

Domestic water provision and gender roles in drylands

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ABSTRACT

In many areas around the globe, the provision of water for domestic use is a major preoccupation: supplies that are distant or inadequate impede development for all concerned. It is women who are overwhelmingly responsible for the prudent utilization of this water. The paper examines gender roles in the management of household water in ill-served and arid rural areas in relation to local cultural norms. It observes that many well-meaning attempts to improve rural water supplies are less than successful because of failure to take sufficiently into account the gender dimension. Women's key involvement in the sector enables water supplies to be developed more effectively and, through women's participation in planning processes, hopefully improves their social status. Case studies illustrate these points, pointing to some of the present problems and concluding with some practical suggestions.

Introduction

Recently I was in Kyrghistan talking to community development workers doing action research and also to a large national non-government organization (NGO) run by women. Both groups were involved in assessing water supply projects, ensuring that the process was participatory and involved women in planning, with the dual aim of maximizing the usefulness of the water points and at the same time promoting greater gender equality. They asked some very practical questions. Did it matter if women didn't attend the meetings of the Water Management Committee but assured the implementers that, having discussed the matter in the home, their husbands would express their views in the public forum (there is a strong local tradition that women have considerable power in the domestic sphere)? In other words, did it matter if women's participation was indirect? Did it matter if the voluntary labor group, a traditional system called *ashar*, was composed only of men, and women just cooked the communal meals that were an integral part of the process? In one community, villagers had decided that only men would participate in the water committee, which was the main decision-making body, but that the sub-committee for finance and subsequent collection of water dues was going to be run

by women “because they were more honest.” Was this all right in terms of the fair and equitable participation of both genders? What did the project manager do if men wanted the new water point to be easily accessible for irrigation, but the women wanted it sited in the village? (In this case it seems that the women’s views prevailed.) This vignette illustrates some of the typical day-to-day complexities of trying to take into account the views of those who are most directly involved in family water provision in a society where women lack a public voice.

In this paper I want to emphasize the importance of adopting a gender perspective in the provision of better water supplies for household use. My argument is that women play a crucially important role in domestic water provision and use. Therefore, failure to take their views and perspectives adequately into account, as well as those of the men who are normally consulted, has deleterious effects on the provision of improved water supply projects. It results in inefficiencies that reduce the effectiveness of well-meant efforts. At a practical level, women’s daily needs for water are not met. At a more strategic level, it also means that, if women’s expertise is not respected, opportunities to promote greater gender equality—a serious consideration in terms of improving women’s status and thus their valuable participation in the development process overall—are lost.

The paper begins by considering women’s and men’s roles in domestic water provision, showing how these are influenced not only by the physical accessibility and availability of water supplies, but also by often deeply held local traditions and cultural norms. Given women’s key involvement in the provision of household water, it is not surprising that greater efforts have been made to include them in water projects and that these efforts have been made over a longer period of time than has been the case in many other aspects of development. The paper outlines how, over the last half century or so, at least in theory, development policies with regard to water have come to incorporate gender considerations. However, it also shows that the organizational culture within the water industry often results in implementing agencies failing to adequately address women’s concerns on the ground. Thus, although success has been claimed for the progress made in engendering the sector, the results have in fact been mixed, both in terms of practical improvements in the provision of water and in terms of promoting greater gender equity. In the case studies, some of the reasons for these mixed results are explored. They have been chosen to illustrate the main thesis—namely, the importance of understanding women’s and men’s perceptions and priorities with regard to their water supplies—but also to show the importance of understanding the local context.

My own experience straddles the academic-practitioner divide. In adopting a development perspective, I recognize the vulnerability of populations with marginal water supplies and the way in which inadequate access to potable water impedes personal, community and governmental improvements in welfare and quality of life. The regions most affected are sub-Saharan Africa followed by Southeast Asia and South Asia. The problem is largely rural; the World Health Organization (WHO) and the United Nations Children’s Fund (UNICEF) estimate that “for every person

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in urban areas there are six people in rural areas without improved drinking water sources” (WHO/UNICEF, 2004:22). My focus is on these ill-provided rural areas. The paper draws on a book which Tina Wallace and I edited, *Gender, Water and Development* (Coles and Wallace, 2005), work on which provided an unusual opportunity for reflection. Such a book seemed necessary to us because, although there are some fine critiques in journals, much good material is comparatively inaccessible in organizational reports (the grey literature)¹ and because the narratives and perspectives of those working in the field are less often told than the findings of researchers.

Women’s roles in water provision

Women are the main users or consumers of domestic water and often are also, along with children, the usual fetchers of water. They are the managers of water at the household level, including its use for human consumption, family hygiene, the watering of domestic livestock and yard gardens. Quite frequently, they are the organizers at the community level, and in this capacity they may be responsible for maintenance, conservation and even improvement. Rather differently, given their often important role in food production, they may also be involved in small-scale irrigation. Transporting water is one of the main reasons women, in many parts of the world, have traditionally worked longer hours than men. As fetchers of water, women often carry heavy loads that can result in injury, in strain particularly when pregnant or simply in physiological wear and tear when the task is undertaken over a lifetime. In collecting water, they can be differentially exposed to pathogens such as guinea worm and bilharzia compared to other sections of the population. There is also the issue of safety: where water is far off, cultural norms may still require women to fetch it, and these women, on their long road to and from water wells, may be vulnerable to molestation or even outright violence and rape. It is important to realize, however, that water provision that is distant or inadequate affects the whole family and, indeed, the community both directly and indirectly by reducing standards of living.

Approaches to the development of water policies: The incorporation of gender

The 1950s and 1960s

Not surprisingly, thinking about the provision of water supplies has changed over time. Around the middle of the twentieth century, the general policy of development

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agencies, including international organizations such as the World Bank as well as bilateral donors and international NGOs, was to support government public sectors, water departments included. Water projects were (and often still are) run by male engineers, largely drawing on experience of providing water in the industrialized world. The rationale was to meet basic needs and improve living standards, particularly health, since the importance of water-related disease in the tropics was well-known. At that time, women played no role in formulating water policy or in water delivery systems, although it was recognized that inadequate household supplies affected them much more severely than men. The failure to involve women masked what in some cases had been women's much more active position in the sector (Page, 2005).²

The 1970s

It took about two decades for it to be recognized that the real managers of domestic water were women. By then it had become apparent that women were the principal users of water and had the acquired skills and knowledge to derive maximum benefit from new water projects. Despite this time lag, the water sector was, in fact, among the first to recognize the potential strength of the contribution women could make to development. The main organizations involved now based their programs more specifically on meeting women's needs and advocated the role of women in water supply development and management.

The 1980s

During the United Nations (UN) development decade on water, 1981–1990, the aim was to provide “clean drinking water and sanitation for all by 1990.” An economic rationale was advanced for women's participation in water projects: efficiency would be advanced because women had an interest in the provision of reliable water supplies near their homes; this would ensure their commitment—certainly in terms of providing voluntary labor, but also in terms of financial contributions and subsequent guardianship of water points. Women were trained as caretakers, as hand pump mechanics and as motivators providing health education, without which it was understood that families would not fully benefit from the new supplies. However, the assumption that the time saved would be used for income generation was shaky: women might have other priorities and, in the case of craft activities, also lack access to markets. Health benefits sometimes disappointed because of the ineffectiveness of much health education, as well as the complex etiology of diseases such as childhood diarrhea. Uncertain too were women's abilities to maintain the new water points given existing social norms and their greater

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difficulty, compared with men, in accessing spare parts from commercial or government suppliers (e.g., Pandey and Moffat, 2005; Singh et al., 2006).

The 1990s

In the last decade of the century (and indeed up to the present), water policy has been bedevilled by a number of problems. It came to be realized that state provision of water was expensive and inefficient and, moreover, that cuts in public spending imposed through structural adjustment programs had aggravated this situation. Moreover, water projects typically involved several government departments, notably public works, health and local government, and additional inefficiencies had resulted from poor linkages between them (White, 1997). So, under the influence of the neo-liberal agenda, the focus for the provision of basic services shifted to the market. Henceforth, governments would not provide water themselves, but would create the appropriate regulatory framework for the private sector, often seen as including local and international NGOs as well as commercial firms, to do so, though little attention was given to the capacity of weak governments to enforce compliance on multi-national companies (Aegisson, 2002). Privatization, decentralization and sustainability through cost recovery would be central features of the policy. Within the context of newly strengthened global pledges on poverty reduction, there was a commitment to “water for all” and recognition that it was a right as well as an economic good, raising important questions about how poor people (and many of the poor were in women-headed households) would manage to pay their user fees. Community participation, taking gender aspects into account and contributing to women’s “empowerment” were all recognized as essential to achieving these somewhat confusing and conflicting concepts, which were formally endorsed in 1999 when the Dublin principles (resulting from the Dublin conference on Water and the Environment in 1992, which was preparatory to The Rio Conference on Environment and Development) were accepted by a majority of countries. Principle 3 stated:

Women play a central part in the provision, safeguarding and management of water. This pivotal role of women as providers and users of water and guardians of the living environment has seldom been reflected in institutional arrangements for the development and management of water resources. Acceptance and implementation of this principle requires positive policies to address women’s specific needs and to equip and empower women to participate at all levels in water resource programs, including decision-making and implementation, in ways defined by them.

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At about the same time in this decade, agencies came to recognize the need for greater understanding of the respective roles and responsibilities of men and women with regard to water, since targeting women alone, in isolation as it were, had achieved limited success. There was a new emphasis on the need to preserve the physical environment for future generations. The concept of sustainable development became important: in the water sector there was something of a shift from the provision of water to managing water resource systems. In the case of domestic water provision, where many improved water points had been underused or had rapidly fallen into disrepair (e.g., Black, 1998; White, 1997), this meant greater sensitivity to local priorities so that those involved would be keen to maintain their utilities.

The twenty-first century

The adoption in 2000 of the UN Millennium Development Goals (MDGs) has re-charged development policy and practice. The goals are clear targets, have global support and provide benchmarks for assessing the extent to which basic needs are being met. With regard to domestic water provision, the aim is to halve by 2015 the proportion of people without access to safe drinking water. Perhaps for simplicity's sake, both "safe" and "access" are defined in basic physical rather than cultural terms. It is assumed that water is more likely to be safe if the supply is "improved" and improved supplies are defined in terms of their source.³ Access is defined as meaning that the population should be within one kilometer of the water source or that water collection should involve a round trip of less than an hour. Thus, the water target concentrates on the concept of coverage, expressed in numerical terms. It does not embrace the issues of real accessibility, equity or actual use. The qualitative dimension and reality checks are missing.

Nor is gender taken into account. Three development targets relate to women; one concerns girls' school attainment and two concern women's reproductive health (with targets for reducing maternal and child mortalities). But links with the water target were not made initially. Clearly, the role of girls in fetching water may affect their access to education and thus their potential development, but issues of that kind were not addressed. The preparatory work for the 2005 mid-term review failed to analyze who had access to and who benefitted from better water supplies, making it hard to assess progress towards the MDGs' overall objective of reducing the proportion of poor people, many of whom are female. It is now recognized that "from now until 2015 greater efforts must be made to reach the poor and those in rural areas, whose deprivation is hidden behind national averages" (WHO/UNICEF, 2004:18). Gender analysts have long insisted that data on water should be disaggregated by gender, poverty and region, despite the complexities involved, and there are now some plans to do this.

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Interest in women “comes and goes” in international discourse and policy debates (Wallace and Coles, 2005). Serious concerns about how water privatization might discriminate against or omit the poor (and thus women) were raised ahead of the Doha rounds of the General Agreement on Tariffs and Trade (GATT) negotiations. The Paris Declaration on Aid Effectiveness stressed the efficiency aspects of aid delivery; there was only a glancing reference to gender as a cross-cutting issue, although the recommended processes of ownership, alignment, harmonization, results management and mutual accountability were highly relevant to women, prompting a response from the DAC network on Gender Equality (OECD, 2006). Conversely, UN organizations and the World Water Forum, with active lobbying by the Gender and Water Alliance, have given women’s involvement in the water sector far more prominence (Gender and Water Alliance, 2003).

The evolution of gender theory: Linking up with development policy and practice

The steps taken to address gender aspects in water policies did not evolve in a vacuum; they were influenced not only by general international trends in development thinking, but also by the women’s movement. (Before this, in the 1950s and 1960s, as we have seen, women were generally treated as weak and passive beneficiaries of welfare projects—of which improved water supplies might be one.) Analysis and comprehension of the respective roles and needs of women and men, their inter-relationships and the imbalances of power between them deepened, especially from the early 1970s onwards. Development agencies began to incorporate these issues in policy formulation, taking at least some account of feminist theory in Europe and the US. Boserup (1970) illuminated women’s crucial contribution to agriculture in parts of sub-Saharan Africa and Southeast Asia, emphasizing women’s productive role and their potential to contribute to development. A couple of years later, Oakley’s (1972) *Sex, Gender and Society* showed how the roles and responsibilities ascribed to sex in fact varied enormously from society to society and were, with the exception of child-bearing, culturally and not biologically determined.

Then came the Women in Development (WID) approach that emphasized understanding women as players in the development process. Attention was directed to the role of women outside the domestic sphere (which was designated “reproduction”) and to their contribution to production, as well as community social work (Moser, 1993). Development policy evolved: the Gender and Development (GAD) approach, now widely adopted, incorporated elements of more recent conceptual thinking. These included analytical work on the position of women within their networks and relationships, their position within households,

communities, institutions and at the national level (Kabeer, 1994), and the factors affecting their status. Existing social patterns, reflecting high levels of female subordination and male domination, came to be seen as obstacles to development. Women's empowerment came to the fore: whether for economic reasons or because of human rights, women needed to be "liberated" to fulfill their potential. However, the concept of empowerment is not simple; white feminists in the north have tended to equate it with achieving equality between women and men, whereas those from the south have emphasized greater self-reliance through more equitable access to resources. For example, at the time of the Beijing Conference on Women in 1995, African feminists made an important case for women's right to land. There was agreement that, to achieve the necessary changes, women's condition and position in each culture and society must be understood. The function of class, race, wealth and religion in molding women's experiences and society's expectations assumed importance, with southern feminists arguing that gender relations are so deeply rooted culturally and historically that they could not be properly assessed without fully understanding the context. Although patriarchal dominance was well-nigh universal, women were, therefore, by no means a homogeneous interest group.

Gender theorists began to challenge the overwhelming male dominance in setting the development agenda, arguing for a more radical transformation of development thinking that reflected women's priorities. Recently, going further, post-development theorists have challenged the validity of imposing Western notions of development on other parts of the world, claiming that they have been unsuccessful and counterproductive. Although providing little in the way of alternative models, these academics have embraced indigenous social movements and emphasized the need for development approaches that reflect the underlying value systems and cultural priorities of those involved (Matthews, 2004). Interestingly, a recent paper based on a study of 11 villages in India reflects some of these ideas. In this fine-grained research, Singh and colleagues argue that rather than seeking to improve women's status by involving them in areas traditionally the domain of men, such as the water users' groups that typically form part of the package of providing new water sources, "...the policy initiatives need to focus on empowering the actors by upgrading their capacity for performance of their gender roles as actors with greater efficiency and effectiveness" (Singh et al., 2006:198). It is unclear whether improving women's efficiency in a situation where their role is clearly inferior will adequately raise their societal position.

Rhetoric and reality: Relations between theory, policy and practice

These conceptual insights from gender theorists have been important in influencing the water supply sector at the level of international policy, but in practice their application has often been patchy. Depending on the organization concerned, there

has often been quite good communication between academics and senior professionals. For example, in the British government's aid department, DFID, we were fortunate. The social development advisers, who all had responsibilities for gender matters, had relevant research degrees and might employ academics as consultants when innovative policies or programs were required, so that there was good cross-fertilization of ideas. But in all the organizations I encountered—and I was involved in the OECD/DAC evaluation of donors' gender activities in 2000 (OECD, 2000)—the gap between this senior professional level of management and the implementation of projects in the field was striking; gender issues had a way of “evaporating” (Khan, 2003). In my experience, the organizational culture of those in the water sector, whether the international banks, governments, bilateral donors, private companies or international, national and local NGOs, has played an important part in this process: senior management is predominantly male, the culture is essentially patriarchal and the natural “default button” precludes the gender issue, with the result that it has low priority (Coles, 2001, 2007; Wallace and Wilson, 2005). This can result, for example, in such simple design faults as hand pumps that are too high or too hard for women to manage with ease, leading to their disuse.

In taking gender into consideration in project design, as required by many development programs, the process may well become simply a formulaic “ticking of boxes.” While gender specialists both within and in some cases outside development organizations have invested much time and energy in designing tools to facilitate gender training, guidelines for gender planning within the project cycle and check lists for gender analysis, they have much less frequently been involved in or written on the day-to-day problems of implementation, such as those worrying the staff in Kyrgyzstan (see also House, 2005). Substantive evaluations, involving academics or senior gender specialists, have been few and far between.

On the ground, implementers, whether locals or foreigners, may lack prior understanding of the communities they are serving. Given the conservatism of many rural areas, local men are often unwilling for “their” womenfolk to engage in public debate and women reluctant to do so, without training to build their self-confidence. Moreover, the organizations themselves typically lack sufficient and sufficiently respected women staff to champion the importance of women's involvement. In ways such as these, the gender policies of funding agencies are diluted away.

A case study from east central Sudan: Learning from field experience

My early experience came from research in a semi-arid area of eastern Sudan. It provided a particularly valuable introduction to the relations between rural populations and their water supplies. In particular, because this area of Gedaref District, containing around 200 villages, was varied in both its sources of water and in its human diversity, it showed the need for a context-specific approach to

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understand the nuances of why and how the available water sources were used and the responsibilities of those concerned.

Underpopulated for historic reasons, land was still available in the 1960s. There were three main ethnic groups: well-established Arab tribes, new and old incomers from western Sudan and West African pilgrims pausing on the *haj* (the Muslim pilgrimage to Mecca). Duration of settlement, ethnicity, family size, wealth, aspirations and adequacy of water sources interacted and were reflected in a variety of family lifestyles that were most marked in the dry season. For example, Arabs in the drier north, who had large herds, were the most ready to practice transhumance when seasonal wells ran short. West Africans preferred to settle by the river Rahad, with its permanent water and opportunities for fishing, bank-side irrigation and women's craft activities. Sudanese from the west were often prepared to fetch water from afar because this could be combined with tapping gum Arabic trees.⁴ Thus, the population and the women in it were by no means homogeneous.

In the home, all women were remarkably efficient managers of water. Water was required for drinking, food preparation and cooking, bathing, laundry and domestic livestock (the chickens and the essential family goat that supplied milk for the morning tea). Living in villages, I became acutely aware of women's skill in performing domestic tasks in situations of water scarcity; for example, I noticed how water for washing at mealtimes and before prayer was poured from a fine-spouted jug and how the dishes of food prepared varied with water availability. When washing young children, maximum hygiene with minimum water was achieved by beginning with the face and moving down to the feet, the child standing awhile in the deep tray used for laundry. In normal times, demand for water was fairly inelastic at about 16 liters per head per day, but at a time of drought as occurred during my fieldwork, some women had to make stringent economies, making do on a half or even a third of their normal requirements to the detriment of living standards.

When a water point was in or on the outskirts of a village, it was usually women who fetched the water, although there were variations according to ethnic group.⁵ But when water was hard to obtain, when a well was particularly deep or the water source distant, men undertook the task, particularly as it was considered culturally undesirable for women to fetch water from a neighboring community where they would encounter male strangers. Given that only 65% of villages had enough water throughout the year, men's role in collecting water in the dry season was, in this instance, considerable, challenging the assumption that women were always the providers. Where the distance involved was over a few miles, a village needed to have sufficient donkeys or camels to transport their water or sufficient wealth or influence for water to be trucked in. (The alternative was to migrate until the rains returned.) The allocation of water resources, based on Islamic values (see Caponera, 1954), enabled women unsupported by able-bodied men and the very poor without animals for transport to continue to use the meager yield from village wells, while other families obtained their water from further afield.

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Inevitably, when water had to be obtained from afar, it was harder for families to rise out of poverty, because delivered water had to be paid for or, alternatively, the time involved in fetching it reduced income-earning opportunities. It was also harder to improve household living standards or invest in better housing, aspects that particularly affected women. Importantly, the government was reluctant to provide services, all of which need water, except to established villages with good year-round water supplies. This particularly affected girls' education because it was considered unsuitable for them (unlike boys) to walk to schools in these larger centers. Reliable, adequate and accessible water supplies were thus a prerequisite for human development.

A case study from India: Religion, exclusion and access to water

A vital point to emphasize is that water is not just an essential requirement for human life; it is also imbued with social, cultural, emotional and spiritual, as well as economic, meaning.⁶ Perceptions, values and beliefs underlie how each of the stakeholders concerned with the provision and management of water supplies acts.

There are some striking examples from India and also parts of Nepal. Here the way in which Hindu concepts of purity and pollution, mediated through caste as well as gender, may result in *dalit* women being permanently excluded from certain water sources, both traditional and new ones, lest they render them impure for others (Joshi and Fawcett, 2005).⁷ Though the caste system was officially abolished long ago, traditional norms often still prevail at the local level. Although it is official policy to rectify caste-based inequities, in 1980 the commissioner for scheduled castes reported: "One of the most obnoxious disabilities suffered by the rural *dalits* is the lack of access to drinking water." In many rural areas, water management systems are still largely traditional, with powerful, higher caste men ensuring that their families access and control the most favored water sources, forcing out vulnerable families, which have to make do with less adequate supplies.

When water projects come to an area, it is easy for these generally wealthier members of a community to ensure that their families benefit most in terms of the location of new or improved water points because they have the necessary contacts with local officials (Pandey and Moffat, 2005; Singh et al., 2006). A recent critique of a handful of villages involved in a World Bank supported water program in Uttaranchal, the SWAJAL project, showed that discrimination against *dalit* women persists today. The Bank documents assumed that the villages were homogeneous and that women's participation would bring equitable benefits. The local NGO, led by Brahmins, charged with organizing the water users' committees, was committed to "community participation," but this did not include a commitment to challenging caste-based or gender inequities within the villages concerned. Although a percentage of positions on water committees was reserved for women and for

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members of scheduled castes, the *dalits* on the committees in one village were found to be powerless and their representation ineffective because, as one said, “When we *dalits* cannot sit...together...how can we plan together?” (Joshi, 2005:145). *Dalit* women were only sometimes invited to take part in any of the associated women’s activities—health education, training for income generation and so on. In any case, they often found it socially difficult to attend such events and, for example, in the case of sewing machine training, could never benefit, being unable to afford a machine.

To conclude, *dalits* and women often remain ritually excluded. Deeply rooted caste and gender inequalities cannot be erased swiftly and simply by political decree. The result is that they may be effectively excluded from decision making and that, if so, they continue, even in new water projects, to be excluded from the benefits. This may be an extreme example, but cultural and religious values are important.

Two case studies from Nepal: The importance of commitment to gender aspects

A major element in the success of projects is the level of serious commitment to gender on the part of the organizations and individuals concerned. So, too, is attaining the participation of local women and respecting their needs in the planning process. Two related case studies from Nepal illustrate these points.

In one project, where comparatively little effort had been made to ascertain women’s views and where their participation had been low, “improved” water was provided to villages close to the alignment of the road, since this was, technically, the most economical layout for pipes, and washing places were erected beside the taps. (This was an example of a fairly common practice of offering communities only a standard “gender neutral” package of water improvements.) Unfortunately, modesty precluded women from bathing or washing personal clothing at these exposed public sites. The result was that they were doubly burdened, collecting and paying for water from the new source for consumption by the household, but either carrying additional water home or returning to their old pools secluded in the forest for personal bathing and laundry. This failure to take women’s requirements into account served to increase their workloads—in some cases, the daily distances travelled to collect water increased by several times—and involved them in additional household expense, the payment of water user fees, nullifying much of the intended benefit. Eventually, some of the new water sources fell into disuse and disrepair—the women didn’t value them sufficiently to care for them (Regmi, 2005; Regmi and Fawcett, 1999).

In contrast, NEWAH, a local NGO which ran one of the water projects critiqued by Regmi, subsequently developed a gender and poverty (GAP) approach

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in their work, initially with the support of Water Aid Nepal, which provided a gender consultant, and later DFID (Pandey and Moffat, 2005). The organization began by developing a common understanding that gender inequality seriously constrained poverty reduction and links were made between caste, ethnicity, gender and deprivation. Gender training began at the top and led to an action plan: the commitment of the organization's leadership, who were then all male, was crucial to the sustainability of the concept. Despite the local shortage of educated women and barriers to women travelling, a strong attempt was made to recruit women onto the Board, into senior management, and to train women as field technicians. Gender training was rolled out throughout the organization. Five years on, women and men were working well together, although a major initial constraint had been the prevailing negative cultural attitudes concerning women's abilities, which had affected both men and women staff.

Beginning with five pilot villages, the new approach began to be extended to the whole program between 2002 and 2004. The pilot program was evaluated after the first two years, and Pandey and Moffat, reflecting on the experience, suggest that long-term planning is needed to change behaviors at the level of the organization, the communities and households in a society where gender discrimination and caste prejudice are so deep-rooted. They felt that a first step to achieving change on the ground is to change attitudes within the organization, where commitment is needed at every level. Local situations needed to be handled sensitively, and while the aims of social inclusion should never be forgotten, sometimes compromise was required at the start. The evidence showed that the GAP approach had improved women's ability to have choice in the location, design and orientation of water points and this had led to their better use. In GAP villages (compared with the rest), women, the majority of whom were from disadvantaged castes or other minorities, were relatively strongly represented on water user committees and able to influence decisions, and water points were better maintained. Some poor women had been trained and were paid for work during project implementation, resulting in improved income and respect. It appeared that women now had improved status within their homes. These were early results, but perhaps the new emphasis on the sustainability of water supplies will allow the program to continue to monitor and support the communities served. What is important here is that both this work and that by House in Tanzania (House, 2005) endorse what had previously seemed to me to be a rather optimistic assumption that encouraging and supporting women to participate in improving local water supplies built their self-confidence and contributed to improving their status more generally.

Conclusions

In the last few years, more examples of good practice engendering water projects have been reported (e.g., Brewster, 2006), but, nevertheless, a recent IFAD review concluded that: "In general the problems are well known; there is a critical need to identify solutions..." (IFAD, 2007:24). In terms of the broad development narrative, there needs to be greater commitment to gender equity at all levels in governments and agencies, as well as actions to enable women to access resources and play a full part in the development process. However, given the pressing need to improve water resources for the rural poor, perhaps the material in this paper suggests some possible and practical ways forward. The most successful projects have usually been those that responded to demand, to needs as perceived by the community, especially its prospective beneficiaries (White, 1997). The argument that water projects will not be sustainable unless this is achieved is powerful and readily understood by implementing agencies. It does not require a sophisticated understanding of gender. Much more emphasis needs to be placed on evaluation⁸ a few years after improvements have been made in order to ascertain subsequent usage before ascribing success to a program, and there needs to be willingness to learn from this experience.

The methods used by implementers to ensure that women's or minority views are reflected in project decisions can be flexible, conforming better to local social realities, rather than the crude requirement of attending (often male-dominated) meetings. For example, in one South African study, household questionnaires were used, the subsequent analysis showing that women wanted a different solution to their water problems than the one originally proposed by the water authority (Hope, 2006). Importantly websites in countries such as India are now providing implementing bodies, including NGOs and local government, with much more opportunity for exchanging practical knowhow appropriate for local conditions. Given the importance of socioeconomic factors other than gender, a broad social development analysis, rather than a narrow focus on gender, is often a prerequisite for assessing an equitable distribution of benefits. In some cases, to strive to achieve measurable general improvements in gender relations in the face of deeply held cultural beliefs will be unrealistic (or even counterproductive) given the two- to three-year time span of most water projects, but implementers should nonetheless be alert to chances for improving women's status. The very fact that women have had their views taken into account may raise their position in the community. For the most part, it is women who are the direct beneficiaries of domestic water projects, and the practical advantages of successfully improved water supplies should not be underestimated. The results may provide women with time, enthusiasm and energy to seize unexpected opportunities; the practical advantages may also be strategic in themselves.

NOTES

¹ Recent comprehensive examples of this grey literature are Rathberger (2003) and UN (2005).

² There are recent examples, too, of women bringing pressure to bear on the authorities, albeit sometimes by unusual means, demanding better water supplies and their better upkeep. In 2001 a Turkish town close to Antalya hit the headlines when wives refused to have sex with their husbands until they in turn got the authorities to mend the deteriorating piped water system (BBC report). See also Page (2005), where women in Cameroun demonstrated in front of the town offices of a private water company that intended to charge for the use of previously free water stands, urinating in public, the traditional means of bringing shame on the opposite sex. The local manager left town forthwith.

³ “Improved” water sources include water piped into a house or yard, public tap or standpoint, tubewells or boreholes, protected springs, rainwater collection systems and bottled water from an improved source.

⁴ These preferences affected concepts of water adequacy, and thus played a part in the choice of settlement sites, which tended to be related to hydrological possibilities, reflecting the geology, topography and rainfall.

⁵ Some West Africans and the very religious were reluctant to let young wives fetch water, but girls and older women could do so. Arabs took a pragmatic view: sometimes men would help out if the family’s women were otherwise occupied. Among the western Sudanese, women collected the water.

⁶ We in Britain are no exception. Although water has flowed silently through anonymous pipes into most homes for around a century, we, too, have deeply held cultural perceptions about water. Water is used in the Christian act of baptism, one of the few religious rites popularly retained in a largely secular state. Pennies are still thrown in wishing wells at theme parks even if knowledge of the myths surrounding the practice are largely forgotten and the original wells filled in. In the UK, the widespread conviction that water was a public good, freely available to all, underlay the unexpected strength of the political opposition to water privatization when it occurred in the 1970s, the adverse response being far stronger than opposition to the privatization of other utilities. As elsewhere, water is perceived, used and managed differently by men and women. Until recently, there were marked differences in the washing behavior of adolescents in terms of gender. Teenage girls had very different attitudes to personal hygiene and washing compared to teenage boys; girls’ consumption of water and associated toiletries was very much greater, although now the balance is largely redressed. Today, if water pressure declines in a summer drought, women are concerned with running the washing machine while men are concerned with the flow from their garden hoses. Thus, understanding our

own attitudes to water, albeit in an area where supplies are plentiful, helps sharpen our awareness of the attitudes of communities in other regions, where values are honed against a background of scarcity and sharper forms of social differentiation.

⁷ All women are regarded as impure when menstruating or after childbirth, but *dalits* are permanently impure and therefore they pollute the water sources traditionally preferred by other castes if they attempt to use them. Government supplied tap water is officially available to all, but restrictions may still apply.

⁸ This evaluation should be interdisciplinary, bringing together both hydrological and social dimensions.

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