

IMPROVING GOVERNANCE IN NEPAL'S WATER RESOURCES SECTOR THROUGH INSTITUTIONAL CHANGES

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ABSTRACT

Principles of cooperative governance and collaborative management are increasingly becoming central to integrated and participatory water resources development and management. Several institutional measures, both in terms of tools and rules, have been introduced in most cases to make these principles effective. While some successful cases such as Murray-Darling basin in Australia and Northern-Colorado Water Conservation District in Colorado exhibit alluring examples, experiences from Nepal show a contrasting picture. Nepal has embarked on several national and local level institutional measures to improve governance in water resources sector. However, the evidences suggest that the results are far from what were expected at the outset.

Successful examples around the world indicate that “enabling environment”, “genuine representation of the stakeholders”, and “accountability” are key requirements for the success of such endeavors. How have these key requirements been addressed in case of Nepal? What are the achievements and shortcomings? What can be a promising way forward? Focusing on these questions, this case study presents findings and conclusions based on: 1) review of various institutional measures taken over time in Nepal’s water resource sector; 2) analysis of achievements and shortcomings in achieving “enabling environment”, “genuine representation of the stakeholders”, and “accountability”; and 3) investigation of roles of external support agencies and allied government bodies.

INTRODUCTION

Despite being generously endowed with freshwater (10,043 m³ per capita in 2000), Nepal faces challenges in exploiting its water resources for realizing the national objectives of: social development, economic development, and environmental sustainability (WECS, 2002). The recently proposed National Water Plan, 2004 asserts that the implementation of water related programs under good governance is vital for realizing the national goals and objectives. Clearly, this requires complementing institutional arrangements encompassing: legal framework, related policies, and organizational structures of the involved entities.

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INSTITUTIONAL MILIEU

The water resource sector in Nepal represents a combination of deep-rooted indigenous customary laws and a host of statutory laws and regulations promulgated and amended through time (WECS, 2002; Sharma and Onta, 2002). Agrarian communities of Nepal have been engaged in the development of irrigation and water supply schemes from the sixth century. Using local knowledge and skills they developed simple and rudimentary irrigation systems. Sporadic supports in these development endeavors were also made by incumbent kings in response to the pleas (*jaaheris*) made to the palace. Farmers managed and utilized water as per their individual or collective needs. Over time, such practices and associated norms, generally unwritten, became the guiding principles for managing water-related conflicts. The state literally had no role in development and management of water resources until the middle of nineteenth century.

With the expansion of paddy cultivation in both the hills and *terai* during the nineteenth and first half of twentieth century significant expansion of irrigation schemes (about 20,000 in number) occurred through the initiatives of the farming communities. Then the state came into the picture and promulgated the National Code of Conduct (*muluki ain BS1910*) in 1853. Its objective was to make the District Revenue Offices (*maal addas*) responsible for enforcing prior use water rights (primarily based on the customary practices); to develop irrigation in the plains (*terai*); for constructing, operating and maintaining irrigation systems; and related conflict management. Occasional investments in developing irrigation canals through the interests of the king or prime minister are also found to have occurred. However, investments in other areas like hydropower or water supply schemes were largely non-existent. This trend of water resource development and management continued in the country's water sector until 1956 when the practices of undertaking planned development activities, in form of five-year development plans, started taking roots. This period from the ancient time till 1956, hence can be observed as initial efforts of commencing and streamlining activities related to governance of water resources, mainly for irrigation. Focused on irrigation development, this phase signifies an era of evolution of rules, norms or codes related to irrigation development and defining roles and responsibilities of the informal irrigator communities involved in the development of the irrigation infrastructures. This phase; with no formal linkages between stakeholders and the state's organ or external support agencies and allied government bodies; largely benefited the elites and the ones that were close to the state's power structure and the palace.

The next period from 1956 to 1970 can be characterized as an era of planned development in Nepal. Extensive development of water resources infrastructure took place under the joint initiatives of the state and bilateral donors. Three crucial laws related to governance of water resource sector were institutionalized during this period. Keeping the emphasis on irrigation development, but with the

view of making it better planned, the Irrigation Act of 2018 was promulgated in 1961. This Act made explicit legal provisions for various water uses in addition to irrigation, distribution of water among aspiring water users, collection of water charges, sewerage disposal, etc. Another act, the Water Tax Act of 2023 was later enacted in 1966 to articulate provisions for water tax and licensing, including for drinking water. In 1967, a more comprehensive act, the Irrigation, Electricity and Related Water Resources Act of 2024 was brought in, particularly for providing a legal framework for the various uses of water. In all these Acts, the emphasis was on the state's lead roles in the governance of water sector. No provisions to involve the grass-root level stakeholders in the decision-making processes existed. Consequently, provisions for ensuring genuine representation of stakeholders in the governance of water sector, accountability, and enabling environment for participatory water resource management largely remained unaddressed.

The period from 1970 to 1985 mainly focused on the development of relatively large water projects, again with bilateral assistance. The sector concentrated on infrastructure development to achieve high economic growths. The state intensively developed large schemes and took charge of their management solely through its own bureaucracies. Promulgation of the Soil and Watershed Conservation Act in 1982; on the presumption that the state could check the prevalent mismanagement of watersheds leading to land degradation, through floods, water logging, salinity and siltation in the reservoirs; fostered the state's roles further in constructing and maintaining dams, embankments, improving terraces, constructing diversion channels and retaining walls as well as in protecting vegetation in landslide prone areas. Towards the end of this period, based on the experiences gained through pilot projects such as participatory water supply and sanitation projects (supported by UNICEF), Irrigation Management Project (supported by USAID), etc, which heavily emphasized organized stakeholders' participation in the development and management of the water related projects, a greater realization that the state-led, sectoral, and construction-oriented approach alone cannot produce the intended outputs began to take roots among the water sector policy makers.

As a consequence, the period after 1985 has been heavy on an integrated and participatory development approach in the water sector. The various laws and regulations (see Table 1) that have been enacted after 1985 stress on making congenial provisions for encouraging stakeholders' participation in the development and management of various water-related projects. Similar realizations can be seen to have evolved among the stakeholders' organizations and accordingly, initiatives have been made by them to be part of the governance process of the water resource sector in the country (e.g. formation of National Federation of Water Users' Association). Several new policies, laws, and regulations have been promulgated and interventions been made that exhibit efforts of various institutional measures taken in Nepal for improving the governance of water resources in the country.

Table 1: Chronology of Institutional Measures of Water Resources Governance

Year	Event/Activity	Rationale
1853	<i>National Code of Conduct 1910 (Muluki Ain)</i>	To provide legal foundation for prior use water rights, to develop irrigation in the <i>terai</i> , and to make District Revenue Offices responsible for construction, operation and maintenance of irrigation systems.
1961	<i>Irrigation Act, 2018.</i>	To make legal provisions for various water uses, construction and maintenance of irrigation canals, distribution of water, collection of water charges, sewerage disposal, etc.
1966	<i>Water Tax Act, 2023.</i>	To articulate provisions of water tax and licensing, including for drinking water sector.
1967	<i>Irrigation, Electricity and Related Water Resources Act, 2024.</i>	To provide legal framework for the use of water resources for irrigation, electricity production, and others uses.
1974	<i>Canal Operation Regulation.</i>	To govern water use for irrigation.
1975	Introduction of community participation approach in water supply and sanitation sub-sectors by UNICEF.	To promote community participation in the development of domestic water supplies and sanitation in rural areas.
1982	<i>Soil and Watershed Conservation Act</i>	To check mismanagement of watersheds that leads to land degradation, through floods, water-logging, salinity, and siltation in the reservoirs and to manage the government constructed embankments, terraces, diversion channels, and retaining walls as well as to protect vegetation in landslide prone areas.
1985	Initiation of the Irrigation Management Project (IMP).	To promote participatory irrigation management approach in the country.
1987	Organizational restructuring and formation of Department of Irrigation (DOI).	To bring all irrigation related activities under one umbrella.
1988	Adoption of a new working policy on irrigation development by HMG.	To institutionalize the participatory irrigation management approach.
1988	<i>Irrigation Regulation, 2045.</i>	To provide legal provisions for formation of water users' group, water distribution, realization of water charge etc. of a new working policy on irrigation development by HMG.
1992	Adoption of the <i>Irrigation Policy, 2049.</i>	To bring uniformity in implementation procedures of all institutions and to continue necessary reforms in the institutional structure and management for better service delivery.
1992	<i>Water Resources Act, 2049.</i>	To provide umbrella legislation for hydropower, irrigation, drinking water and other water uses and to establish District Water Resource Committees (DWRCs) for regulating use of water resources at the district level.
1992	<i>Electricity Act and Regulation, 2049.</i>	To facilitate and regulate the hydropower sector, with the main thrust on hydropower development.
1993	Introduction of the <i>Water Resources Regulation, 2050.</i>	To elaborate on the provisions made in the Water Resources Act, 2049.
1993	Social auditors organize the	To discuss on the issues of Arun III Hydropower

	first public hearing in Nepal.	Project.
1996	First Amendment of <i>Irrigation Policy, 2049.</i>	To update irrigation policy for rapid and sustainable development of irrigation and to adapt river basin approach and greater participation of WUAs at all stages of irrigation development.
1997	<i>Environmental Protection Act, 2053.</i>	For ensuring environmental friendliness in various development efforts.
1998	Formation of National Federation of Water Users' Association (NFWUAN).	To develop a higher tier of organization of the water users' association enabling their representation at national level.
1998	Enactment of the Nepal Water Supply Sector Policy.	To devolve the management of water supply schemes to the users groups
1998	Formation of a committee for Private Sector Participation.	To lease Nepal Water Supply Committee to the private sector.
1999	<i>Local Self-Governance Act, 2055.</i>	To strengthen the decentralization governance process in the country.
2000	<i>Irrigation Regulation, 2056.</i>	To elaborate on the provisions made in the Water Resources Act, 2049.
2001	First election of NFWUAN	For democratic appointment of the executive body of NFWUAN.
2003	Adoption of Irrigation Policy, 2060.	To promote optimal use of available physical and institutional infrastructure for expanding year round irrigation services.
2004	Second election of NFWUAN	For appointment of democratically elected executive body of NFWUAN.
2004	<i>Irrigation (First Amendment) Regulation, 2060.</i>	To legalize the Irrigation Policy, 2060.

The main institutional elements that shape the governance of water sector in Nepal at present are the following:

Water Resources Act, 2049 (1992) vests ownership of all the country's water resources in the state. It establishes a hierarchy of water needs and sets the state as the licensor of water use. It also provides for levying a water charge, as prescribed by the state, to the licensee against the use of water resources. The Act allows a licensee to make available services from the use of water resources to any other person based on mutual terms and conditions and to collect charges for the delivered services. For the water resources developed by the state, the service charge would be assessed and realized for the services rendered to water users as prescribed by a tariff fixation committee. Services to any person can be stopped in case of non-payment of such charges, unauthorized use of the services, or for any act that may contravene the predefined terms and conditions. The Act also empowers the government to make necessary rules on matters relating to water fees, charges, etc payable to the state for utilizing water resource related services.

Similarly, ***Water Resources Regulation, 2050 (1993)*** delegates the power to recognize licensed users and resolve water related disputes to the district level. It also provides for a "District Water Resources Committee (DWRC)" in each district, under the chairmanship of Chief District Officer (CDO) comprising of the

Local Development Officer and representatives from district level Agriculture Development Office, Forest Office, Drinking Water Office, Irrigation Office, Electricity Project Office, offices related to utilization of water resources, and the District Development Committee.

Further, *Irrigation Policy, 2049 (Second Amendment 2060) (2003)* enforces the concept of decentralized, autonomous, and self-financed management of the irrigation schemes. In management-transferred surface or groundwater irrigation systems, the state would not collect irrigation service fees. The respective WUAs can collect such fees on their own from their beneficiaries as per the operation and maintenance need of the particular scheme.

As observed above, on the evolutionary path of improving governance of water sector, Nepal has come a long way in terms of decentralizing the related tasks and responsibilities. Particularly, after the re-advent of multi-party representation in the government structure in 1990, the process of various stakeholders' involvement in water sector governance (facilitated by institutional changes both in terms of rules and tools) has gained a faster pace and is slowly maturing.

Currently, the organizational structure of water administration in Nepal has three levels: coordination and policy; implementation and operational; and regulatory. At the level of coordination and policy, the organizations in place are: a) National Development Council; b) National Planning Commission; c) National Water Resources Development Council; d) Water and Energy Commission; and e) Environment Protection Council. Similarly, at the ministry level, six relevant ministries and the Water and Energy Commission Secretariat is involved.

At the implementation and operational level, seven government departments and semi government organizations like Nepal Electricity Authority and Nepal Water Supply Corporation are involved. The local government bodies such as District Development Committees (DDCs), Village Development Committees (VDCs) and Municipalities as well as NGOs like WUAs are also in place at the operational level. The prevalent policy and regulations have entrusted the governance of water at the local level to the Water Users' Associations (WUAs) formed by the representatives of the beneficiary. This institution of local organizations with a federation at the central level (viz. NFWUAN) has been projected as the key element at the operational level.

Achievements

Various institutional measures taken over time in Nepal clearly show a substantial shift in the country's approach for governing water resources toward decentralized and user-centered participatory management. Prevailing policies and legal provisions reveal that the government is attentive and willing to involve the stakeholders in the decision making process of governance of water resources.

Several measures are dedicated to improving governance by empowering local organizations (Brunner et al, 2002). Such measures, favorable to a pluralistic system of conducting the affairs of the state, have aided behavioral changes in government institutions and strengthened of non-government institutions.

Recent legal provisions are focused towards creating an enabling environment. Irrigation Policy 1997, encompasses mechanisms for maintaining coordination between agriculture and irrigation related entities at various levels. Similarly, National Water Supply Sector Policy of 1998 visualizes a shift for the state organ responsible for water supplies from the traditional role of service provider to that of a facilitator owing to eventual handover of drinking water supply schemes to the users' committees and/or private sector management. Along the same line, the hydropower policies encourage private sector's involvement. The provisions related to authority delegation (decentralization of government functionaries; development of the beneficiaries' organizations; promotion of their active participation in planning, construction, operation and maintenance; water licensing, linkage with the allied agencies and local administration bodies, etc) are all crucial for creating an enabling environment for the evolution of self-governed beneficiaries' organizations (Freeman et al, 1989; Prasad, 1994). They are also essential for ensuring tripartite accountability among the beneficiaries, related state functionaries, and local government bodies (Shivakoti, 1991; Prasad, 1994; Starkloff et al, 1999).

Creation of numerous WUAs has made it possible to maintain organizational linkages among themselves as well as with other entities particularly for resource mobilization. Most WUAs face severe resource constraints but have been able to draw some resources from DDCs and VDCs. In addition to providing small-scale financial and material support for local infrastructures, VDCs are also involved in resolving disputes at the local level whenever problems arise between water users.

Contributions of the DDCs in the development of water resources, especially in the micro-hydropower systems, have been encouraging. In many instances, the users' committees have initiated the development and management of micro-hydro schemes. The DWRCs have also slowly started undertaking several key activities as district level water management entities e.g. registering WUA for different uses of water, requesting DDC/VDC to resolve conflicts in case of complaints, and recommending government agencies for the construction of the new infrastructure at the request of the users.

Shortcomings

Despite all these various institutional measures, the practice for people-centered governance is not yet complete. There is a general lack of coordination among institutions related to water sector. Overlap of authority and confusion regarding responsibilities and accountability are prominent among different levels of

organizations and institutions arising out of non-harmonization of relevant Acts, Regulations, and Procedures, particularly with regard to fees to be charged for a license, rates for royalty, registration of the WUAs, service fees and dispute settlement mechanisms and other regulatory provisions.

Many of the ideas introduced in the policy and related rules have not yet been tried. The ongoing disputes over the implementation of Melamchi water supply project that involves trans-basin diversion is an example such deficiency, where stakeholders have long been accusing the state of deliberately keeping them out of the decision-making process and thus, of undermining the principle of participatory governance in water sector (<http://www.southasianmedia.net>). Moreover, the compliance rate of the existing legal provisions is observed to be quite low (Sharma and Onta, 2002). The water use arrangements among various sectors are generally institutionalized through the agreement between the water use activities. However, customarily the irrigation receives first priority in Nepal. The development of new water use activity is often based on the informal arrangements among the water users of different sectors.

Recent studies indicate that the groundwater resources are not properly conserved and used due to lack of effective legal provisions (WECS, 2002). Discussions are still underway to include it in a more comprehensive water resources act, which will cover governance of groundwater use (in combination of surface water sources) for different purposes like drinking, industrial, commercial and other uses. Municipalities and private sector are expected to play a magnified role in optimal and sustainable use of groundwater.

Since no organization exists which looks after the overall water balance of the river basins and different departments are concerned only with their own specific use an integrated approach in the utilization of water resources has been limited only to theory. Among different water use activities, except for irrigation and electricity, most are administered privately.

The WUAs have been found to remain effective only during the construction of the irrigation or electricity scheme and become non-functional during the operation and maintenance phase (Sharma and Onta, 2002). The regular task of operation and maintenance does not seem to motivate the WUA members to actively get involved.

The government's intentions of involving the local governments in the management of natural resources (including water) is still far from being accomplished. The role of VDC in water resource management is generally confined to providing occasional financial support for constructing drinking water and maintenance of irrigation systems. VDCs are rarely proactive in managing water resources at local level, mainly due to their unclear role at present. Though, the Local Governance Act provided a sound foundation for an active role of the

DDCs, they hardly get involved in the WUA formation process or in the issuance of licenses to the private sector for water resources development.

The DWRCs are yet to start functioning in almost half of the 75 districts in Nepal. Most existing DWRCs do not meet even once a year. This was primarily due to low priority given to the task especially by the Chief District Officer (CDO), the ex-officio state-appointed chairman, who is hardly accountable to beneficiaries in water resources sector (Sharma and Onta, 2002). Most other members in DWRCs are appointed and not genuinely represented from among the beneficiaries.

The involvement of INGO/NGOs in water resource development is not evident except for the support of few organizations like Action Aid, International Development Enterprises (IDE), Farmer Managed Irrigation Systems Promotion Trust (FMISPT), etc.

DISCUSSIONS AND CONCLUSIONS

Institutional arrangements for improved water governance generally imply three mutually complementing constituents: beneficiaries' organization at different scales; rules and regulations of the organization; and relevant legislative arrangements of the state, or of the states (in trans-boundary cases) in which they operate. Most of the above-discussed institutional measures taken in Nepal have strong linkages with these key attributes of good governance in water resources sector, or for that matters, any natural resource sector (Brunner et al, 2002).

Most shortcomings either emerge from the present institutional weaknesses and/or require solutions that necessitate further institutional changes. The National Water Resource Strategy of Nepal (2002) also profoundly highlights the absence of an appropriate institutional framework for effective integrated water resources management in the country and highlights the need for creating new organizations and redefining functions and structures of some existing organizations to achieve the objectives enumerated in the strategy document.

In collaborative management of any natural resources, an effective beneficiaries' organization is strategic in securing the kind of collective action that defeats free-riding and secures control over resource appropriation and allocation to its members. Beneficiaries' organizations, articulated at different scales, provide a promising means for the resources users to adopt general rules to local contexts, with local knowledge, and mobilize local resources for common benefits (Freeman et al, 1989, Brunner, 2002). In addition, they create a space for authentic participation in the development of community and society, and conserve scarce resources by promoting local responsibility and accountability. State and allied external agencies are expected to support and assist in the growth of these beneficiaries' organizations (ibid).

Even though several of the adopted institutional measures in Nepal have these beneficiaries' organization at their core, appropriate importance has hardly been given to the key necessities of such organizations to perform effectively. If one turns to examples of effective beneficiaries' organizations around the world (e.g. Murray-Darling River Basin Commission, Northern Colorado Water Conservation District, etc), one tends to find four key features generally present (Freeman et al, 1989). Four key features were found to be common among all effective beneficiaries' organizations around the world. The first is the organizational self-autonomy which means that some form of local organization based on the principle of voting and checks and balances in the leadership structure exists. The representatives are accountable directly to the stakeholders and that these organizations are independent of any local or central government influence other than legal certification and auditing.

The second feature is the allocation of water and collection of service fees by shares, meaning that a beneficiary's water right in the association's collective service delivery is roughly proportional to the contributions made by that same individual to the cost of operating and maintaining the water resource system annually, in cash, produce, or labor equivalent. The third key feature is the presence of an organized water delivery work force, however small, appointed and supervised by the organization leadership to oversee the management of water in the coverage area of the resource system. The fourth feature is some form of organized record keeping, no matter how rudimentary, designed to maintain records on labor mobilization, donations and/or fees, water service delivery scheduling, organizational membership, and some rules about how water is to be managed and divided among beneficiaries during normal and unusual water supply conditions.

These key features are unimaginable in an organization without 'enabling environment', 'genuine stakeholders' representation in the organization', and 'accountability'. These characteristics are the building blocks for the decentralized management of common pool natural resource systems (Freeman et al, 1989; Ostrom, 1992).

Various institutional measures adopted in Nepal do reflect a vision for addressing these key characteristics but efforts to ensure that they are in place have largely been lacking. Instead, the focus has been on more and more additional institutional measures such as structuring and restructuring of state's different functionaries, defining and redefining their roles, promulgating one after another legislation, etc, without paying much needed attention to the aforesaid key characteristics at the local level. Most of the shortcomings discussed above substantiate this need in Nepal's context.

REFERENCES

- Brunner, R. D., Christine H. C., Christina M. C., Robert, A. K., and Elizabeth A. Olson. 2002. Finding Common Ground: Governance and Natural Resources in the American West. Yale University Press.
- Freeman et al., D. M., 1989. Local organizations for social development: concepts and cases of irrigation organization. Westview special studies in social , political, and economic development. Westview Press, Boulder, Co, USA.
- Ostrom E., 1990, Governing the Commons: The Evolution of Institutions for Collective Action, Cambridge University Press.
- Prasad, K. C., June 1994. Local Irrigation Organization in Nepal. Professional paper for Master's in Sociology, Colorado State University, Fort Collins, CO, USA.
- Sharma, K. and I. R. Onta, 2002. Integrated Water Resources Management. Paper presented in WECS/DOI/IWMI workshop on Policy Dialogue on IWRM, Kathmandu, Nepal.
- Starkloff,R., Upadhyay,S., Hemchuri, H., and Prasad, K., 1999. Functional Status Assessment of the Panchkanya Water Users Association Nepal. Research and Technology Development Branch, Irrigation Management Division, Department of Irrigation, HMG/N and International Water Management Institute (IWMI).
- Shivakoti, G. P., 1991. Organizational effectiveness of user and non-user controlled irrigation in Nepal. Ph. D. Dissertation. Michigan State University.
- WECS, 2003. National Water Resources Development Policy. Water and Energy Commission Secretariat, His Majesty's Government of Nepal, Singha Durbar, Kathmandu, Nepal.
- WECS, 2002. Water Resources Strategy, Nepal. Water and Energy Commission Secretariat, His Majesty's Government of Nepal, Singha Durbar, Kathmandu, Nepal.