

Participation and governance in Local water Management

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Abstract

This paper is about participation in irrigation water management. It questions the ongoing approaches to local water management emphasizing participation and governance. It argues that such approaches still reveal several shortcomings especially on their simplistic views on local organization and participation and calls further shift in current approaches to initiate and sustain local water management. Such a new approach needs to consider wider support and networking from relevant stakeholders and be adoptive with dynamic nature of different water control dimensions, so that complex problems of water management can be locally developed and sustained. Examples are drawn from case studies materials from Nepal.

1. Introduction

The paradigms for rural development pursued and practised in developing countries have transformed greatly since the 1950s. Failure to achieve intended results through transfer of technology policies caused shift towards a more user-centred approach to development, and 'people first' development model based on popular participation gained popularity in the 1980s and 1990s (Brukley, 1993; Chambers, 1997; Cernea, 1991). Structural adjustment and neo-liberal policies of the 1990s further shifted attention from participation to local governance.

The focus of water resources management has also shifted accordingly, from technology transfer towards decentralized and user-centred approaches emphasizing participation and local organizational development as explained by Clyma (1989), Uphoff (1986), and Korten (1984). This has changed the development problematic in two ways: Firstly, the focus has shifted to the promotion of local water management through user organizations; secondly, design approaches have also shifted towards participatory design processes to support organizational evolution. More recently, attention has been shifted towards promotion of local governance and transfer of irrigation management to user groups commonly referred to as Water Users Associations (WUAs), has been central in the irrigation reform process (Vermillion, 1999; Meinzen-Dick *et al.*, 2002, Johnson *et al.*, 2002). This shift has been in response to structural adjustment and neo-liberal policies of the 1990s and participation of relevant stakeholders is considered as prerequisite to create effective forms of local organization to govern and manage irrigation water.

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This paper traces the evolution of changes from participation to local governance in irrigation water management. It reviews the current participatory approaches to initiate and support organizational evolution to take up water management and their strength and weakness. It argues that governance involves divergence forms of regulation and control, and programs seeking to establish local governance in irrigation water sector has to acknowledge these different water control dimensions and create necessary legal and political support mechanisms without limiting to participatory support process and capacity development of local organization.

After this introductory remarks, the paper in section two presents different development context of participation. It then reviews current approaches of organizational development process to govern and manage irrigation water and also explores role of support process in organizational evolution. It then presents case study materials from irrigation management transfer project in Nepal. The paper finally ends with concluding remarks in section 5.

2. The different development context of Participation

Participation can be defined in many ways and is often seen as transaction between the farmers and the engineers (or facilitators)². This paper rather looks at the origins of participatory efforts and the methods used. Participation does not operate in vacuum, it is linked with certain development objectives. It is argued here that there are different development contexts linked to participatory frameworks for intervention, and there are different domains of action in participation (Khanal, 2003, Vincent and Khanal 2002, Vincent 1997). The different development context of participation do have different concepts of innovation and different sets of participatory methodologies linked with them.

Development context 1: Economic development and modernization

In this context, participation is an approach (by agencies) to induce increases in performance or impact, through providing conditions or incentives that enable farmers to take on new responsibilities and opportunities. Participation here has moved beyond project execution to policy reform and self-governance, and even been considered the way to operationalize decentralization as the motor for democratic transformation (Cornwall, 2001). Innovation then concerns new activities that improve linkages between resource use and production – new techniques, artefacts or institutional relations. In irrigation water management, its primary focus is on institutional reform to both local organization and the irrigation bureaucracy, but also heavily focused to system modernization to provide better working conditions for farmers. It lays emphasis on participatory design processes to support evolving organization, and calls for accountability between the irrigation agency and the WUA and between the WUA and the farmers. Thus, participatory approaches that allow local negotiation and evolutionary change rather than blue-print models work best. However, it is vulnerable to blueprint ideas about WUA development and new technologies, and over-expectation of what users can do. Bureaucratic reform is a time-consuming process, and is often outside the framework of funding agencies. This context of participation is the backdrop to the ongoing Irrigation Management Transfer programs (IMTP) and its policy tools and intervention approaches.

² The detailed account of participation is beyond the scope of this paper. For more discussions, see also Khanal (2003), Vuren 1998, Musch, 2001, Cook and Kothari, 2001.

Development context 2: Joint planning and problem solving

Here, participation is a process through which stakeholders influence, share control and work together to achieve desired change. Innovation is shown through the changed behaviour of the people involved, and the sharing of knowledge and skills. This context focuses on the generation, transfer and exchange of knowledge as a means to beneficial change. It recognizes that technology is not neutral and technological change should reflect local needs and knowledge. Also that people have a right to self-determination over their development. In the field of technology development in this context, Participatory Technology Development (PTD) has got considerable attention as an approach. However, the technical biases of many engineers, and their sense of status that makes them unwilling to accept farmers as partners and lengthy bureaucratic process often yields failure to make design process participatory.

Development context 3: Social inclusion, improved equity and reduced vulnerability

Participation here is organized efforts to increase control over resources and regulative institutions in given situations on the part of groups and movements of those hitherto excluded (a definition from an ILO program). Innovation is the delivery of different benefits to different people. This context recognizes the tensions and complex politics of negotiating change in many different arenas, but needs highly motivated and conscientized actors to empower change. It is committed to capacity development of the users groups and concentration on the certain marginalized groups. However, the danger may come from its conscientizaion and political action which may lead to collapse of existing management arrangements without new forms to replace it.

Water management in recent years is more focused to the development context 1 and the other two are seen as supporting elements to achieve better service provisions.

Domains of participation

There are also different domains of actions in participation between users, and other social actors. These different stakeholders can have different interests and sphere of influences in local water management. The different development contexts of participation together with the different domains of interactions constitute a ‘Participation Complex’ which shapes the outcomes of local water management. In a real-world situation, a program execution can involve all the different development contexts together, requiring understanding of the clashes these can bring between people with different aims and objectives in participation.

3. Current approaches to local Water Management

The current approaches to local water management can be summarized into two key actions:

- development and empowerment of Water User’s Associations (WUAs) as new form of governance to govern and manage irrigation water
- Supporting the new organization through participatory design process to help build up their capacity to manage water and provide better working conditions through more compatible technologies and water management practices

WUAs as new form of governance

Work on WUA design and development has generally followed two approaches to institutional design. Researchers like Ostrom (1992) emphasizes governance as a dimension of management involving the generation of rules for management practice³. Another group is more focused in identifying conditions under which the WUA can perform irrigation management tasks (see for example, Vermillion, 1995, Vermillion and Sagardoy, 1999, Groenfeldt, 1999, 1996; Meinzen-Dick *et al.* 2002). They are more focused on organizational type, size of organization (see for example freeman, *et al.*, 1989), compatibility of structures and clear water rights. Both of these approaches are more concerned over finding appropriate conditions and generating rules to govern and manage irrigation water. However, they fail to understand governance as possible under divergence forms of regulation and control.

These discussions are based on the 'functional model' of the WUA, which describes conditions for the management to work. It is guided by the assumptions that the WUAs are non-partisan, non-political and homogeneous bodies, and perform the irrigation management tasks as designed. These discussions do not show the conditions under which accepted rules and organizations come into being. To understand the dynamics within a WUA and their functioning, their political character has to be recognized

These discussions also fail to recognize how organization needs external support and networking to govern and manage irrigation water. They are also weak in the way they concern local socio-political dynamics in organizational evolution. Likewise, they also fail to explain how water management is linked to wider control dimensions related to technical and agro-ecological environment which presents different opportunities and challenges to local management⁴.

Participatory Support Processes and local water management

Participatory and process-based intervention emphasizing participation of stakeholders and social learning has been widely called for to support water management. However studies have shown that they fall short in real practice. Though efforts have been made to shift away from blueprint towards the process approaches, in reality, blue-print ideas about project planning and implementation dominates the intervention, and learning and participation are mostly confined at local level of project implementation. Hierarchical organizational structure, lack of organizational learning, shorter time frames, failure to link the project with the broader development objective all pose barriers in maintaining participatory processes. Participatory and process-driven approaches have become a sort of 'good theory, poor practice'. There is a need for fundamental changes in the way projects are designed and implemented to achieve participatory development in real world situation.

Another major constraints in embedding participatory approaches in water management comes from lack of initial learning of the system environment both by the users and outside facilitators. Water resources systems including irrigation systems are sociotechnical systems

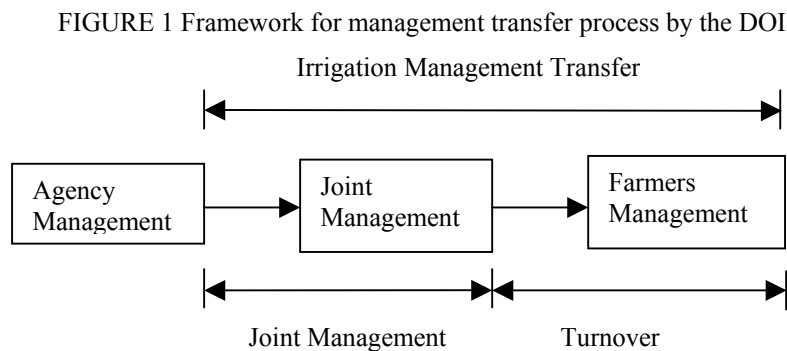
³ Governance is seen here as diverse forms of regulation and control used in management conceptualised by a governing institution: a WUA, is only one form of such regulation. Ostrom differentiates between three different layers of rules: the operational rules, collective-choice rules and constitutional-choice rules, which cumulatively shape an irrigation system.

⁴ See also Agrawal (2001) and Kloezeon (2002) for further limitations of these approaches

and technology of the system shapes and is shaped by ecology and society. Designing for participation for water management should thus begin considering both the human and the physical dimension of irrigation systems. The strength of participatory design depends first on what people, both users and designers, know about the system, and its opportunities and constraints. Use of participatory approaches without understanding of system environment ultimately leads to its instrumental use without any scope for beneficial change.

4. The case of Irrigation Management Transfer in Nepal

Since 1990, the government of Nepal began the process of transfer of irrigation management in Agency-Managed Systems to new local organizations. The reasons for pursuing this reform in the irrigation sector have been three-fold. First, there has been increased dependency on the government for system development and management, whereas the performance of the systems has remained relatively poor. Second is the dependency of water resources sector development on donor support, who now favour less government and more private-sector involvement in development activities. Thirdly, it is also inspired by the successful tradition of farmers' managed irrigation systems (FMIS) in the country⁵. The process was formulated around decentralized and user-centred approaches emphasizing participation and local organizational development. The framework of IMT in Nepal is shown in Figure 1 (Laitos, 1992).



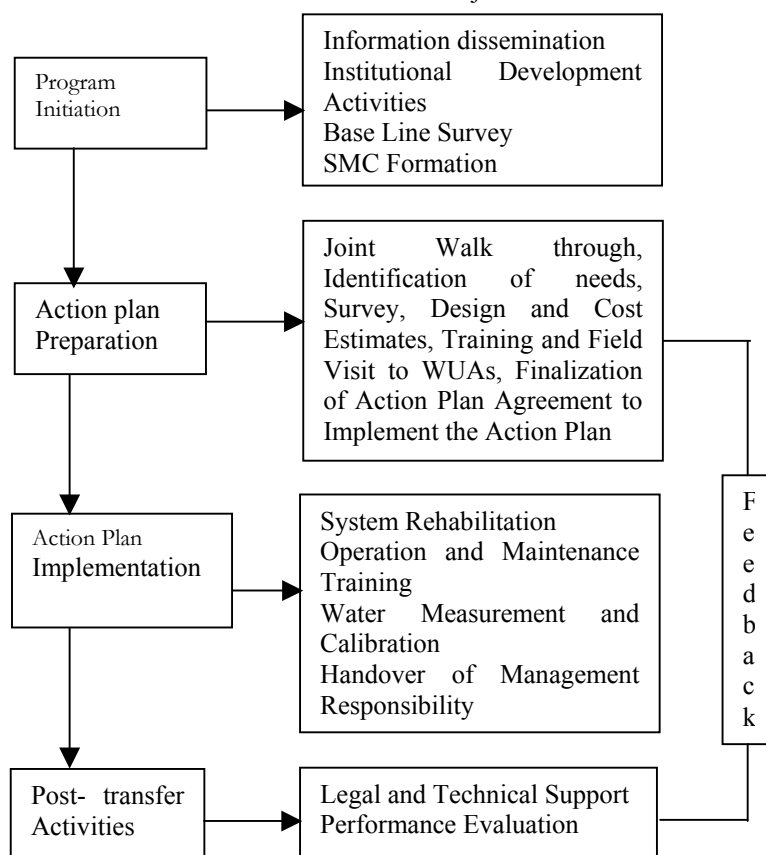
The turnover program aims at the complete transfer of operation and maintenance (O&M) responsibilities of small and medium scale irrigation systems to legally recognized water user groups. ‘Turn-over’ is said to occur if the whole system is transferred to the WUA. Joint management can follow several forms depending upon the size and technical complexity of the irrigation system. The most general form for the joint management is that the irrigation agency operates and maintains infrastructure to a certain point of delivery, after which a local organization takes over responsibility of water delivery (Molden 1998). However, joint management can also be achieved without partial turnover of the system. In this, a shared responsibility is defined between the state and the users for the O&M of part or whole of the system. The Joint management domain in Figure 2.1 may be an intermediate stage to achieve full turnover or a final destination for the management of large-scale irrigation projects.

The project framework for implementing the IMTP as adopted in Nepal is shown in Figure 2. The process has been developed on the basis of experiences from previous participatory intervention programs like IMP, ILC and ISP. It consists of four stages: the program initiation

⁵ Irrigation systems in Nepal are classified as Agency managed, Farmers managed, Groundwater systems and private systems.

and institutional development phase; the action plan preparation phase; the action plan implementation phase; and post-turnover support phase (ADB, 1995). The action plan forms the basis of program implementation. It specifies the activities to be carried out during implementation, and the roles and responsibilities of different parties involved in the process. and further support to them through participatory design innovations. It also requires new arrangements between the government and the WUA for the system management. This model of policy implementation for management reform is similar to those widely mentioned in irrigation literature (for example Vermillion and Sagordoy, 1999; Geizer, 1996; and Groenfeldt, 1998). It is influenced by the idea of designing irrigation policy to create conditions under which desired institutions would successfully emerge, for example that would ensure functional infrastructure, debate type and size of organization and allow user involvement at all stages and levels of project implementation.

FIGURE 2.2 Project framework for IMTP implementation



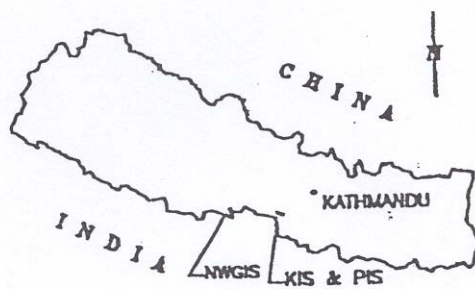
The framework shows a top-down approach to designing and implementing policy reform, which Kloezen (2002) refers to as institutional engineering. Farmers were not involved in the design of this framework, neither were they informed about the policy reform. The reform itself was not demand-driven, and was induced by the government, as explained earlier. Farmers were told by the DOI that they had to participate in the reform.

Figure 2 clearly shows that the Irrigation Management Transfer (IMT) program in Nepal involves both institutional reform and technical rehabilitation to facilitate decentralization of irrigation management. However the primary concern is that of a modernization approach to induce institutional innovation.

Initially, the IMT program was implemented in three irrigation systems, namely Khageri Irrigation System (KIS), Panchakanya Irrigation System (PIS) and the Nepal West Gandak Irrigation System (NWGIS). They differ in size, have different social and physical environments and different histories of water management organization. All are gravity irrigation systems supplied by river diversions. Eleven projects were selected to begin the management reform in the country and these three systems were in the first phase of policy implementation. There were different reasons for their selection at the first phase. Khageri and Panchakanya were selected because farmers there were innovative and educated. They also have simple water control structures and a relatively water-scarce situation, which is considered to be favourable for inducing collective action. West Gandak was selected because of its potential to provide year-round irrigation to farmers.

The IMT programs in all the three systems were initiated in the mid-nineties. The size and location of the systems are shown in Table 1.1.

Location of the three Irrigation Systems



Sizes and location of Irrigation systems

<i>System</i>	<i>CA</i>	<i>District</i>
PIS	600 ha	Chittwan
KIS	3900 ha	Chittwan
NWGIS	8700 ha	Nawalparasi.

The Outcomes of the management reform

However, they have quite different outcomes in terms of their management performance though they were implemented under the same framework by the same implementing agency. In Panchakanya, there has been improvement in water availability, increase in irrigated area and change in cropping pattern. Local people believe in their organization: the WUA is accountable to its members and is financially capable to take up new management responsibilities. In Khageri, there has been improvements in water delivery schedules, an increase in irrigated area, and change in cropping pattern, but not on the scale seen in Panchakanya. The system falls short in financial viability. However, farmers have strong support to their organization, which has fought battles externally to defend system water supply. Whereas in West Gandak, the new management arrangement is dysfunctional. The WUA has lost its credibility and acceptability at local level. Attempts to improve system performance through local organization here has been rather disappointing resulting in frustration and demoralization of the local community.

Incidentally, the scale of change in these systems is in parallel with their service area: the Panchakanya is the smallest among the three with 600 ha area and has better outcomes in terms of service delivery whereas the West Gandak, the largest with 8700 ha command area, has experienced in management incompetence. However, these variable outcomes cannot be looked at simply with respect to their area, but also at the challenges of regulation and control

of the wider environment (both socio-political and the physical-technical) of system management.

Both Khageri and Panchakanya have relatively simple water control structures and free from threat of inundation and flooding. Farmers are relatively more educated and innovative and knowledgeable in collective action in irrigation development and management. The WUAs were able to craft their institutions as needed, expanded their networks and provide continuity in water management. On the other hand, the West Gandak, has much complex bio-physical environment and water management is a daunting task for new local organization. Besides, farmers here were less aware of collective action in irrigation development and management. The WUA was seen as platform to check the strength of the political parties and WUA agendas were heavily focused by the party politics. As its command area covers two parliamentary constituencies, the WUA became a springboard to jump ahead in their political career for aspirant politicians. Farmers on the other hand were silent because of the socio-political dependence on the politicians.

5. Conclusions

Irrigation Water management is a complex dynamic process constructed between various stakeholders. Local management needs actions beyond local level, where local socio-political dynamics, external support and networking, effective accountability mechanisms between different stakeholders might guide the organizational evolution, rather than certain fixed set of design principles. Likewise, participatory support processes needs to be practiced beyond an instrumentalist perspectives and focus on social learning rather than on rigid planning procedures. Such processes should be initiated only after adequate learning of the system environment surrounding the water use systems and must be able to translate its opportunities and constraints in practical water management.

References

- Agarwal, A. 2001. Common property institutions and sustainable governance of resources. *World Development*, Vol 29, No.10: 1649-1672
- Biggs, S. and Grant Smith. 1998. Beyond methodologies: coalition building for participatory technology development. *World Development*, Vol. 26 (2): 239-248.
- Brett, E. A. 1996. The participatory principles in development projects: the cost and benefit of co-operation. *Public Administration and Development*, 16: 5-19.
- Burkey, S. 1993. *People First: A Guide to Self Reliant Participatory Rural Development*. ZED books limited, London and New Jersey.
- Cernea B, M. 1991. *Putting people first. Sociological Variables in Rural Development*. Oxford University Press.
- Chambers, R. 1997. *Putting the First Last. Whose Reality Counts?* Intermediate Technology Publications: London.
- Clyma, W. 1986. Irrigated agriculture: a comparative analysis of development concepts. In: K.C Nobe and R.K. Sampath (Eds.). *Irrigation Management in Developing Countries: Current Issues and Approaches*. Studies in Water Policy and Management. No.8, Westview Press/ Boulder and London.
- Cooke, B. and Uma Kothari. 2001. *Participation: The New Tyranny?* Zed Books, London. New York.
- Cornwall, A. 2001. Beneficiary, consumer, citizen: changing perspectives on participation for poverty reduction. Sussex, Institute of Development Studi
- Ellis, F. and Stephen Biggs. 2001. Evolving themes in rural development 1950-2000s. *Development Policy Review*, 19(4): 4370-448
- Freeman, D. M. and J. Wilkins-Wells. 1989. *Local Organizations for Social Development: Concepts and Cases of Irrigation Organization*. Boulder: Westview Press.

- Johnson III, S. H, M. Svendsen and F. Gonzalez. 2002. Options for institutional reform in the irrigation sector. Discussion paper for the international seminar on participatory irrigation management 21-27, April 2002, Beijing.
- Khanal, P. R. 2001. Irrigation management transfer in two irrigation schemes in Chittwan Valley: Implementer's experience. In Gautam, U. and S. Rana (Eds.). *Challenges to Farmer Managed Irrigation Systems*, FMIS Promotion Trust, Kathmandu, Nepal.
- Kloezen, Wim H. 2002. *Accounting for Water: Institutional Viability and Impacts of Market-Oriented Irrigation Intervention in Central Mexico*. PhD Thesis. Wageningen University, the Netherlands
- Meinzen-Dick, R., K. V. Raju and Ashok Gulati. 2002. What affects organization and collective action for managing resources? Evidence from canal irrigation systems in India. *World Development*, Vol. 30 (4): 649-666.
- Musch, A. 2001. *The Small Gods of Participation*. PhD Thesis. University of Twente, Enschede, The Netherlands.
- Narain, Vishal. 2003. *Institutions, Technology and Water Control: Water User Associations and Irrigation Management Reform in two Large-scale Systems in India*. PhD Thesis. Wageningen University, The Netherlands.
- Ostrom, E. 1992. *Crafting Institutions for Self-governing Irrigation Systems*. Institute for Contemporary Studies Press, San Francisco, USA.
- Uphoff, N. 1986. Getting the process right: improving irrigation management with farmers' organization and participation. Working paper, Cornell University, Ithaca New York.
- Vermillion, D. and Sagardoy, J. 1999. *Transfer of Irrigation Management Services*. FAO Irrigation and Drainage Paper 58.
- Vincent, L. 1997. Agro-ecology, participation and irrigation: Learning from different system concepts. Paper presented at a Workshop on more from less: better water management. Cranfield University, September 1997.
- Vincent, L. and Puspa R. Khanal. 2003. Innovation in irrigation: Working in a 'participation complex'. Case study summary 17. In: B. Pound, S. Snapp, C. McDougall and A. Braun (Eds.). *Uniting science and participation for sustainable livelihoods and adaptive natural resource management*. Forthcoming, Earthscan Publishers.
- Vuren, G. Van. 1998. *Farmers Participation in Water Management*. WAU-KIVI-ICID, Balkema, Rotterdam.
- Wield, D. 1999. Tools for project development within a public action framework. *Development in Practice*, Vol. 9 (1&2): 33-42.