

## A Critique of the World Bank's Sustainable Water Framework

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**Abstract:** This paper does not deny the World Bank's effort in getting water management right in developing countries. It, however, raises some concerns with the Bank's water policies that may have undesirable impact on poor people's access to water and livelihoods on the ground. It unpacks the assumptions of the ideas, such as community participation, decentralisation, user-charging, good governance and strict rule enforcement. It suggests that poor people may have to bear disproportionately high costs if these policies do not work. Particularly, this paper challenges the Bank's water model which assumes that water users are rational and opportunistic and inadequately considers the complexity of human motivations and structural forces in shaping effective water governance. The economic understanding of institutions and the over-emphasising of laws, regulations and formal groups, plays down the role of socially-embedded institutions in influencing water-user behaviour. It draws on examples and case studies of the water sector in developing countries and underlines the importance of building a more socially-informed model by incorporating human values into water governance and seeking a deeper understanding of social context and cultural diversity. This paper highlights the needs to achieve water sustainability, without compromising poor people's social networks and livelihoods of the poor. This paper lays out five principles that matter to the success of water interventions: (1) history and culture of social relations; (2) existing relations of cooperation that shape water participation; (3) people's livelihood priorities; (4) individuals' preferred institutional environment; (5) the interplay between new and old institutions that channels that people can get access to resources and exercise agency.

**Key words:** Institutions • Water • Poverty • Agency • World Bank

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### INTRODUCTION

The search for successful water management models is crucial to achieving global poverty reduction, especially billions of people in developing countries still lack access to clean water. From the 'Water Resources Management Policy Paper' [1] to the recent 'Water Resources Sector Strategy' [2], the World Bank has put endless effort in getting the water management right. It has proposed a 'sustainable water management framework' (hereafter I call it the 'Water Framework') which has widely been applied in many poor countries. The six key elements of the Water Framework include: community participation, decentralisation, cost recovery, good governance, strict enforcement and monitoring and appropriate use of technology. The Framework aims to bring about water efficiency, social equity and poverty reduction, without compromising ecological sustainability [2]. As Lemos and de Oliveira [3] argue, the Bank's water model is ambitious, touching not only upon policy

process and practices such as transparency and democratic decision-making, but also upon policy outcomes, through more efficient water management.

The influence of the Water Framework should not be under-estimated. The United Nations Development Programme, OECD, European Union and the International Water Association have applied similar guiding principles in their constituencies [4, 5]. The Water Framework recognises the pre-conditions for improving water resources, such as economic and political reforms. It acknowledges the role of 'private-public' synergy in water governance. Most importantly, it highlights the social dimensions in water planning by recognising the role of cultural norms and social relations in aligning private and collective interests.

The Water Framework, however, attracts some criticisms. Critics suggest that the universal application of the Water Framework risks homogenising the diversity and complexity of cultural characteristics of water use and distribution in different countries. Mehta [6] argues that

power, gender and access issues are not properly addressed in the Bank's water policies. Additionally, defining water as purely economic commodity plays down the role of water as a community asset [7].

This paper will focus on the impact of the Water Framework on the livelihoods and social networks of the poor and examine whether goals of social equity, poverty reduction and water efficiency can be achieved simultaneously. It also unpacks the underlying assumptions of the Water Framework, especially on human incentives in water using and on the role of institutions in shaping human actions. This paper expands the scope of investigation, from water governance to common-pool resources management in developing countries.

This paper begins by introducing the Bank's Water Framework and its underlying neo-institutional features. It will then discuss the concept of social embeddedness and consider how water distribution and access to water are mediated by social norms, human relationship and culture. Subsequently, it will mention the three types of institutions and analyse the impact of clearly-defined boundaries, strict rule enforcement and use of sanctions. It will conclude by explaining how a more socially-informed water framework helps secure more stable livelihoods of the poor.

**Theorising Sustainable Water Framework:** The World Bank's Water Framework stresses the essence of co-management. Stakeholder participation represents a bottom-up approach in that community members are encouraged to participate in water management and decision-making. The aim of participation is to 'influence policy formulation, alternative designs, investment choices and management decisions affecting their communities' [1]. The objectives of information sharing, increasing transparency and open communication are to enable different stakeholders to share the responsibility for water management. In return, the incentives for cost recovery and service quality will be improved.

Decentralising decision-making processes and delivering water services from central government to local governments, private sector and community organisations, such as water user associations, are intended to improve quality of services [1]. Assertions are made that centralised practice involves high administrative costs and results in low efficiency. The World Bank suggests that: 'experience demonstrates that decentralized service delivery can break the vicious cycle whereby service level declines' [8].

Privatisation and deregulation carry hand in hand. They are another essential part of the water reforms. Deregulation re-defines water ownership and shows a reduction of government control in water governance. It is claimed that implementing privatisation by selling the previously state-owned water enterprises to private investors brings competition and therefore better services. A new water pricing system and the principle of full recovery of costs of water services are considered to provide adequate incentives for efficient use of water [9].

The Water Framework pays particular attention to effective monitoring and enforcement mechanisms. They lay down clear rules about what water-using behaviour is desirable. Sanctions are applied to 'bad apples' who fail to comply with the regulations. The role of technology in the framework is different from the old practice. While technical knowledge and water-saving innovations remain critical in providing reliable water delivery, more emphasis is placed on minimising the negative environmental impact caused by technologies.

The Bank's Water Framework is largely shaped by neo-institutionalism [10]. The failure to achieve better water management, the neo-institutionalists claim, lies in inadequate incentives, weak governance and inefficient regulatory and legal arrangements. The market alone is unable to achieve both water efficiency and social equity at the same time because of the complex nature of water.

To address the limitations, the solutions lie in restructuring water-related institutions so as to get the incentives right, to redefine water as economic goods and to change the role and perception of the public and private sectors in the water industry. Success in attaining social equity in access to water, economic efficiency and ecological sustainability lies in having 'right' institutional arrangements. The clearly-defined organisational structures help to identify rights and responsibility of different stakeholders. High level of public participation generates social capital and sense of ownership that facilitates water planning. Effective enforcement and monitoring is crucial in water governance.

Assigning clear sets of rights and responsibilities to water users and providers helps them know what is expected of them [11]. Sanctions, such as threatening to cut water supply, are used to deter free-riding behaviour and to ensure water efficiency. These new institutional arrangements are claimed to be a low-cost mechanism since they encourage negotiations and re-adjustment and secure a self-enforcing form of governance [12].

Based on the interrogation, the neo-institutional perspective is to shift the traditionally predominant supply-oriented modes of planning to the demand-side management. It also differs from neo-liberalism since it promotes the 'private-public' synergy and takes a more positive view on the role of the community. It considers that the state can play a proactive role in creating a favourable environment for water governance. It also recognises that regulations are necessary to address market failure in achieving equitable water delivery. Environmental sustainability and water efficiency, from the neo-institutional perspective, are not necessarily a trade-off. By appropriate institutional designs, individuals and collective interests are aligned and free-riding behaviour is deterred by the fear of legal and social sanctions. Despite the differences, the neo-institutional theory shares a few assumptions with the neo-liberal thinking: they both advocate clearly-demarcated resource boundaries and the specification of property rights.

**Notions of Social Embeddedness:** Does the Water Framework, underlying the influences of neo-institutional thoughts, achieve the goals of economic prosperity and ecological sustainability, without compromising social networks and livelihoods of the poor? In this paper, drawing upon theoretical works of Mark Granovetter [13], Mary Douglas [14] and Frances Cleaver [15], the concept of social embeddedness is used to examine if and how, water rights and governance are shaped by social precedents, human relations, social livelihoods and individual preferences.

Granovetter argues that social research often falls into an unnecessary dichotomy of depicting agency as either under-socialised or over-socialised. The former indicates the indeterminate nature of human actions and the capacity of individuals for willed and voluntary action which is not governed by social structure. It holds a strong belief that individuals are necessarily transformative agents to challenge structural inequalities. The latter, on the contrary, argues that individual actions are predetermined and constrained by social structures. It portrays agents as passive recipients who are totally incapable of resisting the structures surrounded them. The notion of social embeddedness, he argues, helps to explore everyday social interactions which link individual agency and social structure.

Douglas's social theory focuses on the role of social institutions, routine and habit in shaping individuals' choices, decision-making and patterns of social relations.

She proposes a less conscious, less functional and less rational construction of institutions and argues that: 'social institutions encode information. They are credited with making routine decisions, solving routine problems and doing a lot of regular thinking on behalf of individuals' [14]. People rely on precedents and 'common sense' as a guide to 'how they do things' in their everyday lives.

Linking the concept of social embeddedness directly to water governance, Cleaver [15] suggests that agents are embedded in social norms and structures which facilitate and constrain their agency and the processes of decision-making. She places social interactions within a particular historical, cultural and spatial context and underlines the ongoing and multi-faceted nature of social livelihoods of the poor. In her research in the African contexts, she is keen to show that the process of decision-making is complex and dynamic and the motivations are mixed and diverse. She emphasises the processes by which people consciously and unconsciously draw upon existing social and cultural arrangements to make decisions. She also examines how the mechanisms for collective action are 'borrowed or constructed from existing institutions, styles of thinking and sanctioned social relationships' [16].

Based on the notions of social embeddedness, the following section will discuss, with the support of examples and case studies, how 'social embeddedness of agency' and social embeddedness of institutions have considerable impact on access to and distribution of, water.

Rapport and Overing define agency as 'the capability, the power, to be the source and originator of acts' [17]. It explores the intention and motivation, the meaning and subjectivity and the process of negotiation and experience of individuals in taking actions.

Influenced by the game theory and prisoner's dilemma, the neo-institutional scholars argue that the dilemmas of collective action lie in human incentives. They claim that the temptation of free-riding is so strong that cooperation between individuals is impossible. The World Bank shares similar position, stating explicitly that: 'Many of the problems encountered in providing water services are due to the lack of incentives both for performance by providers and for efficiency by users' [1]. To get the incentives 'right', there is a need to design an institutional framework to align individual and collective interests. It is believed that institutional forces play a crucial role in the moulding of individual preferences and

purposes [18]. By clearly-defined property rights, strict monitoring and appropriate sanction, positive incentives for user participation can be created and pervasive incentives deterred.

The neo-institutional framework highlights the strategic and individualistic nature of agency. Strategic agency asserts that individuals are rational men who are motivated primarily by self-interested. They consciously construct their social relations with purposeful reasons. This is supported by the work of Ostrom and Ahn [19]. They argue that: '..... an agent assesses that another agent or group of agents will perform a particular action'. Human beings are assumed that they consciously calculate possible outcomes in a course of action to maximise their marginal benefits. They have clear preferences and form strategies to achieve them. The individualistic nature of agency implies that individuals are motivated for their own benefits and make decisions independent of any social relationships. The linear transformation of agency assumes that individuals' incentive structures are and can be, restructured by group membership, role expectation and clearly defined authority, back up by sanctions. Once the institutional designs are implemented, individuals will be changed from (self-) interest-oriented into norm-guided, due to the fear of punishment by informal sanctions and exclusion.

How accurate and useful of this economic and instrumental understanding of human rationality in understanding the patterns of cooperation in water management in developing countries? Motivations, reasoning and social conditions, as the three themes, are explored here to interrogate this perspective of human intentionality.

According to the Water Framework, water users are considered calculating. They make decisions based on the expected rate of return on investments by consciously weighing up the relative costs and benefits. For instance, in his study on canal irrigation systems in India, Meinzen-Dick *et al.* [20] investigate what makes farmers work together. They claim that farmers rely on natural resources to secure their livelihoods and it is this 'vested interest in making sure the work is done well' that gives them the 'greatest incentives' to maintain the resource base over time. Underpinned by the rational choice theory, their idea of profit maximisation is explicitly stated: '..... where the additional direct and indirect costs (including intangible transaction costs) farmers are asked to assume, are not balanced by benefits that the farmers value, individuals will not participate'.

Conceptualising human beings as calculative agents, largely based on economic rationality, has been under strong attack. Long [21] challenges the mistaken dichotomy of selfishness and altruism, arguing that individual motivations are not either self-interest-driven or altruistic. He underlines the mixed-motive cooperation - people seek their own benefits but are also interested in the benefits of others. Sen [22] also warns that agents will easily become 'rational fools' if they are modelled as self-interest-driven all the time. He puts forward some ideas about the role of obligation and commitment in our everyday life. In their research on the Gal Oya irrigation schemes, Uphoff and Wijayaratna [23] find that the sense of trust and cooperation is an attitude or habit of mind. Despite limited resources, poor households are willing to make physical and/or financial contributions to the maintenance, cleaning and repairs of the canals. This is an act 'according to their respective and shared ways of thinking and acting'. This moral reasoning is further illustrated by the Western India Rain-fed Farming Project by Tod *et al.* [24]. They find out that, despite the acute threat of water shortage, pastoralists, farmers and hunters, the three main types of communities in the villages, have a strong feeling of water sharing. The poor households in these arid and semi-arid areas perceive that it is socially unacceptable to exclude anyone from the water sources since water is provided by God and that should be collectively owned and shared.

The element of spiritual merit is a force of motivation that should not be sidelined because it guides our social reciprocal behaviour. In their analysis of how institutions work, Joshi *et al.* [25] talks to local villagers in Chuni in the Himalayan foothills. A villager tells them: 'Chuni is known as the village favoured by the Jal Devi, the water goddess ..... pollution by the Dalits will not be tolerated'. This remark underscores that traditional superstition and customs remain salient in guiding people's moral behaviour and instructing about them what can be and cannot be done. Religion and spiritual feelings provide collective experiences in resources management for common purposes.

The Water Framework stresses the importance of legislation and clearly-defined water rights. Water legislation, according to the World Bank, 'establish [es] effective coordination and agreed procedures for allocating water' [1]. Securing the individual water rights is to ensure that people are entitled to basic water supply [26]. The public are also encouraged to play an active role in influencing decision-making process which affects their lives. Despite good intentions, these policies reinforce the

axiomatic and individualised view of human behaviour that people make decisions independent of any relationship.

This is in contrast to Mason's idea of 'relational reasoning of agency' [27]. She sheds light on the relational understanding of claims and obligations that are deeply embedded within social relations in communities. She examines the complex ways in which people are connected and 'think connected'. She urges including the relational and contextual aspect of agency and considering the impacts of the existing and pre-existing structures of interaction on individuals' social behaviour to construct a more complex picture of social connection and livelihoods.

Research by Joshi [25] in the Himalayan foothills helps illustrate this point. Based on his observations, he suggests that villagers' lives are tied in multiple relationships and their livelihoods are deeply embedded in social relations. They rely on their kin, neighbours, friends and community members to provide mutual support. Formal water rights have little significance if they are not backed up with good social relationship in their communities. These closely-knit networks allow the poor to obtain access to water, but they simultaneously exert tremendous pressure and conflicting expectations. How to resolve the competing demands constructs a very complex nature of livelihoods. Their heavy reliance on their relations and friends play a decisive role in shaping their social behaviour. Access to resources is linked to their social reputations. In order secure stable livelihoods, they are careful in exercising their water rights. For example, House's research in Tanzania [28] finds that as long as they can secure minimal access to water, poor people avoid taking any risks which have the potential to damage the community harmony and long-term cooperation. Thus, their perception of exercising rights to water is shaped by their socially-embedded nature of livelihoods. The relational nature of social life also demonstrates the double-edged nature of closely-knit communities. While strong communities create a feeling of togetherness, the tight community networks can result in strict social control, conformity, excess claims on group members and restrictions on individual freedom [29].

Community engagement and participation is the key policy prescription in the Water Framework. The underlying assumption is that community participation opens up possibilities for the poor to access new space, resources and rules. Community members involved in the processes of rule negotiation and interpretation can develop a set of socially acceptable rights and

responsibilities. Through open forum, debating the differences and increasing transparency, citizenship is effective in dealing with diverse and even conflicting interests [12].

The champion of public participation, however, offers an over-optimistic account of agency and romanticises the possibility of open negotiation. It plays down the structural constraints which people face in the process of bargaining. This brings us to the need to examine how individuals act within structure and explore how structural forces influence the exercise of agency. Diverse and internally differentiated participants competing for the same social space, for instance, may put the poor, the uneducated and the sick at a disadvantage in articulating their needs. Concerning the nature of negotiation, Berry argues that the processes of negotiation and engagement are related to power relations and access to resources and assets. In her words, 'culture and ideology are continually redefined through practice, which they also shape' [30].

The assumption of equality of contract is also challenged by Young's idea of 'asymmetrical reciprocity' [31]. She argues that the notion of symmetry in relations 'obscures the differences in social position that makes relations asymmetrical'. The unequal distribution of economic resources and differently structured positioning in hierarchy, she points out, create sources of tension between individuals and groups which make egalitarian negotiation and discussion impossible. This poses a challenge to incorporating local elites and village leaders in water governance. While Meinzen-Dick *et al.* [20] believe that drawing on local leadership helps reduce the transaction costs of organising collective action and enhance social legitimacy, Mtisi and Nicol [32], however, caution that using traditional leaders as a quick-fix solution is power-blind. Their research in Zimbabwe shows that the local management institutions are dominated by rich households and local elites. These people make claims on behalf of the poor and cash in social capital and turn it into political capital for their own good. This example illustrates that 'structuring' and 'being structured' are distributed unevenly in social life [33] and that needs to be carefully examined.

Furthermore, the advocacy for community involvement needs to take the costs of participation into account. The poor sacrifice considerable time, resources and energy and all that puts them under stress and creates competing demands. The extra burden hinders them from building new and maintaining old, social networks. In their study on the canal irrigation systems in India, Meinzen-Dick *et al.* [20] calculate that farmers

contribute an average of Rs.311 per year for collective maintenance of the canals, on top of irrigation fees and labour contributions to clean watercourses. It is a deep worry that the current practice of extracting time and labour from the poor in the name of promoting sustainable water management is so exploitative that it further undermines their well-being.

In a nutshell, the Water Framework focuses too narrowly on economic rationality, without considering a wider range of social factors and cultural contexts. It over-simplifies the complexity of human interactions since the model suggests that social relationships function as an investment strategy. We need to examine the diverse and subjective meanings of social cooperation that people are involved in their everyday life.

**Socially-Embedded Institutions:** From the neo-institutional perspective, institutions are complex. They do not simply mean regulations or organisations, but ‘the set of rules governing water development use’ [26]. Institutions create incentives and disincentives for people to work together. Therefore, the focus has shifted from the constraining nature of institutions to the enabling side in shaping human action [37].

On the whole, there are three forms of institutions: judiciary, bureaucratic and socially-embedded. Judiciary institutions comprise the law and regulations which determine the water ownership and structure of authority. Clear sets of rights and responsibilities are laid down, so that both water and sewage providers and water users know what is expected of them (El-Fadel, *et al.* 2001). Sanctions, such as threatening to cut water supply, are used to deter free-riding behaviour and to ensure water efficiency. Bureaucratic institutions are committee-like organisations which stress formal structures. In the water context, they are water-use associations and committees which make decisions about rules, access and distribution. Socially-embedded institutions are social values and norms which govern and shape patterns of social interactions and water-use behaviour. It is important to highlight that these three forms of institutions are not mutually exclusive.

‘Getting the institutions right’ plays an important role in the Water Framework. To be fair, the Framework has taken the socially-embedded institutions into account. It acknowledges the importance of social mechanisms, such as networks, reputation, trust and authority, in enforcing relational contracts. The sustainability of water interventions also lies in social perception and acceptability. Despite this, critics show their concern

about the utilitarian view of institutions. Using existing organisations in water governance, for instance, is accused of improving project efficiency and increasing social legitimacy, without considering the impact of reinforcing power inequalities in communities. The economic approach to institutions also attaches importance to the idea of an ‘efficient evolution of institutions’ (Vanbenberg, 2002:227). It is a belief that weak and inefficient forms of collective actions will be replaced by robust, efficient and more sustainable ones. In reality, however, the process of institutional transformation is messier and less smooth than the rational theory suggests.

Mary Douglas suggests a less conscious, less functional and less rational construction of institutions. She argues that: ‘the triumph of institutional thinking is to make the institutions completely invisible’ (p98). Social institutions, she believes, encode information. They are ‘credited with making routine decisions, solving routine problems and doing a lot of regular thinking on behalf of individuals’ (p47). She pays a great deal of attention to habitual, cultural and historical processes which intend to explore the depth of social and cultural embeddedness of decision making and cooperative relations.

Crafting the right institutions in water management underlines the desirability and possibility of replacing existing ineffective institutions with new ones for specific purposes. Forming water users’ groups, setting up water tariffs and using water permits are a few examples to shape specific types of interactions and cooperation in order to achieve rapid and visible results. Although neo-institutional scholars stress the necessity to design institutions to suit local circumstances, they tend to assume that institutions are relatively predictable, stable and continuous.

The complexity and diversity of institutions may, however, need more scrutiny. For example, in her study in Tanzania, Cleaver [34] challenges the single-purpose, manipulative and narrow view of institutions by exploring the diversity of institutional forms. She finds that under the name *Sungusungu*, the group does not perform only a fixed function, but helps to search for lost children and disseminate messages around the village, organise camps of disparate young men and initiate other collective works.

Not all institutions are stable. Some can be ad hoc, intermittent and fragile in nature. In their case study of the canal irrigation systems in India, Meinzen-Dick *et al.* [20] suggest that relations of cooperation, such as canal

cleaning and repairs, happen spontaneously at certain periods of the seasons. They also report on several occasions that farmers organise agitations and demonstrations to press their demands and the trips are funded by a voluntary collection from the farmers. These examples demonstrate that collective action can be ignited by a single few incidents, arranged on an ad hoc basis and then die away when circumstances change.

The unanticipated consequences of institutional crafting should not be under-estimated. Cleaver [34] believes that acknowledging the limitations of our ability in crafting institutions is the first step in achieving sustainable water management. She advocates a high degree of institutional flexibility by adopting a 'mix and match' approach to combine modern and traditional institutions. She cites the changing forms of charging for water use in a village in Tanzania as an illustration of the 'trial and error' principle. In their research on Gal Oya irrigation scheme in Sri Lanka, Uphoff and Wijayarathna [23] also demonstrate the flexible design in institutions by highlighting that farmers abandon rice farming and switch to plant other crops that require less water and are better able to survive when facing water stress.

While old institutions can be exclusive and repressive, the introduction of new bureaucratic institutions or organisational arrangements is not necessarily inclusive or emancipatory. One of the best examples is the role of children and young people in water management. In Usangu, they play an influential role in water resource use and management through practice. They make decisions and negotiate with their families about water collection and usage, livestock welfare and farming practices. When the bureaucratic management structures are formed, they are not included [34]. There is a risk that the effectiveness of the reforms is constrained since the voices of the children are completely ignored.

Women participation plays a key role in the Water Framework. Women are considered as managers of water and their involvement in user organisations 'is instrumental in the success and in the sustainability of water supply and sanitation projects' [26]. Women are encouraged to send representatives in the water users groups or committees to influence the decision-making process that affects their lives. Despite the increasing visibility of women, including women in water governance may not necessarily suit women's strategic needs or challenge the gender-biased norms. Zwarteveen [35] argues that water user groups in general remain men's social clubs, predominately involved with traditional male activities. While women may feel able to participate in

meetings to discuss resource management at hamlet level, they do not feel adequate to speak out or take the lead in public since they do not have the 'right' use of language and knowledge. This psychological inefficacy, deeply embedded in local tradition, she cautions, cannot be resolved simply by putting women in public meetings and committees.

The instrumental understanding of institutions is made explicit by Uphoff and Wijayarathna: '(institutions are) useful in lowering transaction costs and making productive outcomes' [23]. The conscious construction of rules and the creation of organisations are considered as a useful investment for the achievements of human purpose. This school of thought also tends to highlight bureaucratic and legal organisations and play down the role of socially-embedded institutions. For example, in its water resources management reform, the World Bank is keen on 'assisting governments in establishing a strong legal and regulatory framework for dealing with the pricing, monopoly organisations, environmental protection and other aspects of water management' [1]. This normative bias towards bureaucratic institutions is even more explicit in Fafchamps's comments: 'formal organisations with clear rules and procedures should be better than informal organisations' [36]. In their case study of the canal irrigation systems in India, Meinzen-Dick *et al.* [20] also suggest that forming formal, well-structured irrigation organisations can give the local people a stronger and a more legitimate voice in management decisions. As a result, stakeholder participation is highly institutionalised by creating water users commissions and river basin committees and the success of institutional intervention is measured by the number of organisations registered. This is, however, not clear whether the faith in legal and bureaucratic institutions is compatible with the existing socially-embedded institutions. In this section, I shall examine how clearly-defined boundaries, strict rule enforcement and use of sanctions may create a gap between the designed plan and the existing institutional environment.

The Design Principles by Elinor Ostrom [37] highlights the importance of clear definition of boundaries and specifications of users' rights over resources. The idea is based on an assumption that collective action dilemma is caused by the size and the open access to natural resources [38]. The unclear ownership and the failure of excluding other users create inevitable complications involved in monitoring the use of the natural resources and 'balancing one use against another, make exclusion or restrictions on access intrinsically problematic' [39].

The call for clarity, security and exclusivity of property rights arrangements is also aimed to provide incentives for local residents to use water sustainably and to minimise conflicts since ‘clear boundaries may help individuals overcome the rule-making’ [40].

Well-defined boundaries are intended to reduce uncertainty about who benefits and who pays the cost and determine who has the rights to access conservation resources within a given area. For example, in Ceara, Northeast Brazil, Lemos and de Oliveira [3] advocate the enforcement of water rights by issuing water permits. In the case study of India, water user groups must be registered to local government and declare clearly the size of river basin in their control. All these attempts are expected to sustain collective action and reduce the uncontrolled use of water.

However, the idea of clearly-defined boundaries has been hotly debated about whether the complex social arrangements and livelihood networks of different water users are adequately considered. Drawing ‘modern’ boundaries does not necessarily match with either the ‘traditional’ village boundaries or the biophysical boundaries. Campell *et al.* explain that: ‘boundaries are generally porous and open to individual interpretation and contestation and are changeable’ [41].

The permeable and fluctuating nature of boundaries allows people to draw on a variety of institutional channels to legitimise their access to resources and to utilise multiple social networks and both ‘traditional’ and ‘modern’ institutions to make claims and secure access and rights. Rigid boundaries and specifications risk constraining negotiation and compromise between individuals [34]. Using the Western India rain-fed farming project as an example, Tod *et al.* [24] draw our attention to the complementary relationship amongst pastoralists, farmers and hunters. Living in arid areas, they share water for various purposes, such as irrigation, domestic use and livestock. There are concerns that these mutually-beneficial arrangements are not compatible with the demarcation of ‘artificial’ administrative water boundaries. Worse still, the existing patterns of reciprocity amongst villages may be undermined. The seasonality of rural livelihoods and the differing needs for access to water over the year also need to be taken into account. Establishing a clear boundary therefore may fail to accommodate multiple interests in forest use. Restricting some user groups in their access to water can easily create friction and conflicts. In their observations in India, Ballabh *et al.* [42] report that confusion and

disputes among villages arise because new demarcations exclude some villages which previously shared the resources.

Redefining and re-mapping administrative, social and resource boundaries needs extra attention, especially to the nature of people’s existing living arrangements and patterns. Access to resources is a fluid and negotiable process. The diverse types of property and use right, Leach and Fairhead argue, ‘frequently co-exist and [are] legitimised by different institutions’ [43]. Organisation of people’s lives is shaped and reshaped by multiple social and cultural networks, rather than simply by resource or jurisdictional boundaries. Clear demarcation of water boundaries can undermine institutional flexibility and worsen the ties between different water users.

The World Bank water strategic report states clearly that: ‘the enforcement of water legislation and policies depends on the relevance of the regulations and on the administrative machinery required to ensure compliance’ [2]. Rule enforcement is expected to evoke cooperative effort because ‘people expect that this is how things should and will work in that community’ [24]. Strict compliance with collective rules and effective monitoring of resource use are also claimed to increase transparency, accountability and trust because decisions about collective action can be reached more efficiently. Conflicts are avoided since villagers themselves craft the specific rules that create monitoring, sanctioning and arbitration devices to resolve disputes with local space [44,42]. An appropriate legal framework that established responsibility with authority, Kumar [45] argues, develops mutual expectations of each other and this creates disincentives for people to cheat or change the terms of the agreements.

How rules are negotiated and implemented is, however, not without controversy. Women, for example, have specific needs with respect to water and they have different water preference from men. In order to cope with the demands from domestic consumption and productive use of water, women express ‘a clear preference for irrigation at specific times of the day when they are not busy with other tasks such as cooking’ [35]. Rule-based procedures on a non-discretionary manner may restrict individuals facing different social circumstances to bend the rules to obtain minimal access to water. Widows, wives of migrated men and the disabled, for example, may not have formal entitlements to land and water, but they have informal means and use their social networks to obtain the right amount of water at the right time. In the



Chhattis Mauja irrigation system in Nepal, Zwartveen [35] shows that poor women who steal water at night are not punished by the water committees because they have good relations with the committee members. This example is not an attempt to exaggerate the room for manoeuvre of the powerless, but to draw attention to the inflexibility and the downside of rule enforcement in restricting informal access of the needy.

Court and arbitration groups are a few examples of formal conflict resolution mechanisms which help settle disputes over the use of water and enforce generally-agreed decisions. The external intervention in establishing new patterns of authority, however, pays insufficient attention to the existing informal rules that may have already be in practice. The new, 'modern' structures of authority do not supersede, but work along with, the existing, 'customary' institutional arrangements. These dual systems are not uncommon in jurisdiction over the use of natural resources in most developing countries. Traditional chieftainship, headmen, spiritual mediums, healers and guardians of shrines still play an important role in matters of land allocation, access to forest and resource disputes [47]. Villagers may also prefer to solve disputes outside the formal institutions since this 'saves them the hassle of writing letters and making presentations in public' [35]. In the Gal Oya irrigation scheme in Sri Lanka, Uphoff and Wijayarathna [23] find that villagers opt for the elders to mediate. Such indigenous customs and authorities, sometimes providing flexibility for the poor to secure access to water, should not be ignored.

Economic institutionalists prefer specific punishments and strict penalisation imposed on those who do not keep contracts. The World Bank is in favour of 'enforcing sanctions using fines and other penalties for non-compliance' [26]. The emphasis on sanction in securing compliance has, however, been questioned. Institutionalists believe that sanctions help to reduce information costs because it is assumed that victims are willing and able to report cases of deceptions. In their study on community development in Africa, however, Platteau and Abraham [47] show that the effectiveness of sanctions is restricted by the 'psychological barrier' that face-saving victims are reluctant to disclose facts of malfeasance.

Alkire and Deneulin [48] are aware of the inadequate understanding of mixed and complex motivations of human beings. Local people do not desire to punish their free-riding members because the idea of sanctions causes

anxiety within the groups. Sanctions, from their point of view, may undermine, rather than build, trust and cooperation. Penalty only encourages open confrontation and generates negative effects on cooperative relations and thus is highly undesirable. Furthermore, strong norms of reconciliation shape interpersonal relations.

Sanctions are rarely imposed in real life and power lies in their threat rather than their activation [49]. Using informal social pressure, rather than punishment, is a more common strategy. On some occasions, households with financial problems are exempted from paying contributions. In addition, disputes are discussed and settled outside formal institutions and outcomes hinge largely on relations among kin, neighbours and group members. Since most community members and leaders are local members and their families know one another very well. These dense webs of networks blur the distinction between private and public lives. As Platteau and Abraham suggest: 'any disagreement among the elite about a rule or a decision is bound to spill over into the sphere of private relations' [47]. The tight intertwining of the private and social spheres means that 'any open manifestation of disagreement at the level of community affairs creates a negative externality on the level of interpersonal relations'.

The idea that rule enforcement achieves better water management needs further interrogation. While rules and sanctions are considered as the basis of the normative regulating mechanisms, it is crucial to examine whether these bureaucratic regulations are compatible with the highly socialised context of community-based resource management. The newly-crafted institutions may alter the existing social relations that cause public confrontation rather than negotiated reconciliation. Questions, as to whether inequitable norms are reproduced through which authority is exercised and sanctions imposed, need to be addressed.

## CONCLUSIONS

This paper has shown the limitations of the World Bank's Water Framework, especially its over-emphasis on 'the primacy of the economic over social and environmental principles in water resources use' [3]. Water reforms, guided by strict rule enforcement, clearly-defined boundaries and the use of sanctions, risk destroying the stable livelihoods of the poor, eroding the already-limited social capital, undermining the established patterns of water sharing and making the access to water

more difficult. This, ironically, contradicts to the Bank's original ideas of reducing poverty by effective water interventions.

There is an inadequate understanding of human intentionality and the nature of institutions in the Water Framework. The neo-institutional assumption on human rationality as necessarily selfish and opportunistic does not pay enough attention to a wider and more complex motivation in the process of negotiating water ownership. The faith in formal organisational building and the utilitarian view of institutions also fails to consider the ad hoc, intermittent and unpredictable dimensions of institutions. As Berry argues, 'interventions served to create additional channels of institutional membership and access to resources, which were superimposed on existing one rather than superseding them' [30]. The livelihoods of the poor rely on the legacies of old institutions, the prevailing social rules and ethics and the interdependence of formal and informal institutions.

To achieve better water interventions, this paper suggests that we need to have a deeper understanding of the history and culture of social relations, the existing relations of cooperation that shape water participation, people's livelihood priorities, individuals' preferred institutional environment, as well as the interlay between new and old institutions that channels that people can get access to resources and exercise agency. Access to water relates to the livelihoods of billions of population in developing countries. Getting the concept of institutions right, rather than getting the institutions right, is a matter of urgency.

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