

33rd WEDC International Conference, Accra, Ghana, 2008

**ACCESS TO SANITATION AND SAFE WATER:
GLOBAL PARTNERSHIPS AND LOCAL ACTIONS**

Politicising the World Bank's over-institutionalised water reforms in the developing countries

S. Wong, UK

This paper challenges the World Bank's sustainable water management framework. Drawing upon case studies in the developing world, this paper demonstrates how to build 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 need to achieve water sustainability without undermining the social networks and livelihoods of poor people. Successful water interventions depend on our understanding of: (1) history and culture of social relations; (2) existing cooperative relations that shape water participation; (3) people's livelihood priorities; (4) individuals' preferred institutional environment; (5) the interplay between new and old institutions through which people get access to resources and exercise agency.

Introduction

This paper focuses on the impact of the World Bank's sustainable water management framework (hereafter called the 'Water Framework') on the livelihoods and social networks of poor people in the developing countries. It examines whether social equity and poverty reduction are compromised in the name of water efficiency. It also interrogates the Water Framework by exploring its underlying assumptions on human incentives and water use and examines its understanding of institutions in shaping human actions.

From the 'Water Resources Management Policy Paper' (1993) to the recent 'Water Resources Sector Strategy' (2004), the World Bank has gone to great lengths to get water management right. It proposed the Water Framework which has widely been applied in many poor countries. The Water Framework comprises a package of widely diffused policy prescriptions: community participation, decentralisation, cost recovery, good governance, strict enforcement and monitoring and appropriate use of technology. The Water Framework has been highly influential at theoretical and policy levels and in the developing and developed world. The United Nations Development Programme, OECD, European Union and the International Water Association have applied similar guiding principles (OECD, 2004; EU, 2000). The Water Framework has far-reaching policy implications too. It 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 of water planning by recognising the role of cultural norms and social relations in aligning private and collective interests.

Despite its high popularity, the Water Framework has strongly been challenged. Critics argue that the universal application of the Water Framework fails to embrace the diversity and complexity of cultural characteristics of water use and distribution in different countries. Defining water as a purely economic commodity has caused controversy since this neglects another important side: that of water as a community asset (Strang, 2004). Political issues, such as access to, and distribution of, water, are not properly addressed (Mehta, 2003). It is also criticised for an insufficient gender analysis of the competing use of water in communities (Vernooy and Fajber, 2006). The functional approach to institutions, crafting institutions to 'achieve joint gains through cooperation and exchange' (Thelen, 2003:214), is accused of playing down the messy processes of institutional building (Mehta et al. 1999).

I intend to build on these critiques in two aspects: firstly, I criticise the Water Framework for focusing narrowly on economic rationality without considering a wider range of social factors and cultural contexts. Secondly, I highlight the 'clumsy' processes and unintended consequences of institutional crafting by illustrating with examples how socially-embedded institutions interact with judicial and bureaucratic institutions. I argue that the universal application of the design principles, such as clearly-defined water boundaries, strict

rule enforcement and the use of sanctions, can undermine existing relations of cooperation.

This paper draws largely upon the common-pool resources management literature in the developing world context. I develop my arguments based on the concept of social embeddedness by Cleaver (2002). The concept helps to explore everyday social interactions which link individual agency and social structure. It is used as a sociological lens to consider how water is accessed and distributed. This paper begins by introducing the guiding principles of the Water Framework. By using the notion of social embeddedness, it then examines three types of institutions and analyses the impact of clearly-defined boundaries, strict rule enforcement and use of sanctions. It concludes by explaining how a more socially-informed water framework helps poor people to secure more stable livelihoods.

Sustainable water management framework

The Water Framework stresses the importance 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' (World Bank, 1993:4). By information sharing, increasing transparency and open communication, different stakeholders feel the ownership of, and share the responsibility for, water management. This then improves incentives for cost recovery and service quality.

A decentralised approach to water regulation transfers the major responsibility, service delivery and power from central government to local governments, private sector and community organisations, such as water user associations (World Bank, 1993). 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' (quoted in Dinar, 1998:371).

Calls for deregulation and privatisation are another essential part of the water reforms. Deregulation re-defines water ownership and leads to a reduction of government control in water governance. It is claimed that implementing privatisation by selling 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 the costs of water services are considered to provide adequate incentives for efficient use of water (Kallis and Bulter, 2001).

Effective monitoring and enforcement mechanisms are also central to the Framework. 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 older 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.

Social embeddedness of institutions

How well can the Water Framework, established with a strong focus on representation, transparency, regulation and rights, achieve ecological sustainability and economic viability, without undermining social networks and livelihoods of the poor? In this paper, drawing upon the theoretical work of Frances Cleaver (2005), 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. Cleaver (2005) links the concept of social embeddedness directly to water governance. She argues 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 context, she is keen to show that the process of decision-making is complex and dynamic, and that 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' (Cleaver, 2001:29).

Complexity of institutions

Institutions, from the neo-institutional perspective, are not simply regulations or organisations, but 'the set of rules governing water development use' (World Bank, 1994:31). Institutions create incentives and

disincentives for people to work together. Therefore, the focus has shifted from the constraining nature of institutions to the enabling role in shaping human action (Ostrom, 1992).

There are three forms of institutions: judicial, bureaucratic and socially-embedded. Judicial institutions comprise the law and regulations which determine water ownership and the 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 defined as 'formalised arrangements based on explicit organisational structures [and] contracts often introduced by governments or development agencies' (Cleaver, 2002:13). They are manifest in the codification of rules and the specification of clear authority structures. Socially-embedded institutions are social values and norms which govern and shape patterns of social interactions and water-use behaviour. They are based on culture, social organisations and daily practices.

The assumption of 'institutional crafting' in the Water Framework lies in 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 of institutions used to shape specific types of interactions and cooperation in order to achieve rapid and visible results. Although neo-institutional scholars stress the need to design institutions to suit local circumstances, they tend to assume that institutions are relatively predictable, stable and continuous.

Institutions, however, are more diverse and complex than the neo-institutional perspective suggests. For example, in their study in Tanzania, Cleaver and Frank (2005) challenge the single-purpose, manipulative and narrow view of institutions by exploring the diversity of institutional forms. They find 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 desperate young men and initiate other collective works.

While some institutions exhibit higher stability, others are more ad hoc, intermittent and fragile. In their case study of canal irrigation systems in India, Meinzen-Dick et al. (2002) suggest that relations of cooperation, such as canal cleaning and repair, 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 dynamic and fractured nature of institutions and the unintended consequences of institutional building pose a challenge to institutional design. Mehta et al. (1999) argue that acknowledging the limitations of our ability to craft institutions is the first step in achieving sustainable resource management. They advocate a high degree of institutional flexibility by adopting a 'mix and match' approach to combine modern and traditional institutions. In their investigation on the Gal Oya irrigation scheme in Sri Lanka, Uphoff and Wijayarathna (2000) also demonstrate the flexible design of 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.

Clearly defined boundaries: Rigid or permeable?

Ostrom (1992) suggests that resources should be managed within clearly-defined boundaries, and users' rights over the resources must be clearly specified. The idea is based on an assumption that the collective action dilemma is caused by the scale of natural resources and open access to them (FAO, 1999). Unclear ownership and the failure to exclude other users creates inevitable difficulties involved in monitoring the use of the natural resources, and 'balancing one use against another, make exclusion or restrictions on access intrinsically problematic' (Gibson et al., 1998: para15).

Clarity, security and exclusivity of property rights arrangements is also intended to provide incentives for local residents to use water sustainably and to minimise conflicts since:

'..... clear boundaries may help individuals overcome the rule-making, collective action problem by increasing their ability to calculate an expected flow of benefits by knowing what and who are involved in decision making' (Gilson, et al. 2005: para43).

In other words, well-defined boundaries are expected 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 (2004) advocate the enforcement of water rights by issuing water permits. In the case study of India, water user groups must declare clearly the size of river basin in their control and be registered by local government. All these attempts are expected to sustain collective action and reduce the uncontrolled use of water.

The call for clear boundaries, however, has led to concern about whether the complex social arrangements and livelihood networks of different water users and whether these are adequately considered. 'Modern' boundaries do not necessarily match either 'traditional' village boundaries or biophysical ones. Campell et al. (2001) explain that:

'..... Boundaries are generally porous, and open to individual interpretation and contestation, and are changeable. In general, it is very difficult to see how boundaries can become more clearly defined. Any attempts to harden the boundaries are likely to be frustrated by local people or user groups' (p594-5).

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 (Cleaver, 2002). Using the Western India rain-fed farming project as an example, Tod et al. (2003) 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. (2002) 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. Resource access is a fluid and negotiable process. The diverse types of property and use right, Leach and Fairhead (2001) argue, 'frequently co-exist and [are] legitimised by different institutions' (p229). 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.

Undesirability of strict rule enforcement and sanctions

Well-established rules to allocate and distribute water, clearly-assigned roles to organise collective action for operation and maintenance, and consistent monitoring of water users' behaviour are considered as a necessary condition for the establishment of effective water management. This is clearly stated in the World Bank water strategic report: 'The enforcement of water legislation and policies depends on the relevance of the regulations and on the administrative machinery required to ensure compliance' (1994:33). Rule enforcement is expected to evoke cooperative effort because 'people expect that this is how things should and will work in that community' (Uphoff and Wijayaratra, 2000:1877).

It is, however, not clear whether rules and roles can be externally imposed. Neither is it certain how uniform rule enforcement fits with the needs of different water users. Women, for example, have specific needs with respect to water and they have different water preferences from men. In order to cope with the demands of 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' (Zwarteveen, 1997:1338). Rule-based procedures on a non-discretionary basis may require 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 might have informal means and can use their social networks to obtain the right amount of water at the right time. In the Chhattis Mauja irrigation system in Nepal, Zwarteveen (1997) 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 downside and inflexibility of rule enforcement in restricting informal access of the needy.

Formal conflict resolution mechanisms, such as court and arbitration groups, are favoured in settling disputes over the use of water and to enforce generally-agreed decisions. Such external intervention in establishing new patterns of authority, however, pays insufficient attention to existing informal rules that may 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 (Cleaver and Frank, 2005). 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' (Zwarteveen, 1997:1343). In the Gal Oya irrigation scheme in Sri Lanka, Uphoff and Wijayarathna (2000) 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.

Sanctions play a key role in institutional governance. While the role of informal social sanctions is acknowledged, economic institutionalists tend to 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' (1994:77). The emphasis on sanctions in securing compliance has, however, been questioned. My research suggests that consensual ruling, rather than strict penalisation, is the acceptable social norm in collective governance. Sanctions are rarely imposed in real life, and power lies in their threat rather than their activation (Wong, 2005). 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 networks blur the distinction between private and public lives. As Platteau and Abraham (2002) suggest: 'any disagreement among the elite about a rule or a decision is bound to spill over into the sphere of private relations' (p112). 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' (p118).

Exclusive and repressive institutions

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 (Cleaver, 2002). When bureaucratic management structures are formed, however, they are not included. There is a risk that the effectiveness of the reforms is constrained because the voices of the children are completely ignored.

On the contrary, gender inclusion and women participation have a high profile within 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' (World Bank, 1994:36). Women are encouraged to have representatives in the water users groups or committees to influence the decision-making processes that affect their lives. Despite the increasing visibility of women, including women in water governance may not necessarily suit women's strategic needs or challenge gender-biased norms. Zwarteveen (1997) argues that water user groups in general remain male social clubs, predominately involved with their traditional activities. While women may feel able to participate in meetings to discuss resource management at hamlet level, they do not feel able 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.

Conclusions and policy implementations

This paper has highlighted the shortcomings of the Water Framework in its underlying 'strong emphasis on the primacy of the economic over social and environmental principles in water resources use' (Lemos and de Oliveira, 2004:2132). Water reforms, guided by strict rule enforcement, clearly-defined boundaries and the use of sanctions, risk destroying the stable livelihoods of the poor, eroding already-limited social capital,

undermining established patterns of water sharing and making access to water more difficult. This, ironically, contradicts the Bank's intention of reducing poverty by effective water interventions. The problems of the Water Framework lie in its inadequate understanding of institutions. The neo-institutional assumption of human rationality as necessarily selfish and opportunistic does not pay enough attention to a wider and more complex motivations involved in the process of negotiating water ownership. Its faith in formal institutions and the utilitarian view of them also fails to consider the ad hoc, intermittent and unpredictable aspects. As Berry (1993) argues, 'interventions served to create additional channels of institutional membership and access to resources, which were superimposed on existing ones rather than superseding them' (p210).

The reviving interests about the role of community are a response to the failure of the market and the state *alone* in achieving effective resource management. However, communities are not independent of the market or the state. They need external assistance from the state and the market to provide financial and technological support and to resolve inter-community disputes. The call for synergy, therefore, becomes popular in the common-pool resource management literature because it, as Paavola and Adger (2005) suggest, 'combines local relative advantages with the relative advantages of the state [and market] in the environment governance' (p358). This 'win-win' situation, nevertheless, needs close scrutiny. The co-management may be achieved in unfavourable terms for local communities. The state and the market may assist local elites to capture social capital and turn them into political capital for their own good. In addition, water interventions do not stand apart from human values and social contexts. There is a need to put a more human face on water reforms and designs. In order to achieve effective water reforms, I suggest that our understanding of these five social contexts are particularly important: (1) history and culture of social relations; (2) existing relations of cooperation that shape water participation; (3) individuals' preferred institutional environment; (4) people's livelihood priorities; and (5) the contextual knowledge of both formal and informal channels through which people obtain access to resources and exercise agency.

References

- Ballabh, V., Balooni, K. and Dave, S. (2002) Why local resources management institutions decline: a comparative analysis of Van Panchayats and forest protection committees in India, *World Development*, Vol.30, Issue12, pp.2153-2167.
- Berry, S. (1993) *No condition is permanent: the social dynamics of agrarian change in Sub-Saharan Africa*. University of Wisconsin Press: London.
- Campbell, B., Mandondo, A., Nemarundwe, N. and Sithole, B. (2001) Challenges to proponents of common property resource systems: despairing voices from the social forests of Zimbabwe, *World Development*, Vol.29, Issue4, pp.589-600.
- Cleaver, F. (2005) 'The social embeddedness of agency and decision-making', in Giles Mohan and Sam Hickey (ed) *Participation from tyranny to transformation. Exploring new approaches to participation in development*. Zed: London, pp.271-277.
- Cleaver, F. (2002) Reinventing institutions: Bricolage and the social embeddedness of natural resource management, *The European Journal of Development Research*, Vol.14, No.2, pp.11-30.
- Cleaver, F. and Frank, T. (2005) *How institutions elude design: river basin management and sustainable livelihoods*, BCID Research paper no.12, Bradford Centre for International Development: University of Bradford.
- Dinar, A. (1998) Water policy reforms: information needs and implementation obstacles, *Water Policy*, Vol.1, pp.367-382.
- El-Fadel, M., Zeinati, M. and Jamali, D. (2001) Water resources management in Lebanon: institutional capacity and policy options, *Water Policy*, Vol.3, pp.425-448.
- European Union (2000) *EU Water Framework Directive 2000/60/EU of the European Parliament and of the Council of 23 Oct, 2000*.
- FAO (1999) *Beyond sustainable forest management: opportunities and challenges for improving forest management in the next millennium – summary report*. Forest Policy and Planning Division, Rome, Dec, 1999.
- Gibson, C., Williams, J. and Ostrom, E. (2005) Local enforcement and better forests, *World Development*, Vol.33, No.2, pp.273-284.
- Kallis, G. and Butler, D. (2001) The EU water framework directive: measures and implications, *Water Policy*, Vol.3, pp.125-142.

-
- Leach, M. and Fairhead, J. (2001) Plural perspectives and institutional dynamics: challenges for local forest management, *International Journal of Agricultural Resources, Governance and Ecology*, Vol.1, Nos 3/4, pp.223-242.
- Lemos, M. and de Oliveira, J. (2004) Can water reform survive politics? Institutional change and river basin management in Ceara, Northeast Brazil, *World Development*, Vol.32, No. 12, pp.2121-2137.
- Mehta, L. (2003) Contexts and constructions of scarcity, Paper presented in The Alternative Water Forum, University of Bradford, 1-2 May, 2003.
- Mehta, L., Leach, M., Newell, P., Scoones, I., Sivaramakrishnan, K. and Way, S-A. (1999) Exploring understandings of institutions and uncertainty: new directions in natural resource management, IDS discussion paper 372, Institute of Development Studies: University of Sussex.
- Meinzen-Dick, R., Raju, K. and Gulati, A. (2002) What affects organisation and collective action for managing resources? evidence from canal irrigation systems in India, *World Development*, Vol.30, No.4, pp.649-666.
- OECD (Organisation for Economic Cooperation and Development) (2004) The OECD environmental strategy: progress in managing water resources (see www.oecd.org/env for details).
- Ostrom, E. (1992) *Crafting institutions for self-governing irrigation systems*. ICS Press: San Francisco.
- Platteau, J-P. and Abraham, A. (2002) Participatory development in the presence of endogenous community imperfections, *The Journal of Development Studies*, Vol.39, no.2, pp.104-136.
- Paavola, J. and Adger, N. (2005) Institutional ecological economics, *Ecological economics*, Vol.53, pp.353-368.
- Strang, V. (2004) *The meaning of water*. Berg: Oxford.
- Thelen, K. (2003) How institutions evolve, in J. Mahoney and D. Rueschemeyer (ed) *Comparative historical analysis in the social sciences*. Cambridge: Cambridge University Press, pp208-240.
- Tod, I., Parey, A. and Yadav, R. (2003) How can we design water resources interventions to benefit poorer households?, Paper presented in The Alternative Water Forum, University of Bradford, 1-2 May, 2003.
- Uphoff, N. and Wijayarathna, C. (2000) Demonstrated benefits from social capital: the productivity of farmer organisations in Gal Oya, Sri Lanka, *World Development*, Vol.28, No.11, pp1875-1890.
- Vernooy, R. and Fajber, L. (2006) 'Integrating social and gender analysis into natural resource management research', in R. Vernooy (ed.) *Social and gender analysis in natural resource management – learning studies and lessons from Asia*. Sage: London, pp.17-36.
- Wong, S. (2005) 'Updating the institutional debate in sustainable water management', in A.G. Kungolos, C. A. Brebbia and E. Beriatos (eds) *Sustainable Development and Planning II*, Vol 1, WIT Press: Southampton, pp671-680.
- World Bank (2004) *Water resources sector strategy. Strategic directions for World Bank engagement*. World Bank: Washington D.C.
- World Bank (1994) *A guide to the formulation of water resources strategy*. World Bank technical paper no. 263 (edited by Guy Le Moigne, Ashok Subramanian, Mei Xie and Sandra Giltner). World Bank: Washington D.C.
- World Bank (1993) *Water Resources management policy paper*. World Bank: Washington D.C.
- Zwarteveen, M. (1997) Water: from basic need to commodity: a discussion on gender and water rights in the context of irrigation, *World Development*, Vol.25, No.8, pp.1335-1349.

Keywords

water management, governance, sustainability, institution, World Bank

Contact details

Sam Wong
Rm 3.25 Environment Building,
School of Earth and Environment,
University of Leeds, LS2 9 JT, UK
Tel: 44-(0)113 34 36717
Email: s.wong@leeds.ac.uk / kfswong@yahoo.co.uk
