

## Gendered participation in water management: Issues and illustrations from water users' associations in South Asia

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**Abstract.** The widespread trend to transfer irrigation management responsibility from the state to “communities” or local user groups has by and large ignored the implications of intra-community power differences for the effectiveness and equity of water management. Gender is a recurrent source of such differences. Despite the rhetoric on women’s participation, a review of evidence from South Asia shows that female participation is minimal in water users’ organizations. One reason for this is that the formal and informal membership criteria exclude women. Moreover, the balance between costs and benefits of participation is often negative for women because complying with the rules and practices of the organization involves considerable time costs and social risks, whereas other ways to obtain irrigation services may be more effective for female water users. Although effective, these other and often informal ways of obtaining irrigation services are also typically less secure. More formal participation of women can strengthen women’s bargaining position as resource users within households and communities. Greater involvement of women can also strengthen the effectiveness of the organization by improving women’s compliance with rules and maintenance contributions. Further detailed and comparative research is required to identify the major factors that affect women’s participation and control over resources, if devolution policies are to address the tension between objectives of transferring control over resources to community institutions, and ensuring the participation of all members of the community, especially women.

**Key words:** Gender, Participation, Water user associations

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### 1. Introduction

The devolution of natural resource management responsibility from the state to “communities” or local user groups has become a widespread trend that cuts across countries and resource sectors. However, devolution of control over resources from the state to local organizations does not necessarily lead to greater participation and empowerment of all stakeholders. While there may be many ways of identifying groups that are frequently marginalized, gender differences in power and influence are a recurring pattern. Women’s participation has received considerable rhetoric, but

there has been less careful attention paid to the differences between women’s and men’s needs and priorities with regards to resource use, and the barriers women face in achieving control over resources, especially within local organizations.

This paper examines the implications of gender differences for the local management of irrigation systems in South Asia. Because the outcome of devolution programs hinges on the activity of local organizations, the paper examines the extent and forms of women’s participation in these organizations, using examples of water users’ association in South Asia and presents evidence on the effect of gender differences

in participation on system management as a whole. Because of the lack of systematic research on gender dimensions of community organizations for irrigation and management of other resources, it is impossible to draw firm conclusions about the need for and impact of female involvement (or non-involvement). This paper tries to draw out the main issues, and illustrate them wherever possible with empirical examples. The concluding section looks at ways to increase women's involvement in resource management organizations and highlights policy issues and critical areas in which further research is needed.

## 2. Gender, communities and natural resource management

### 2.1. *Gender and communities*

The gender analysis literature abounds in examples of how systematic, socially-constructed patterns of differences between men and women affect the distribution and use of resources within households (see Haddad et al., 1997; Hart, 1995). However, Agarwal (1997a) argues that leaving this analysis at the household level is incomplete, because it does not take into account the effects of the community on gender relations in the household, or vice versa. On the other hand, analyses of stratification within communities generally have not dealt with the implications of gender.

In terms of access to and control of resources, gender interacts with other aspects of socio-economic differences, implying that women cannot be considered a homogeneous category in terms of their interests and needs. It is therefore difficult if not impossible to generalize about the interests of women. What is possible is the identification and analysis of how gender shapes and influences the possibilities, interests, and perceptions of men and women as regards natural resource management.

The case for including attention to gender differences within communities depends on the extent to which patterns of resource control, decision-making, or welfare outcomes are influenced by systematic differences between men and women. Gender relations crucially influence both the structures of property and endowments with which people enter communities, as well as the structures of reproduction that govern domestic divisions of property and labor and thereby shape people's relationships to communities. Furthermore, community organizations affect women's access to and control over resources and decision making and welfare. Thus, whether the policy objective is to achieve more efficient and sustainable use of resources, or to promote equity and greater local

participation and control, systematic power differences between men and women merit attention.

The linkages between gender, natural resource management, and communities become especially relevant for policies in the context of the current emphasis on devolution of resource management. As the state transfers responsibility and rights over natural resources – forests, pastures, fisheries, or irrigation systems – to local “communities,” membership in local resource management organizations takes on an increasingly important role in determining rights over resources. Hence, it is critical to examine and be aware of *who* within the communities takes on the tasks, and who controls use, decision-making, and the stream of benefits. If control over resources is devolved to “traditional” institutions it should be realized that these may be male dominated.<sup>1</sup> Devolving authority to such existing authorities is likely to reinforce existing power relations. The alternative, creating viable new “democratic” institutions is difficult and time-consuming, especially if they are to be strong enough to manage a valuable resource over a long period.

The literature on common pool resource management addresses implications of heterogeneity of assets, as well as heterogeneity of preferences for collective management of resources. Although this does not deal specifically with gender issues, some of the issues raised may be applicable. Baland and Platteau (1996) argue that differences in assets or power are not necessarily a disadvantage for natural resource management, but cultural differences (in perceptions and norms) and differences in interests in a resource can be detrimental. The potential for asset differences to cause negative effects is less if the stronger members have an interest in the resource and depend on the contribution of the less powerful for maintaining the infrastructure or enforcing rules, or if the links between the two sets of users are highly personalized and multi-dimensional. This would imply that strong differences between women and men in expectations and priorities are likely to be problematic. The multi-stranded linkages between women and men mean that intra-household negotiations affect the outcome of natural resource management at the community level, and that women will have more bargaining power for getting their needs met if men need women's direct or indirect contributions to resource management (Meinzen-Dick et al., 1997a). The extent to which women are able to meet their water needs through community or household institutions must, however, be examined empirically.

## 2.2. Gender and participation in resource management organizations

There is a long history of women's involvement in local organizations. Moser (1989) identifies participation in community managing work as part of the "triple role" of women (along with their reproductive and productive roles), and notes that this has formed the basis for many welfare approaches to women (e.g., mothers' clubs, provision of relief, or community services such as domestic water supply or health care) that treat women's organizations as an extension of their domestic roles. Other literature and efforts to organize women have focused on information and political empowerment (e.g., DAWN, 1985).

The major types of women's organizations for production have been cooperatives and micro-credit programs (e.g., SEWA). Both of those deal with "enlarging the pie," or creating new assets. Women's participation in organizations with control over natural resources is more challenging (literally) because it deals with property rights over existing resources, especially natural resources. Instead of creating new assets, which is a positive-sum activity for members and does not threaten the rights of non-members, participating in the management of resources such as land or water can be divisive. For women, as for the poor, to formally claim a right to the resource and take an active role in its management therefore challenges the status quo.

At the level of policy formulation, there seems to be widespread consensus about the need to include women in community organizations for resource management and conservation. The Dublin Statement on Water and the Environment adopted,

Principle No. 3 – Women play a central part in the provision, management and safeguarding of water... 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 resources programmes, including decision-making and implementation, in ways defined by them (ICWE, 1992: 4).

Many projects and programs that involve the organization of community based groups do make explicit mention of their intention to guarantee some degree of participation of women. Contrary to the expectations raised by these policy statements, there exists very little evidence of explicit attempts at increasing or improving the involvement of women, and even less evidence of success.<sup>2</sup> Most of the mainstream literature on natural resource management (especially irrigation) does not mention gender differences (other

than in the form of the occasional obligatory statements that more attention is needed) or differentiate between male and female users. Much of what is available is in the form of project documents and gray literature. The gender and environment and ecofeminist literature does make frequent mention of women as resource managers, but this seems to be mainly based on the recognition of women as important *users* of natural resources. If management implies some kind of *control* over decision making and planning, it is less likely that women are still as frequently to be considered managers (cf. Jackson, 1993).

## 2.3. Recognition of women as water users

A first and crucial condition for enabling and questioning women's participation is the recognition, at all levels, of women as resource users and managers, and the acceptance of women's resource and management needs as legitimate. In the context of irrigation, and with possible exception of female headed farms, women often continue to be perceived as helpers of their husbands. Men are seen to best represent the water related interests and needs of the household at the level of the community, and complete congruence of interests between men and women is assumed. These ideas are partly, and often implicitly, based on a unitary model of the household and a representational division of the world into two clearly delineated spheres of activity, the public and the private. The paradigmatic subject of the public and economic arena is male, where that of the domestic arena is female (Goetz, 1995).

In much of the South Asian irrigation context, these assumptions are not valid. Using water or irrigating is not confined to men; women do use water both for productive as well as domestic purposes. In addition, women provide labor or other resources to the maintenance of irrigation systems, and they directly or indirectly benefit from the use of irrigation water. They do so mostly in their capacity as *co-farmers*, working in close collaboration with their husband to cultivate irrigated crops on their husband's (or the family) plot. In such a situation, the *nature* of husband and wife's needs for water is usually quite similar: both want and need a supply of water that is adequate for successfully growing one or more crops a year. Differences of opinion and in preferences may nevertheless exist, regarding the timing and timeliness of water deliveries, which are based on gender divisions of tasks and responsibilities or on different crop preferences.

Women often also use water for additional purposes other than irrigating the main crop, for instance for watering livestock or for irrigating the homestead or for domestic purposes (see Zwarteveen (1997, 1994)

for a more detailed description of gender differences in water needs). The number of women using water for irrigation in their capacity as *heads of farms* is reported to be steadily increasing in most South Asian countries (see Bhattacharya and Jhansi Rani, 1995). Female heads of farms may have different water needs than male farmers, either as a consequence of a reduced availability of male family labor, or because irrigated agriculture assumes a different importance in the household's livelihood strategy.

Gender differences in water needs have not been widely documented. Nor is there a lot of documentation about women's uses of water, or of women's involvement in irrigated agriculture. Increasing the recognition and legitimacy of women's water related needs and interests and of gender as a source of differences as regards those needs and interests crucially depends on more information and on research to gather this information.

### 3. Water users' organizations in South Asia

#### 3.1. Membership of water users' organizations

Evidence from water users' organizations in Sri Lanka, Nepal, Pakistan, and India shows that women's participation in these organizations is much lower than men's (see Table 1). In all these countries there is low female participation in water users' organizations despite high involvement of women in irrigated agriculture and agricultural decision making. In most cases, low female participation is also in conflict with official policy statements, which almost always claim that the involvement of *all* farmers or water users is the ultimate objective. The few documented cases of a higher female involvement in water users' organizations either stem from women-only organizations managing groundwater pumps (van Koppen and Mahmud, 1995; Jordans and Zwartveen, 1997) or are from areas where men were not interested or absent (Jayasekhar et al., 1992; Dalwai, 1997).

The extent of participation, by men or women, in organizations for resource management is the outcome of two factors: rules for membership, which determine eligibility to participate, and the balance of costs and benefits to be derived from involvement, which influence individuals' decisions to participate.<sup>3</sup> While membership criteria and incentives for participation have received attention in analyses of water users' associations generally (see Ostrom, 1992; Meinzen-Dick et al., 1997b), there has been much less attention to gender differences in either of these critical areas (Agarwal, 1997a).

#### 3.2. Formal and informal membership criteria

The most easily recognized gender-based barriers to participation stem from membership rules that directly or indirectly exclude women. These either stipulate that only formal right holders to irrigated land can become members (Sri Lanka) or require head-of-household status in order to be eligible for membership, or sometimes a combination of both (Nepal). Since men tend to occupy these categories more often than women, most women are not considered eligible for membership.

Prevailing stereotypical ideas about the gender division of labor and about appropriate male and female behavior function as informal membership criteria. In Sri Lanka, Nepal, Pakistan, and India, ideas that only men are farmers and interested in irrigation, along with the traditional male domination in public decision making, are factors that underlie the absence of women in water users' organizations (Bandaragoda, personal (e-mail) communication, 1997; Bruins and Heijmans, 1993; Kome, 1997; Zwartveen and Neupane, 1996). In addition, women are thought not to be capable of participating in meaningful ways (partly because they are illiterate) and they are assumed to be busy with other, more appropriate female activities (Bruins and Heijmans, 1993; Zwartveen and Neupane, 1996). Social norms prescribing women to confine their activities to a small geographical area (homestead, village, or nearby fields) may also effectively exclude women from becoming members of water users' organizations (IRDAS, 1993).

In addition to these formal and informal membership criteria, the process through which new water users' organizations are formed in management transfer programs is often gendered, partly as a result of pre-conceived notions of planners about who are to be considered users, and partly because of the organizing process itself. In Sri Lanka, the Irrigation Department initiated this process by contacting those farmers they already knew, whom they asked to inform and mobilize other farmers. Almost all the farmers known by the Irrigation Department were men, and very few of these men invited female farmers to participate. The fact that the first set of activities to be undertaken by the new organizations concerned rehabilitation construction work further decreased the chances for women to become involved, since construction works are considered typically male activities (Kome, 1997).

Long (1989: 240) observes that "the question of non-involvement should not be interpreted to imply that non-participants have no influence on the constitution and outcomes. On the contrary, they can, as 'backstage' actors, have a decisive influence on strategies and scenarios." In spite of not formally being members

**Table 1.** Female participation in water users' organizations

Country	Female members (%)	Membership criteria	Reference
Sri Lanka	15	Legal ownership of irrigated land	Athukorala and Zwartveen, 1994; Kome, 1997
Nepal	0	Cultural notions regarding gender roles	Pradhan, 1989; Bruins and Heijmans, 1993; Zwartveen and Neupane, 1996
Pakistan	0	Officially recognized "water users" on warabandi lists	Bandaragoda, pers. (e-mail) comm., 1997
India	6	Legal ownership of land	PMU, 1991; IRDAS, 1993; Dalwai, 1997

or participating in meetings, women may play other roles in organizations, or in carrying out collective action. There exist a few documented examples of such non-formal ways of female participation. Pradhan (1989) describes how in the Bhanjayang Tar Ko Kulo in the hills in Nepal, women intervened in a conflict between head and tail-enders about canal maintenance. In the Sreeramsagar irrigation project in India, women in one village organized among themselves to remove obstructions in the canal and guard the water flow. The monitoring and enforcement reduced water theft, and elicited the following comment from an old male farmer: "We have seen that nobody is bold enough to obstruct women and it has made things easy for us" (Rao et al., 1991). A female farmer in another village in the same irrigation system played a leading role in settling water related conflicts. In yet another village, women took the initiative to help their husbands to irrigate, by allowing them to guard the canals and procure the water, while the women apply the water to the field. The *neerpaccis*, or common irrigators, in South Indian tanks are traditionally male employees of the WUA. In several cases, women have been seen carrying out the water distribution tasks – not as *neerpaccis* themselves, but carrying out the work for their husbands (field observations, 1994). In Sri Lanka, wives of male office-bearers often assist their husbands with administrative tasks and secretarial duties (Athukorala and Zwartveen, 1994).

Although highly anecdotal, these examples of management related tasks and roles of women suggest that non-formal and less recognized ways of participation in water users' organizations may prove to be a promising area of further research. It may provide important entry points for identifying realistic ways to make water users' organizations more gender equitable, while also shedding new light on the determinants of the performance of organizations by uncovering management practices and decisions that have hitherto gone unnoticed.

### 3.3. *Costs and benefits of participation*

Just as membership criteria have formal and informal dimensions for men and women, so also the costs and benefits include a range of tangible, as well as intangible factors that influence decisions to participate in the activities of local organizations. While the tangible factors may be easiest for outsiders to identify, other considerations can rank higher in local people's own decisions.

Because of their high domestic and productive workloads, the opportunity cost of time to attend meetings and do other work for the organizations is different (and often higher) for women than for men. Important in this respect is that it is not as easy for women to transfer some of their responsibilities to their husbands, as it is for men to leave some of their tasks to their wives. Timing and location of meetings may also impose a higher cost on women than on men. In the Ambewela irrigation system in the hills in Sri Lanka, meetings are held at night to suit male preference. For women, it is highly unsuitable to go out after dark (Kome, 1997). In another system in Sri Lanka (Parapegama), women do not like to go to the meetings of the water users' organization because they are held at the bar,<sup>4</sup> and usually end up with everybody drinking liquor. And, while most Sri Lankan men go to the meetings by bicycle, very few women own or ride bicycles, implying that it would take them much longer to go to meetings (Kome, 1997). Similarly, formal training held away from the village or community and requiring an overnight stay imposes a higher cost (in terms of child care arrangements or family resistance) on women than on men.

Because of membership criteria and as a direct result of the process of organization, water users' organizations in South Asia have often come to be historically and socially constructed and defined as predominantly male domains. For a woman to be able to actively participate in water users' organizations therefore implies challenging prevailing gender norms

and practices, at both the household as well as the community level. It would involve a re-valorization of female identity and work, rejecting norms and regulations that tie women to specific roles and it would imply struggling to occupy spaces previously reserved for men. As one Sri Lankan woman tried to explain the absence of women in the water users' organization:

Women work hard in the field. They contribute more labor to the cultivation than men. However, we never try to challenge the men. We think they should retain their position as head of household. Traditionally, a man is seen as the decision maker in the household. This is not the case in reality, but still we allow them to go to the FO (Farmers' Organization) meetings in that capacity. (Kome, 1997: 14)

Also, the abilities and capacities needed for participating in organizations, and especially for office-bearer positions, may not be as easily identified with women than with men for a number of reasons. In Nepal, "Women ...referred to their illiteracy as a reason for not attending meetings; they were afraid that they would not be able to understand what was being said and thought they would have little to contribute" (Zwarteveen and Neupane, 1996: 9). Farmers (male and female) in Nepal also mentioned women's lack of negotiating skills and mobility as two factors inhibiting meaningful participation of women (Zwarteveen and Neupane, 1996). On the benefits side, the prestige of participation in public forums, and especially of leadership positions in the organizations, may be valued more highly by men than by women (see Moser, 1989; Agarwal, 1997b).

Whether women are willing to bear these costs and face these social risks will largely depend on their assessment of the effectiveness of the organizations, and of formal participation as a means of achieving personal objectives, as compared to other means available to them. This calculation is illustrated by comments from a women in the Parapegama irrigation system in Sri Lanka:

I never participate in the FO meetings. If I go there I have to spend about 2 or 3 hours, but if I stay at home, I can make 200–300 beedi.<sup>5</sup> Therefore I do not like to go. I will ask my husband what the officers said. It is better to be a member of the Death Donation Society<sup>6</sup> than to be a member of the FO. The FO does not give quick benefits, we can cultivate without the FO. In addition to that, most people ignore the FO. (Kome, 1997: 24)

In the Nepal Chhattis Mauja system, which is a system traditionally managed by farmers, women said that they never attended meetings of the water users'

organization because the meetings offered no opportunities for them to raise their concerns and needs. Many of these women perceived "stealing" water to be an easier solution than offered by more formal channels (Zwarteveen and Neupane, 1996).

In other cases, the fact that women benefit indirectly from the organizations, even without participating directly, may explain why they see no need to participate more fully and formally. In the Rajolibanda Diversion Scheme in Andhra Pradesh, India, "although women are not actively involved in the discussions and approval of the operational plan, all women are aware of it" (IRDAS, 1993: 27). The women also indicated that because of the meetings, they benefited from a reduction in conflicts over water, and from information about when they would get water, which enabled them to plan their work in the house and the fields (IRDAS, 1993: 28–29).

#### 3.4. *Participation through informal domains*

That female non-members succeed in getting their needs met indicates that not all irrigation management decisions pass through the formal organization. Instead, the water users' organization can be considered one of a number of co-existing and partly overlapping "domains of interaction" (Villareal, 1994) in which decisions about resource management are taken. One such domain of interaction in which women influence water-related decisions and obtain services is the household. In almost all cases reviewed, women were observed (and themselves indicated) that if they needed anything specific to be said at water users' meetings, they would either tell their husband or try to send a male relative (often a son or son-in-law). Likewise, many women indicated that they received information about water delivery schedules and other decisions taken at water users' organization meetings through their husbands or male relatives.

When access to irrigation services is negotiated within the domain of the household, it becomes subject to the quality of the intimate relations women have with their husbands, sons and sons-in law, or fathers. Women's success in obtaining services geared to their needs will partly depend on the extent to which their specific water needs are complementary, shared, or conflictual to those of their husbands and male relatives, and on their bargaining position in household interactions.

Another important domain of interaction regarding water decisions may be the "field." Many negotiations, struggles, and conflicts regarding water take place alongside the canals, and actual water distribution is often partly determined in this domain. Kome (1997) reports that in a Sri Lankan Dry Zone irri-

gation system, one's capacity to take water is in the first instance determined by the location of one's fields along the canals. In second instance, water distribution follows the principle of "the survival of the fittest," reflecting existing power relations. Gender as one determinant of power also interferes in determining one's ability to obtain water. An example is provided by one woman located at the tail-end, who after having unsuccessfully tried to obtain water a number of times (at night) decided to ask her brother to divert the water for her. She assumed that other irrigators would be reluctant to prevent him from taking water, since he is a man and can better defend himself (Kome, 1997). Pradhan (1989) referring to hill irrigation systems in Nepal also mentions the ability to physically defend oneself as a factor that limits women's possibilities to take water in times of water scarcity.

Other domains of interaction that directly or indirectly (co-)determine women's access to and control of irrigation services may exist. Female networks (work groups as well as social groups) may be important, especially where male and female social networks are highly segregated. Individual contacts with people (mostly men) in powerful political positions can be a significant source of power. Female farmers in both Sri Lanka and Nepal could very clearly identify the persons they would approach in case they had water related questions or needs (Zwarteveen and Neupane, 1996; Kome, 1997). Maintaining good relationships with such people through regular courtesy visits and gifts may be an important mechanism for women to secure their access to resources.

The use of indirect means to obtain water resources is consistent with women's strategies for gaining access to other resources, such as land and trees (see Lastarria-Cornhiel, 1997; Meinzen-Dick, et al., 1997a; Rocheleau and Edmunds, 1997). But as is often the case with gender differences in property rights, gaining access through such indirect means does not provide much control over the resource, or the ability to make decisions regarding its management. Relying on connections to access the resource – whether through male relatives, officials, or others – increases women's dependence on others, whereas independent rights to resources can raise women's standing and bargaining power. Nevertheless, these socially nuanced means of access are critical to actual patterns of resource use, and should not be neglected in research or policies.

To what extent women's needs are "defendable" in the different domains depends on their social and legal legitimacy. In the case of water needs, although the literature often refers to irrigation organizations as "water users" associations (WUAs), they tend to include only irrigated farmers, and are concerned with water deliveries to field crops. Some of the uses of

water by women, such as water used for irrigating homestead gardens or watering livestock, are likely not to be included in formal water distribution plans, and may thus not be considered legitimate in the domain of the WUA. In other domains (such as the household and field) the legitimacy of these needs may be greater, allowing women access to water for meeting these needs. In this respect it is important to realize that women may have a vested interest in not being identified as users or farmers: claiming water as women (or mothers or domestic care-takers) may cause less resistance and be easier than claiming water as farmers.

In sum, looking at NRM organizations in some South Asian countries from a gender perspective suggests that the lack of visible participation of women in resource management organization cannot be construed as implying their lack of interest in the use and management of the resource, nor does it imply that women do not influence what happens within the organization. Water users' organizations are only one of a possible number of domains in which decisions about the management of water are taken. Women's access to these other domains may be easier as compared to the formal organization, while their participation in these other domains may also be more effective. However, the fact that women succeed in somehow getting their water needs accommodated does not imply that more formal participation in water users' organizations is not desirable or necessary. Access obtained through informal means is not as secure, and control over water that is not sanctioned by democratically devised rules and principles is more prone to be influenced by unequal power relations. If devolution programs are to effectively transfer rights, along with responsibility for water management, to local communities, it becomes all the more critical to examine how those rights are distributed within the communities.

### *3.5. Implications of "non-participation" for the effectiveness of organizations*

The lack of participation of a large number of the users in the management of irrigation would, at least according to the theories of participatory management, imply performance weaknesses in the organization, because of weaknesses in communication, representation, democracy, and accountability, which may lead to free riding, rent seeking, and corruption (Ostrom, 1992).

In one of the few studies to address this from a gender perspective, Zwarteveen and Neupane (1996) found that the all-male organization for the Chhattis Mauja system in Nepal faced difficulties in enforcing

its rules on women. Female heads of farms in the head end of the system always took more water than their entitlements, while contributing less labor than they should. In other parts of the system, village irrigation leaders also mentioned water stealing by women as a problem that was difficult to solve because women were not members of the organization and could thus not be punished. Women did not steal water or “shirk” from contributing labor to maintenance only because of opportunism. Water stealing by women occurred partly because women had an interest in applying more water to the paddy-field than would be needed for optimal crop growth. A slight increase in the ponding depth considerably decreased weed growth, and thus the time women needed to devote to weeding. As for contributing labor, rules and prevailing gender norms made it difficult for women to comply. Female labor contributions are valued less and there is even an official rule that stipulates that labor for emergency maintenance and maintenance of the head dam can only be supplied by men. Fear of being harassed by men and cultural restrictions on female mobility further impede women’s ability to contribute labor (Zwarteveen and Neupane, 1996). The non-involvement of women weakens the organization, and though it has not yet come to the point of changing its rules to include all users, the problems of enforcing rules and contributions on head-end women may yet bring about such a change, especially if male migration increases the number of female-headed farms.

## Notes

1. According to Wade (1987: 230, cited in Baland and Platteau, 1996) “corporate organisations, to be effective, should be based on existing structures of authority. In practice, this means that the council will be dominated by the local elite which is a disturbing conclusion for democrats and egalitarians.”
2. Even in the domestic water supply arena, where women’s roles are well recognized, Narayan (1995) found that only 17% of the 121 “participatory” projects reviewed achieved substantial levels of female involvement.
3. For a similar analysis of issues related to natural resources management in the forestry sector, see Agarwal (1997b).
4. It is not typical for Sri Lanka that bars are used as meeting places for Farmers’ Organizations. Meetings are often held at temple grounds or community centers, which are socially accessible to women.
5. Beedis are local cigarettes. Making beedis is an attractive income-generating activity of young women with children, since they can do it at home.
6. Death Donation Societies are savings societies. In principle, savings are meant for funerals. In practice Death Donation Societies often also provide loans for consumptive or agricultural purposes.

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