kavre. These villages were merged into Dhulikhel to increase the population to 10,000, the required size to be a municipality. The reason behind converting the village into a municipality was to have a drinking water project supported by the German Government (GTZ). This project was targeted to supply water to the former Dhulikhel village, which was later made ward number 2, 3, 4 and 5 of the municipality. There has been some contestation between users (core Dhulikhel i.e. wards 2, 3, 4 and 5) and non-users (other wards) while distributing water from GTZ supported project.

Dhulikhel municipality has two water supply systems. The older one was built as early as 1982 in support of the Indian embassy and has 27 public taps in the town (Tiwari, 2008). The next drinking water project started in the mid-80's and completed by early nineties (Bhatta *et al.*, 2014) after a tripartite agreement between government of Nepal, the German government and Dhulikhel Drinking Water Users Committee was signed. For this water, Dhulikhel went to Kalanati Bhumedanda village which lies in 14 km northwest from the city. Because of the compensation to upstream communities, tariff fixation and collection trends, the water treatment system and the immediate responses to damage, this community managed drinking water supply project has been perceived as a role model.

However, with the rapid urbanization in town and increase in population, the supply of water gradually became insufficient. 24 hours water supply has been

reduced to less than 2 hours a day and then several other issues has been emerged. So, the success of this scheme has been questioned as conflicts exist amongst users and non-users, users of the old and new system and people from Dhulikhel and surrounding municipalities. Several contestations among the up and downstream communities has also occurred in the region (Neupane, 2016). After the implementation of separate Kavre Valley Integrated Drinking Water Supply project to supply the water to three adjacent municipalities in the valley, these issues have been further worsened. Negotiation between the upstream community, different wards and actors within the town are ongoing. There are several actors in these processes.

Actors in water governance

After the first agreement between Dhulikhel and Bhumedanda – the main source of water to Dhulikhel in mid-80's – there have been other formal and informal agreements to compensate the upstream community by the downstream against the water use. In this section, actors in water governance are primarily taken from the signatories and facilitators of three prominent formal agreements held in 1986, 2010 and 2011 between Dhulikhel and Bhumedanda – the upstream community. Following table 2 shows the details of agreements with the respective signatories and facilitators.

Table 2. Agreement details as per the agreement documents between up and down stream Dhulikhel

Agreements	Agreed date	Party A and signatories	Party B and signatories	Facilitators
Agreement I: Water to tap from Khar Khola at Bhumednda to Dhulikhel	July 27, 1985	Dhulikhel VDC – Pradhanpancha ¹	Bhumedanda VDC – Pradhanpancha	Then mayor of the municipality
Agreement II: Water to tap from Roshi river and its tributaries at Bhumednda to Dhulikhel	March 12, 2010	Kavre Valley Integrated Drinking Water Project – Meso level political leaders of 7 major parties from Kavre valley	Bhumedanda VDC- VDC secretary and 6 local political leaders 2 from each (Nepali Congress, Communist party of Nepal (Unified Maoist and Leninist) and Unified Communist Party of Nepal (Maoist)	Municipality officials, Urban Environment Improvement Project (By Asian Development Bank)
Agreement III: Water to tap from Khar Khola at Bhumednda to Dhulikhel	May 08, 2011	Dhulikhel drinking water user committee	Bhumedanda VDC Secretary in presence of three APM members	Dhulikhel municipality, KU, Dhulikhel Hospital, DWRC

¹Pradhanpancha were the head of elected local government in each village Panchayat in Nepal during the Panchayat era.

The case of these three agreements, their signatories and facilitators clearly shows that the actors in water governance in Dhulikhel are evolving over the time. The first agreement was signed by the Pradhanpanch which was facilitated by some people like mayor of the municipality

who has good friendship relation with the Pradhanpanch. Previously, the state actors from local government facilitated by some local elites made decisions. Later on, the user committee led by the local elites took over this role. However, the user committee and drinking water

project beyond the municipality are represented by the same people. Hence, whatever may be the forms of representation, the decision makers are found to be the same people in the municipality. Most of these people originate from the political core of Dhulikhel. Wards 2, 3, 4 and 5 within the dark color shown in figure 2 are perceived as the political core of the city. Most of the local political leaders, key decision makers, former municipal mayor and deputy mayor, and people holding key posts in Dhulikhel

Drinking Water and Sanitation Users Committee are from this region. According to a local political leader from the periphery region (ward no 1, 6, 7, 8, 9) of Dhulikhel, the collective voices of this Newar (one of the ethnic communities among 61 in Nepal) dominated community gradually took hold of the decisions on water distribution in the city. Hence, a mass movement against this practice was held.

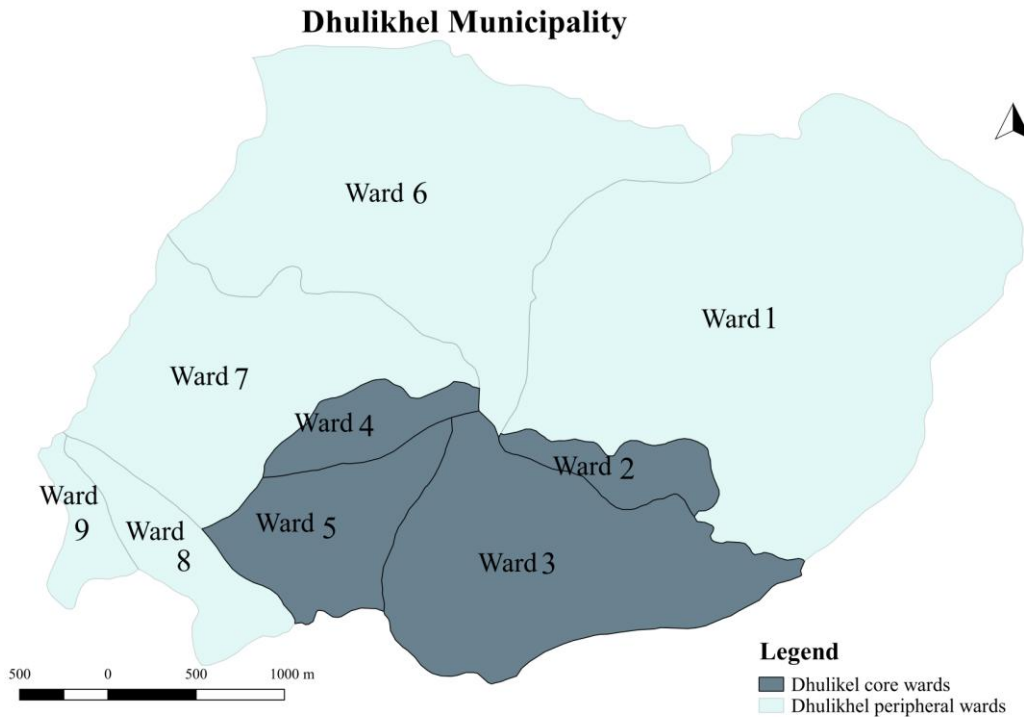


Fig. 2. Dhulikhel municipality map

The construction of the GTZ funded drinking water supply project was started in 1987 and completed in 1991. The formal inauguration of the project was planned in 1993 for which then Prime Minister of Nepal was invited as the chief guest. However, the event was cancelled after people outside the core in Dhulikhel created obstacles for the program by demanding a water supply for wards 1, 6, 7, 8, and 9. After the last local election in 1997, then King of Nepal was invited to inaugurate the project. A Struggle Committee by the people who didn't have access to water and newly elected ward chair persons from wards 1, 6, 7, 8 and 9 submitted a letter requesting King Birendra not to inaugurate the project until the water had been distributed to other wards. Senior officials from the Department of Drinking Water and Sewerage visited Dhulikhel and held negotiations with them. An agreement was reached during that time. According to the agreement, two options were proposed to address water problems in these wards in the short and long term. In the short term, local sources were to be tapped to supply water to users outside of the core and in

the long term, alternative sources of water for these wards must be found. With this agreement, King Birendra formally inaugurated the project on December 1997.

After the inauguration, residents outside of the core Dhulikhel noticed the reluctance of concerned bodies to implement the agreement and so re-started their protest. Following this, the struggle committee disconnected the main supply of water at ward no. 8 in Shrikhandapur. The water supply to the core of Dhulikhel was disrupted for 4 days. Another level of negotiation was held in the presence of struggle committee, district and municipal level government organizations, Constituent Assembly members who represent Dhulikhel in parliament and water user committees. After this agreement, the water was gradually distributed to outer wards but the supply was still insufficient.

The above case reflects the tussles between different clusters within the same municipality for the water access. The formation of the struggle committee to raise collective voices against the unequal resource distribution ultimately

succeeded in distributing water to the other wards. Members of this committee were local political leaders representing different political parties.

This sort of movement emerges by more abstract feeling of biasness rather than political agenda (Durac, 2015). This suggests that local political leaders are the major decision makers in the town and they sometimes ignore their party affiliation whilst raising collective voices for their common benefits.

Similarly, as per another case – Dhulikhel village Panchayat was converted into Dhulikhel municipality in 1987 by merging some adjacent villages namely Vajrayogini, Shrikhandapur and some part of Kavre village Panchayat into Dhulikhel to get a GTZ-funded drinking water supply project in the municipality. There was disagreement between the core and periphery wards of Dhulikhel over the distribution of the GTZ-funded water in the municipality. Core Dhulikhel claimed that the water project was built to supply the water to them only, however periphery people claimed that the water should be distributed to all parts of the municipality.

As the people from ward 6 - one of the periphery ward didn't have access to water from GTZ supported project, they proposed an alternative local source of water to tap water to their settlement. The Rural Water Supply and Sanitation Fund Development Board confirmed its financial support for the project. The project was completed and water was tapped for some times. Gradually, the people around this local source started to interfere the project. They claimed that the source was their alternative when their regular supply diminishes. The disagreements between source and supply increased further. In 2006, then member of the Royal Standing Committee visited the site to settle the contestation and asked Chief District Officer to settle the case. The CDO further asked the District Drinking Water and Sanitation Division office to submit a study report on this contested case. The report came in favor the supply side and an agreement was held. According to the agreement, local people have right to use water as per their convenience whereas downstream people could tap the water from this source during the unused time only. However, the issue was not settled as the local people continued to disturb water supply to downstream community.

While further exploring this case, it was observed that the downstream water users were relatively weaker interim of socioeconomic perspective. They didn't have time to contest with the people near by the source as most of their time is spent in their farm and other daily wage work. Gradually the project remained unrepaired and tank and pipes are totally out of use. Some of the local residents claimed that there are some people with hidden interest to take benefit from this water. This sort of micro politics hidden actors and incentives are still prevailing the city.

The presence of member of Royal Standing Committee and the CDO to settle the above mention case in

Dhulikhel clearly demonstrates their access to high level bureaucracy and decision makers while dealing with conflicting issues. Similarly, the frequent attempt to resolve the problem and ultimately the experience of failure water supply project in this city revealed that the hidden interest of influential people including people living near by the source is also the key issues to be duly considered while sharing water resources.

Decision makers in upstream Dhulikhel

The practice of making decisions on water-related issues by the local government has occurred in upstream region of Dhulikhel since 1986. The initial agreement was for water to be tapped from Bhumedanda village Panchayat to Dhulikhel village Panchayat, and this was signed by the Pradhanpanchas (Table 3). The initial proposal by Kavre district panchayat chairman - who used to have influential role on decision making to tap water from Bhumedanda to the district headquarter was accepted by the local people in Bhumedanda. According to the agreement document, the decision was taken after the village council in Bhumedanda approved to do so. The creation of such a deliberative platform to make decisions on water resource clearly reflects that there used to be a participatory decision-making practice in the upstream region. However, the agreement was also facilitated by several other factors:

1. There was a large volume of water in Kharkhola (where the water has been tapped) and other uses, such as irrigation, traditional mills etc. were not affected by this agreement.
2. According to Hindu religion, people feel that they are blessed by the god after they supply drinking water to thirsty in need.
3. Dhulikhel is the districts headquarter and people from Bhumedanda had to visit Dhulikhel frequently for several reasons, including administrative work, education, market access etc. These people need water in Dhulikhel when they visit the area.
4. In this particular case, the head of district local government went there to demand water from the district headquarter, which local people found difficult to reject.
5. Downstream people agreed to compensate upstream people by building a school building in the upstream village as compensation to the water.

A second agreement held on March 2010 with the Kavre Valley Integrated Drinking Water Project was signed by the VDC secretary and 6 local leaders representing three political parties. Similarly, the VDC secretary signed the latest third agreement of May 2011 in presence of three APM members representing three major political parties present in the village. At the time of second the third agreement, there was no elected representative in the VDC and VDC secretary was the single person authorised by the government to continue the role of local government.

However, the APM and local political leaders hold the de-facto authority and facilitate the decisions accordingly.

These three examples of decision-making in upstream Dhulikhel show that actors in local decision making practices have changed over the time with the gradual change in socio-political situation in the country. In addition, it appears that the influence is due to global change from cultural to neo-liberal definitions of water (Agyenim, Gupta, 2013) as in Hindu Religious society for sharing water as sacred. This has also been influenced by Nepal's evolving decentralization policy. This is the need of bringing governance mechanism closer to the people by shifting centralized policy approaches to decentralized approaches (Rogers *et al.*, 2003; Mitchell, 2005). The argument is that bottom-up approaches, which are associated with decentralization, tend to engender local citizen ownership of policies/programmes, and hence, promote better and effective policies. However, the challenges brought by the decentralization is several levels of government bring complexities to functions, relationships, and revenue and power sharing (Miller, 2002).

After the expiry of the elected local government in July 2002, the usual course of local decision making has been curtailed to a significant degree. In the absence of periodic local elections, especially as All-Party Mechanisms were firmly in place in the post-2006 transitional context, the local level decision making practices have been taken over by the political leaders having de-facto authority.

Institutions to govern and manage water in the town

According to the Water Resource Act 1992, the state has ultimate ownership of the water resources in the country. This act has provisioned the District Water Resource Committee headed by the Chief District Officer of the concerned district. The DWRC is the regulatory institution at the district-level that provides authority to the user committees of the concerned water sources to use them for drinking, irrigation, agriculture, hydropower etc. According to the record maintained by the DWRC of Kavre, there are 10 user committees registered in Dhulikhel municipality in Kavre DWRC.

In most part of Dhulikhel, a community based water users committee called Dhulikhel Drinking Water and Sanitation Users Committee manages water. This is the prominent and most influential user committee in Dhulikhel, there are several other small user committees in the town which are the formal user committees that are formed as per the act. However, there are also some informal institutions who claim they are marginalised from decision-making and victimised by the new drinking water projects in the town. Following table 3 is the brief about such informal institutions.

Informal institutions have been manifested as interest groups that provide a voice against mainstream decisions. Sthaniya Sarokar Samiti of upstream Dhulikhel was formed to raise protest for the equitable benefit (revenue generated from the compensated amount by downstream municipalities) to be distributed to all geographical, social and political sectors in the village.

Table 3. Informal institutions formed by excluded people as per the field survey 2016

Institutions formed	Who formed?	Why formed?
Sthaniya Sarokar Samiti (Local Concern Committee)	Local people from upstream Dhulikhel who claim themselves as the excluded group while contracting with downstream community	To demand inclusive decision making while negotiating with downstream community
Sangharsha Samiti (Struggle Committee)	People from outside Dhulikhel's core who claim that they don't have access to drinking water (main supply) in the municipality	Demand equitable water distribution to all the wards with in the municipality
Roshi Khola Sarokar Samuha (Roshi Khola Concern Group)	Local people from downstream who claim themselves that they were excluded on	To demand compensation against the possible loss to their irrigation after the large Kavre valley project come under operation

This committee raised its voices by putting 19 points demand to the donor of the drinking water supply project, wall painting against the project around the project area etc. Similarly, as per a member of the Committee, Sangharsha Samiti of Dhulikhel was formed to challenge against the unequal water distribution in the municipality of Dhulikhel. They protested several times in the municipality, including disturbing the water supply system to the core of Dhulikhel to distribute the main supply of water to the more peripheral areas. Another informal institution – Roshi

Khola Sarokar Samuha was formed to raise the voices of the farmers whose irrigation was supposed to be affected by the ongoing drinking water supply project to the three municipalities.

All of these informal groups were formed by people who claimed themselves as excluded and so raised their voices for inclusion in the benefit sharing. In some cases, their agenda has become a prominent issue during donor meeting, municipal meeting etc. Some of their demands were settled through high level negotiations, which suggest

that these sorts of informal groups also manifested and appropriate dealing were held during the course of water governance. This has indicated that cooperative water agreements can also improve social accord. Also, such agreements can serve as the groundwork for lasting political stability. But, with the change in lives, opportunities, and thus decision making frames of villagers in the hamlets also gets changed which exert changing pressures on existing practices and agreements (Kovacs *et al.*, 2016). Therefore, water law and accords are not always initially equitable, or can become out dated, therefore revision and amendment of agreements is sometimes necessary and can be very successful (Kreamer, 2012).

Conclusion

This paper has tried to document the context of water governance in a small town in the context of rapid urbanization, the trend of drying water sources and political transition when no elected local government is in place. The review of policy documents and institutional mapping shows that there are multiple laws, acts, rules and policies to manage water in Nepal. Several of these documents have overlapping, contradictory and uncoordinated provisions to manage water. Most of these statutory documents have created too many institutions across the level. However, there are no provisions of coordination and collaboration among the institutions. Similarly, no such policy exists to guide water management and governance at full scale. The provision of the DWRC and its mandate seems insufficient to effectively govern water at the micro-level.

Evidence from Dhulikhel shows that the practice of water governance in such towns is evolving over the time. Local governments were the primary decision maker during the period when there were elected representatives. Gradually, the approach of community governance has become more effective. However, the case discussed in this paper reveals that there are several weaknesses in this approach as well. Until and unless the political influence and individual grievances exists during the course of decision making, no unique and efficient approach to governance works. The conventional approach to negotiation and decisions, which primarily depended on power balance, has been severely contested in a changed political context. In recent years, local communities have started negotiation based on principles of mutual interests. This has demanded a new approach to decision-making that can accommodate multiple stakeholders and their voices. The way of making decision in certain collusion behind the curtain and formalizing it among the wider stakeholder do not address the issues of affected people. In the new approaches and process real stakeholders who losses and gains from the particular project need to have deliberative platforms to raise their concerns and valid concerns are to be addressed which will ultimately contribute to the ideal governance of water.

Acknowledgement

The Ecosystem Services for Poverty Alleviation (ESPA) program funded this study. We would like to thank Prof Bhaskar Vira and Eszter Kovacs from University of Cambridge and Hemant Ojha, Ngamindra Dahal and Tikeshwari Joshi of Southasia Institute of Advanced Studies for their generous support while conducting the research and drafting this paper.

References

- Agyenim, J. B.; Gupta, J. 2013. Water management in Ghana: between the idea and the implementation. *Journal of Natural Resources Policy Research*, 5(1), 35–48. <https://doi.org/10.1080/19390459.2012.668100>
- Bhatta, L. D.; Van Oort, B. E. H.; Rucevska, I.; Baral, H.. 2014. Payment for ecosystem services: Possible instrument for managing ecosystem services in Nepal. *International Journal of Biodiversity Science, Ecosystem Services and Management*, 10(4), 289–299. <https://doi.org/10.1080/19390459.2012.668100>
- Boelens, R.; Zwarteveen, M. 2005. Prices and politics in andean water reforms. *Development and Change*, 36(4), 735–758. <https://doi.org/10.1111/j.0012-155X.2005.00432.x>
- Carter Centre. 2011. *Carter Center Observation on Political Parties in Local Bodies* [online], [cited 2 March 2018]. Available at: https://www.cartercenter.org/resources/pdfs/news/peace_publications/election_reports/nepal-2014-final.pdf
- Celio, M.; Scott, C. A.; Giordano, M. 2010. Urban-agricultural water appropriation: The Hyderabad, India Case. *The Geographical Journal*, 176(1), 39–57. DOI: <http://www.jstor.org/stable/25621861>
- Central Bureau of Statistics. *National population and housing census 2011 (National Report)*. Kathmandu, Nepal. 2011 [online], [cited 12 April 2016]. Available at: <http://cbs.gov.np/image/data/Population/National%20Report/National%20Report.pdf>
- Devkota, K. 2018. Challenges of inclusive urbanization in the face of political transition in Nepal. In: Mugambwa J.; Katusiimeh M. (Eds.). *Handbook of Research on Urban Governance and Management in the Developing World*. 1st edition. Hershey: IGI Global, United Sates. 159–171. <https://doi.org/10.4018/978-1-5225-4165-3.ch009>
- Devkota, K.; Neupane, K. R. 2017. *Ecosystem Services and Urban Resilience – Making Evidence Work In Rapidly Urbanizing Asia: Nepal Country Report*. Page: Assessment. Kathmandu, Nepal [online], [cited 14 August 2018]. Availabale at: https://www.acccrn.net/sites/default/files/publication/attach/5_nepal_paper.pdf
- Dhakal, K.; Silwal, S.; Khanal, G. 2010. *Assessment of climate change impacts on water resources and vulnerability in hills of Nepal: A case study on Dhare Khola watershed of Dhading District* [online], [cited 22 August 2018]. Available at: <http://www.climatenepal.org.np/main/downloadFile.php?fn=anpnmqymf3n.pdf&ft=application/pdf&d=publication>
- Dhulikhel Municipality. *Municipal Profile of Dhulikhel 2011*. Dhulikhel, Kabhre. 2011.
- Durac, V. 2015. Social movements, protest movements and cross-

- ideological coalitions – the Arab uprisings re-appraised. *Democratization*, 22(2), 239–258.
<https://doi.org/10.1080/13510347.2015.1010809>
- His Majesty Government of Nepal. *Water Resource Regulation 1993* (2050 BS) (Nepali Version). 1993 [online], [cited 11 June 2018]. Available at:
<http://www.lawcommission.gov.np/documents/2015/08/जल-स्रोत-नियमावली-२०५०.pdf/>
- Hope, R. A.; Porras, I.; Borgoyar, M.; Miranda, M.; Agarwal, C.; Tiwari, S.; Amezaga, J. M. 2007. *Negotiating Watershed Services*. International Institute for Environment and development: London.
- ICIMOD. 2014. Towards a better understanding of water resources management in the Hindu Kush Himalayas. [online], [cited 11 March 2018]. Available at:
<http://www.icimod.org/?q=14241>
- Kolas, A. L.; Barkved, J.; Bhattacharjee, K.; Edelen, K.; Hoelscher, S.; Holen, F.; Jahan, H.; Jha, B.; Miklian, J. 2013. *Water Scarcity in Bangladesh Transboundary Rivers, Conflict and Cooperation*. Peace Research Institute: Oslo [online], [cited 10 March, 2018]. Available at:
<https://www.files.ethz.ch/isn/172868/PRIO%20Report%20-%20Water%20Scarcity%20in%20Bangladesh.pdf>
- Kovacs, E. K.; Kumar, C.; Agarwal, C.; Adams, W. M.; Hope, R. A.; Vira, B. 2016. The politics of negotiation and implementation: A reciprocal water access agreement in the Himalayan foothills, India. *Ecology and Society*, 21(2):37.
<https://doi.org/10.5751/ES-08462-210237>
- Kreamer, D. K. 2012. The Past, Present, and Future of Water Conflict and International Security. *Journal of Contemporary Water Research & Education*, 149(1), 87–95.
<https://doi.org/10.1111/j.1936-704X.2012.03130.x>
- Miller, K. L. 2002. Advantages & Disadvantages of Local Government Decentralization. Georgetown, Guyana [online], [cited 11 June 2018]. Available at:
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.134.5990&rep=rep1&type=pdf>
- Mitchell, B. 2005. Integrated water resource management, institutional arrangements, and land-use planning. *Environment and Planning*, 37(8), 1335–1352.
<https://doi.org/10.1068/a37224>
- Mollinga, P. 2008. Water, Politics and Development: Framing a Political Sociology of Water Resources Management. *Water Alternatives*, 1(1), 7–23.
- Narain, V.; Khan, M. S.; Sada, A. R.; Singh, S.; Prakash, A. 2013. Urbanization, peri-urban water (in)security and human well-being: A perspective from four South Asian cities. *Water International*, 38(7), 930–940.
<https://doi.org/10.1080/02508060.2013.851930>
- Neupane, K. R. 2016. Dhulikhel's struggle for drinking water - *Nepali Headlines*, Kathmandu [online], [cited 14 June, 2018]. Available at: <http://nepaliheadlines.com/dhulikhels-Struggle-for-drinking-water/>
- Pant, N. D.; Poudyal, N.; Bhattacharya, S. K. 2016. Bacteriological quality of bottled drinking water versus municipal tap water in Dharan municipality, Nepal. *Journal of Health, Population and Nutrition*, 35(1), 17.
<https://doi.org/10.3126/acclm.v2i1.14271>
- Price, G.; Alam, R.; Humayun, F.; Kabir, M.H.; Karki, C.S.; Mitra, S.; Saad, T.; Saleem, M.; Saran, S.; Shakya, P.R.; Snow, C.; Tuladhar, S. 2014. *Attitudes to Water in South Asia*. New Delhi, India.[Online], [cited August 15 2018]. Available at:
<https://www.chathamhouse.org/sites/files/chathamhouse/field/document/20140627WaterSouthAsia.pdf>
- Rogers, P.; Hall, A. W.; Van de Meene, S. J.; Brown, R. R.; Farrelly, M. A. 2003. *Effective Water Governance Global Water Partnership Technical Committee (TEC)*. [online], [cited 1 September 2018]. Available at:
<https://www.gwp.org/globalassets/global/toolbox/publications/background-papers/07-effective-water-governance-2003-english.pdf>
- Suhardiman, D.; Clement, F.; Bharati, L. 2015. Integrated water resources management in Nepal: key stakeholders' perceptions and lessons learned. *International Journal of Water Resources Development*, 31(2), 284–300.
<https://doi.org/10.1080/07900627.2015.1020999>
- Tiwari, B. N. 2008. *Pricing of Water and Sanitation. The Nepalese Experience*. The Central Department of Economics, Tribhuvan University, Kathmandu, Nepal.
- UN Water. *Water and jobs: facts and figures*. The United Nations World Water Development Report. 2016. [online], [21 August, 2018]. Available at:
<http://unesdoc.unesco.org/images/0024/002440/244041e.pdf>
- WaterAid in Nepal. 2012. *Water source conflict in Nepal: A right to water perspective*. Lalitpur, Nepal.