

GENDER AND IRRIGATION: OVERVIEW OF ISSUES AND OPTIONS<sup>†</sup>BARBARA VAN KOPPEN<sup>1</sup> AND INTIZAR HUSSAIN<sup>2\*</sup><sup>1</sup>*International Water Management Institute (IWMI), Colombo, Sri Lanka*<sup>2</sup>*International Network on Participatory Irrigation Management (INPIM), Islamabad, Pakistan*

## ABSTRACT

In an overview of the evolving debates on gender and irrigation in the past two decades, this paper argues that the success of today's policy attention on a blanket policy on gender and irrigation is at the same time its weakness. Two key variations need to be specified for any gender policy to become sufficiently specific to have any teeth. First, gender issues critically differ in female/dual farming systems and male farming systems. Second, water for productive and domestic uses need to be recognized and developed in an integrated way, for both men and women. Copyright © 2007 John Wiley & Sons, Ltd.

KEY WORDS: gender; irrigation; multiple water use; female farming system; male farming system; dual farming system; policy

Received 28 November 2006; Accepted 12 January 2007

## RÉSUMÉ

Dans une vue d'ensemble des discussions en cours sur le genre et l'irrigation dans les deux dernières décennies, cet article argue du fait que le succès de la politique globale d'aujourd'hui est en même temps sa faiblesse. Deux différenciations principales doivent être prises en compte pour qu'une politique de genre devienne suffisamment spécifique pour être efficace. D'abord, les problèmes de genre diffèrent fondamentalement entre les systèmes de production féminin/mixte et les systèmes masculins. En second lieu, les usages de l'eau pour la production et pour les utilisations domestiques doivent être identifiés et développés d'une manière intégrée, pour les hommes comme pour les femmes. Copyright © 2007 John Wiley & Sons, Ltd.

MOTS CLÉS: genre; irrigation; usage multiple de l'eau; système de production féminin; système de production masculin; système de production mixte; politique

## INTRODUCTION

Just two decades ago, the common answer to the question “what are the gender issues in irrigation?” was simply: “none”.<sup>1</sup> If there were any gender issues in water, it was in domestic water supplies, where women's responsibilities as housewives to ensure daily domestic water supplies have always well been recognized, especially among the poor where women and girls bear the greatest brunt of the lack of access to near, affordable, and safe water supplies. This emphasis on women's roles as housewives strengthened the stereotype that women have no relevant productive role, other than perhaps “helping” their husbands, which justified their categorical exclusion from agricultural and irrigation policy and intervention. Household welfare and production seemed an either–or issue. This persistent dichotomy of women as housewives and men as breadwinners was profoundly

\* Correspondence to: Dr Intizar Hussain, Executive Director, International Network on Participatory Irrigation Management (INPIM), Islamabad, Pakistan. E-mail: ihussain@inpim.org

<sup>†</sup>Genre et irrigation: vue d'ensemble des problèmes et des solutions.

challenged to make the case that there *are* issues related to irrigation and gender. Thus, the first gender and irrigation issue raised since the 1980s was that women *are* important self-employed agricultural producers, who also need access to irrigated agriculture, and that this has far-reaching implications for policy makers and intervening projects, including engineers. The general policy recommendation became to target men and women farmers on an equal footing, to ensure improved access to water for all on equity grounds or, as a step further, to ensure their projects succeed on productivity grounds (Hanger and Morris, 1973; Dey, 1980; Zwartveen, 1994; Merrey and Baviskar, 1998; Van Koppen, 1998). This first and by now well-known gender and irrigation issue will be summarized.

Later studies further nuanced women's roles as farmers. The recognition that women are often farm producers should not become a new, equally unproductive, stereotype. Moreover, it makes a lot of difference whether women are engaged in agriculture and irrigation as unpaid family workers, or as the farm decision-maker. Under some conditions women are the majority of farm decision-makers, but under other conditions they are not. From the range of case studies on gender and irrigation generated in the 1990s, it can be concluded that the gender issues and options that irrigation agencies and policy makers can and should address productively vary completely in, on the one hand, farming systems where at least one-third or even more than two-thirds of the farmers are women, the respective so-called "dual" and "female" farming systems, compared to, on the other hand, "male farming" systems, where women farm decision-makers are a minority of, say, less than one-third, so where the stereotype that men are the bread-winners and farm decision-makers is quite valid. Or, more precisely in male farming systems, women are often engaged in agricultural production and irrigation, but subordinated to their male kin who controls the production process and its outputs (Van Koppen, 2002, after Safiliou, 1988). Wealth status and poverty come into the equation in the sense that reliance on unpaid family labour tends to be higher among poorer farm households who cannot afford women to be housewives only. This is related to the tendency of replacing women's unpaid family labour by paid wage labour with increasing wealth status. This variation in gender issues and the corresponding options will be elaborated upon.

Today's widespread recognition that women *are* farm producers needing income and that there *are* critical gender issues in irrigation implies that pointing to women's roles as housewives has stopped being the implicit way to belittle their roles as producers, as it was in the past. An important new gender issue is to acknowledge the integrated nature of both domestic and income-generating activities for women *and* for men, and the role of "irrigation" water in meeting multiple needs for well-being. Neither for women nor for men is it fruitful to split livelihoods and well-being into "productive" and "reproductive". This is even more so among the poor whose health, but even more whose income is so critically hampered by the huge labour investments needed for less than basic domestic water and energy supplies – efforts that HIV/AIDS or malaria-affected households can afford even less. It is definitely artificial and unfruitful to try and split water flows, especially among the rural poor where infrastructure is still underdeveloped. In the daily reality of poor rural communities, the same water source, whether called "irrigation" or "domestic" water, typically meets multiple domestic and productive water needs simultaneously (Bakker *et al.*, 1999; Moriarty *et al.*, 2004). As the rural poor are well aware, the water sector also increasingly taps new opportunities for better service delivery by better integrating the domestic and productive sectors into water resources management at local level and including the domestic uses in "resources" management. As further discussed, understanding water, gender *and* poverty issues as bottom-up integrated water resources management allows agencies, men and women *jointly* to prioritize domestic water needs among poor households, then small-scale informal productive water uses by poor women and men, up to the larger and "formal" water uses. Pro-poor and gender-sensitive water resources management supports the poor to climb a multi-purpose water ladder.

### THERE IS AN ISSUE: WOMEN AS FARMERS AND IRRIGATORS

A vast body of research in the past two decades corroborated the first gender and irrigation issue: challenging the persistent stereotype among intervening agencies that women are housewives and, *therefore*, irrelevant as farm producers. The answer to the question "who is the farm decision-maker" is highly relevant for the irrigation sector which provides one input to the farm, water, and therefore primarily targets the person controlling the enterprise in which water is input.

An obvious category for which the stereotype that women are only housewives and not producers was clearly invalid, are the *de jure* and de facto female-headed households. Hence, headship of farm household is often used as a proxy to distinguish women who are engaged in income generating and farming from women who are primarily housewives. Proportions of female-headed households vary considerably between and within countries. For example, in Southern African countries the proportion of female-headed rural households and women-led farms in incidental districts may go up to 50–90% (Safilio, 1994). In Zimbabwe's communal areas, women constitute 61% of the farmers and comprise at least 70% of the labour force in these areas (FAO, 1998). In rainfed and irrigated agriculture in the former South African homelands, their proportion is estimated to be 70–90% (Makhura and Ngqaleni, 1996; Van Koppen and de Lange, 1999).

Many studies found that female-headed households are often poorer than male-headed ones. This was also found in male-dominated irrigation systems studied in Pakistan, India and Sri Lanka (Hussain, 2005). However, this relationship was found to be insignificant for countries like Vietnam and China. Other studies in Africa did not find such relationships to be significant either, so one cannot generalize a priori. Further, the relationship between female headship of the household and being the farm manager is often more complex, which renders headship of a household an important but not the sole proxy upon which to base interventions. First, the definition of the household head is problematic. The male-biased ideological tendency is still widespread to simply call any elder man in a household the head, and by default of that person call the woman a head.<sup>2</sup> Therefore, a more accurate analysis to identify the farm decision-maker has to replace the concept of the unitary household with either a male or a female head by the detailed analysis of production subsystems within farm households – who often deploy a range of income-generating activities. Such analysis reveals which production subunits are managed by women and which by men. Management means controlling the process, access to required resources, and the outputs, while interacting and bargaining with other household members, “each trying to get the best deal out of it” (Safilio, 1988). For example, such more accurate analysis of male farming systems in seven large-scale irrigation schemes in Gujarat and Andhra Pradesh in India showed that only half of the women heading households also managed the irrigated farm. In terms of scale, the assumption that only women headed-households can be farm managers overlooks the married women in the large numbers of male-headed households who manage the family farm or their own production subunit. In the study in India, this was the case in 10% of the male-headed farm households cultivating less than 1 ha. However, in none of the wealthier households with more land were women found to manage the farm (Van Koppen, 2002). In contrast, in Burkina Faso married women typically have their own production subunit, besides their labour contributions to men's plots. Women independently cultivate one-fifth to one-quarter of the total land (Imbs, 1987; Burkina Faso, Ministère de l'Agriculture et de l'Élevage, 1989). Women in male-headed households can also organize into women's groups for cultivation on their own, as widely documented for Africa, Asia and Latin America.

By the 1990s, the growing acknowledgement of women's roles as farmers incited irrigation agencies to change their intervention approaches by assessing and building upon the gendered organization of farming in their project zones and purposely targeting and including all farm decision-makers, both male or female, from the design phase onwards and ensuring their membership in water user associations. Often efforts were undertaken to ensure that the gender composition of committees reflects the gender composition of the members. For example, farm leaders in the West Gandak Irrigation Scheme in Nepal made it compulsory to elect one woman member in the committees of the 173 *upatolis*, the lowest tiers, of the new water users' association (Van Koppen *et al.*, 2001a). In South Africa, the government includes in its support for small-scale agricultural water users the condition that management committees of eligible water users' associations must mirror the gender ratio of farmers.

Targeting and including women farm decision-makers was shown to be a highly effective approach in areas where women's roles as farmers is widespread, as in dual or female farming systems. An early African example where such inclusion of all stakeholders and gender-balanced membership criteria from the very start worked well is the Provincial Irrigation Unit in Nyanza Province in Kenya. In this region, women contribute over 60% of all hours spent in rice farming, including irrigation, and manage 64% of all plots. Before the 1990s the project's policy was to include predominantly men as members of water users' associations. In its new policy the project required a minimum of 50% attendance by women at the preparatory meeting of new water users' associations. Parallel to these meetings, women were organized in women-only groups and trained to articulate their interests and to participate effectively in the mixed meetings. This policy proved to be effective. Women's attendance in the

preparatory meetings and committees today is higher than in the male-biased fora in other schemes that continued in the usual way. Furthermore, women's knowledge on project matters has increased, as well as the participation of women in water distribution and maintenance. Performance of women leaders is judged to be similar to that of male colleagues (Hulsebosch and Ombarra, 1995).

In Ecuador, Latin America, women were purposely included in the Licto irrigation scheme. Recognizing the local arrangements in which both women and men have water rights, the agency started by organizing both men and women in a local forum in which the proposed scheme layout was discussed and the construction activities planned. Before the construction started, clear and inclusive membership criteria for the new water users' association were established, and water rights were linked to obligations in the construction of the new scheme. So an inclusive organizational design was implemented at the very start. About 80% of all construction activities were carried out by women in working groups (*mingas*). The new water certificates were given in the names of both spouses of the household. Pregnant women also obtained water rights, but they were granted dispensation from carrying out construction work (Arroyo and Boelens, 1997; Video. Irrigation in Andean community: A social construction).

An Asian example is in Gujarat, India, where the Aga Khan Rural Support Programme successfully organized the women's group of Jambar to own and manage a collective mechanized pump to irrigate the homesteads on which they themselves were the main cultivators (Van Koppen *et al.*, 2001b).

However, a closer analysis of these successes but also of the situations in which women remained excluded from access to irrigation water, membership of water users' associations and committees, in spite of affirmative action, points to an important variation on the theme of women as farmers. A critical explaining factor is the proportion of women farmers: do they constitute a good proportion of all farmers, as they are, by definition, in dual and female farming systems, or do they remain the minority, as in male farming systems? This variation on the theme of women as farm decision-makers brings two different patterns in gender issues and options to the fore.

### GENDER IN FEMALE AND DUAL FARMING SYSTEMS: A NON-EXPLOITATIVE MODE OF AGRICULTURAL GROWTH

In dual and female farming systems, a more gender-inclusive approach which does not discriminate against women (an equity issue) not only appears to meet a positive response on the ground, but is also a matter of hard-core productivity. For the mere sake of production enhancement, a new, unprecedented pattern of agricultural growth is needed that is no longer based on the exploitation of the labour of women "helping" their husbands, and that strengthens property rights to productive resources, in particular land and water, of the producer. An example where this productivity issue is paramount is the revitalization of smallholder irrigation schemes in the former homelands in South Africa, which are dual and female farming systems (Van Koppen *et al.*, 2004).<sup>3</sup> The productivity arguments in favour of a non-exploitative mode of agricultural growth are analogous to the arguments in the land tenancy and land redistribution debates, where the importance of non-exploitative resource rights has already been widely operationalized into reform policies – for men (cf. Jazairy *et al.*, 1992).

There is ample empirical evidence that gender-equitable agricultural production boosts productivity. Studies in the past decade, mostly from Africa, underscored that women producers are as efficient as men, provided they obtain equitable access to productive resources and human capital and reap the benefits of their efforts by controlling the output (for an in-depth discussion of these studies see Quisumbing, 1996). Also for irrigated agriculture, research confirmed that the productivity of women farm decision makers is at least equal to that of men, for example in Burkina Faso (Zwarteveen, 1997) and Senegal (Deuss, 1994). Even stronger, it became clear that exploitative intra-household production relations are counterproductive. A wetland improvement project in Burkina Faso even collapsed because irrigated land was given to men, instead of to women, the traditional rice cultivators and land titleholders. Later schemes, in which improved land was allocated to women, performed significantly better (Van Koppen, 2000). Other studies in Africa also highlight women's intra-household negotiations to allocate their labour in ways in which they themselves, rather than their husbands, benefit. Lack of control over, and too limited sharing in, the harvests of husbands' fields, were important reasons for women to reduce their overall labour input on their husbands' irrigated plots to the minimum level of culturally defined obligations. Sometimes women even completely abandoned irrigated agriculture and returned to their original villages, as observed in the Mwea scheme in Kenya (Hanger and Morris, 1973). Women avoid exploitative

farming relations most, if they have alternative income-generation opportunities. Carney (1988) found in Gambia that Wolof, Fula and Serrahuli women with alternative options to cultivate highland groundnut plots, tend to put in less labour on male-controlled irrigated rice fields than the Mandinke women who do not have that option. Similarly, higher remuneration by their husbands motivated women to contribute more labour to the SEMRY irrigation project in Cameroon. Jones (1986) highlighted that women rejected a too low compensation, primarily by engaging in alternative income-generating activities such as their own sorghum fields. Also, married women receiving below-average compensation generally spent more time hiring themselves out as paid labourers the following year. Women's remuneration could be in kind, usually as a share of the output, or a lump sum in cash "in return for their sweat".

The other side of the coin of women's contest, bargaining and labour withdrawal from male-dominated farming, is that a gender-equitable mode of production is likely to be *more* productive than male-dominated farming. Indeed, the Kenyan study by Ongaro (1988) showed that the introduction of new weeding techniques increased yields of farms managed by female heads of households by 56% and of those managed by men by only 15%. Ongaro argues that female heads may have a greater incentive to adopt better weeding practices (traditionally a women's task) when they control the proceeds of their increased effort (cited in Quisumbing, 1996; citing Elson, 1995). Higher farm viability under more gender-equitable production relations also emerged from a study in Greece. While in Greek rural areas male farming systems traditionally used to prevail, important unplanned social changes were introduced by the Common Agricultural Policy of the European Union according to which farmers with a full-time non-farm occupation could no longer be formally registered as farmers and receive agricultural subsidies. Since in order to survive they were not able to abandon their non-farm employment but also needed the subsidies, those who could overcome gender stereotypes about women's roles in agriculture legally transferred landownership and management to their wives. In most of these cases, wives replaced their husbands as farm managers, performing traditionally "male" and "female" farm work as needed and their agricultural roles were institutionally recognized. These small farm enterprises characterized by gender role flexibility were found to have much better survival chances than similar farm enterprises lacking such gender role flexibility (Safilios-Rothschild, 2003).

In sum, in today's farming systems that largely depend upon women's efforts as farmers, the issue of gender and irrigation in smallholder agriculture has become, for the first time in history: the design and implementation of a mode of agricultural growth and irrigation development that strengthens women producers' land and water rights (while women now only tend to have secondary use rights), and that avoids exploitative family labour relations. The production potential is increased by ensuring that both men and women producers directly control the production factors (labour, land, water, technologies, inputs, credits and markets) and reap the benefits of their efforts.

## GENDER IN MALE FARMING SYSTEMS: CHALLENGING DEEP-ROOTED MALE DOMINANCE IN PRODUCTION RELATIONS

The patterns of gendered farming are different in male farming systems. An example of a male farming system was found in a study of seven large-scale gravity irrigation schemes in Gujarat and Andhra Pradesh, India (Van Koppen, 2002). Among the 700 households studied, the majority of farm decision-makers were men, who decided about the entire farming process, including irrigation and the use of the farm's output, mostly by themselves and only sometimes jointly with their wives. Men also carried out all core farm tasks, such as the resource-related, technology-intensive and benefit-related tasks, which usually required interaction and negotiation with third parties, as in water users' associations. Females in the family performed the labour-intensive unskilled tasks, such as weeding, and sometimes also irrigating the fields, harvesting, threshing and processing. In better-off farms, unskilled tasks of wives were often allocated to paid (male and female) wage labourers. In most cases, land rights were vested in men.

Yet, here, as in any male farming system, there is invariably a minority of women farm decision-makers, such as widows, single and divorced women, women whose husbands are engaged in non-farm income-generating activities, or women who have land rights in their own names. If these women want to farm with these resources, they face a myriad of sexist cultural norms and taboos curtailing their productive potential – norms that are much milder, if existing at all, in female and dual farming systems. As research in male farming systems in India, Nepal and north Sri Lanka, and also in Kenya indicates, the minority of women farmers face obstacles in farming like

taboos about performing certain key tasks, like ploughing. Specifically concerning irrigation, norms dictate that women should avoid night irrigation, although women may still end up with this least preferred irrigation turn (Von Benda-Beckmann and von Benda-Beckmann, 2000). Similarly, there are taboos on women doing canal maintenance work, which is the obligation that one needs to fulfil in order to obtain irrigation water rights (Adams *et al.*, 1997). Women's physical and social mobility in production domains is also severely hampered. Interaction with strange men, certainly at places where women are not supposed to be, such as bus stands or bars, raises suspicion, while obviously essential for accessing inputs, technologies, loans or marketing arrangements and for effective participation in meetings of water users' associations (Agarwal, 1994; Zwartveen and Neupane, 1996; Merrey and Baviskar, 1998; Van der Molen, 2001; Van Koppen *et al.*, 2001a). The obstacles are often so severe that women farmers in male farming systems may prefer to leave farming to their sons or lease out their farms at typically below-market rates (Agarwal, 1994). Thus, in the study in India mentioned above, only half of the women heading households were the farm decision-makers, while only a quarter of women landowners choose to manage the farm themselves (Van Koppen, 2002).

Given these obstacles, the gender issues and options in male farming systems go far beyond water alone: women basically need to establish the full economic enterprise in which water is input, including women who already have some access to some resources. In such a highly skewed gendered organization of farming, the issue of tall order is profound economic, political and cultural gender discrimination intrinsic to male monopolization of production factors, including women's labour. Agencies, farm leaders and women can only challenge such norms step by step. Proactive support for the minority of women farm decision-makers not only boosts productivity of this minority, but will also challenge many of the firm gender stereotypes that curtail women's productive potential in general. Women's participation in committees also challenges norms, even if actual participation is weak. Exposing alternative norms and practices, for example on joint land and water rights; access to credits, technologies, markets and skill training; women co-deciding on crops to be grown; women carrying out canal maintenance work and ploughing, or women deciding on the proportion of crops to be sold and the use of the revenue, this all contributes to women gradually establishing their own or households establishing truly joint enterprises in which water is input. Agendas on gender, irrigation and water have clearly to go beyond water alone to the roots of the exclusion of women as a gender from resource rights and other production factors.

### GENDER AND POVERTY: AGRICULTURAL WAGE LABOUR

High income dependency upon wage work is a commonly used proxy for being poor. Agricultural wage employment is highly gendered. Women are often restricted to carrying out the lowest-paid tasks and may be excluded from construction and maintenance work. If they do equal work, they receive unequal payment. For example, in Sri Lanka the female labour was found to be paid around 10% less than the male labour. Agricultural wage labourers are extremely weakly organized in general, and certainly for women.

Policy changes to accommodate these inequities can have significant impact. For example, in Bangladesh, labour contracting societies (LCSs), embankment maintenance groups (EMGs), channel maintenance groups (CMGs) have been established in irrigation systems, providing employment and income-generating opportunities for the rural people, both men and women, and ensuring a fair wage and achieving high quality of maintenance work. At least 25% of the earthwork of any public water project/subproject/scheme is supposed to be reserved for the LCS. The majority of the members of both EMGs and CMGs are vulnerable women. In addition to earning from wage labour, women use the slopes of the canals and the embankments to harvest vegetables and thereby earn an extra income.

### GENDER, POVERTY AND RURAL WATER: MULTIPLE WATER USES

While there is still a long way to go with regard to gender and irrigation in dual and female farming systems and certainly in male farming systems, the recognition that there *are* gender issues in irrigation and that both women and men need incomes have an important implicit effect. In the past women's role as housewives was abused as an excuse for downplaying gender issues in productive spheres. However, as that is coming to an end, space is opening

up to acknowledge the fact that the separation between two different but both vital and strongly interacting aspects of livelihoods is artificial, certainly for women, but also for men, increasingly recognized as well. Moreover, explicitly taking up the poverty angle that the domestic water sector has pursued all along, the gender *and* poverty issues now encompass the aforementioned gender and irrigation issues, *plus* the recognition that the major obstacle poor households face to increase their productivity and well-being and escape poverty is the tremendously time-consuming domestic chore of accessing water. While it is true that the direct burdens fall disproportionately on women's shoulders, men's cash and labour contribution to the provision of domestic water to their households is perhaps the most under-researched gender issue (Van Koppen, 2001). In any case, the household as a whole would also benefit if women and girls and to some extent boys and men are liberated from these unpaid chores.

This new gender and poverty issue seamlessly fits the growing recognition within the water sector that the sectoral divides between domestic and productive water sectors are artificial and unfruitful, at least in poor rural communities where infrastructure development is limited and, at these lowest steps of the water ladder, the same water source is used to meet multiple water needs. Although irrigation schemes were often designed with the primary use of irrigation in mind, the multiple uses of irrigation schemes and the required adaptations in design have been recognized since the early 1980s (Yoder, 1981). More research was done in the late 1990s both in areas where irrigation schemes were by far the most important water source for any use, as in Pakistan (Jehangir *et al.*, 1998; Van der Hoek *et al.*, 1999) and Morocco (Boelee *et al.*, 2004), but also in other areas where it challenged the growing perception that irrigation water was of low value. Many values are added to "irrigation" water, as it is used for domestic uses, livestock, fodder, fish, and other income-generating activities (Bakker *et al.*, 1999). If irrigation schemes are better planned and designed for such multiple uses, in which domestic uses are also given priority, more benefits are derived from the same irrigation scheme, especially for women. For example, in the design of rehabilitation/further extension of the Walawe scheme in Sri Lanka, 51 new structures were built to facilitate such domestic uses of water, especially for women.

In the past couple of years, similar recognition occurred in the domestic water sector, recognizing that factual small-scale productive uses of so-called domestic water supplies around the household, often for informal activities such as homestead gardening, are not only happening at a large scale, but are also a major contribution to poverty alleviation and gender equity – as household-based economic activities tend to be more accessible to women. Moreover, if properly planned, multiple use design of domestic supplies has the potential to generate income and, hence, improve cost recovery (Moriarty *et al.*, 2004).<sup>4</sup>

Integrating domestic and productive water uses and women's and men's roles in both, starts at the household level, up to community and higher level, up to national and even transboundary levels. This form of pro-poor, gender-equitable bottom-up integrated water resources management overcomes a most persistent division within the water sector itself: that between the domestic and productive water sectors, with integrated water resources management (IWRM) typically excluding domestic uses. Starting with the poorest households at the lowest services levels, a multiple use water supply systems approach seeks to support the poor in climbing the multi-purpose water ladder, recognizing the priorities of domestic water uses. However, the conventional notion of

Table I. Climbing the multi-purpose water ladder – hypothetical example

| Service level           | Costs time/cash                                     | Volumes     | Needs met  | Priority     |
|-------------------------|---|-------------|--|--------------|
| No domestic access      | >1 km >30 min                                       | <5 lcd      | Cons/hyg too low   | Top priority |
| No MUS access           | <1 km <30 min                                       | <20 lcd     | Cons just ok/hyg too low   | Very high    |
| Basic MUS access        | <0.2 km <5 min, roofwater                           | 20–50 lcd   | Cons just ok/hyg too low/basic<br>livestock, fruit trees                               | High         |
| Intermediate MUS access | 1 tap on plot, roofwater,<br>runoff, household tank | 50–100 lcd  | Cons, laundry and hyg ok,<br>laundry/livestock, vegetables,<br>trees, small enterprise | Medium       |
| Optimal access          | More house taps,<br>large storage                   | 100–200 lcd | Domestic needs met/livestock,<br>vegetables, trees, small businesses                   | Low          |

Note: lcd = litres per capita per day; Cons = consultation; hyg = hygiene; MUS = multiple use system.

service levels as climbing the water ladder is confined to domestic uses only. In a multiple use water supply systems approach, productive uses are to be integrated. A hypothetical model is presented in Table I. Further field testing has to specify at what service level rural people already start using scarce water resources for productive activities in reality, and which levels can be recommended for policy making.

### CONCLUSIONS: RURAL WATER, GENDER, AND POVERTY ISSUES AND OPTIONS

After two decades, gender is widely recognized as a critical issue in irrigation and Integrated water resources management. Paradoxically, the success of this policy commitment is also its risk. Policy statements remain toothless as long as they remain abstract and generic, and as long as it is suggested that one blanket policy would fit all situations. The key variable is the gendered organization of farming, which should always be well understood first (Van Koppen, 2002). The same blanket gender policy would be unrealistic and bound to fail in male farming systems. In female farming systems, though, *not* implementing that same blanket gender policy would jeopardize scheme productivity.

For places in Africa and Asia where female and dual farming systems prevail, rural development alleviating unpaid domestic chores and fostering a pattern of agricultural production without stereotypical biases with regard to asset creation, resource property rights and decision-making over both the production and reproduction processes, needs to be implemented immediately and with force for the sake of agricultural growth. In male farming systems, though, domestic water provision through multiple use “irrigation” systems is the unambiguous key gender issue. However, a narrow focus on water will only support a minority of farm decision-makers. For the majority of women, irrigation and water agencies need to join hands with rural and gender organizations to address the full range of still highly skewed gender issues: access to land, technologies, credits, markets, skills, training, *and* water.

### NOTES

<sup>1</sup>This paper focuses on gender analysis in irrigated farming, as distinct from gender staffing issues in support agencies.

<sup>2</sup>The problem of defining “female-headed households” can be illustrated by the wide divergence in estimates. For example, the 1988 percentage of female-headed households in Latin America and the Caribbean is 17% according to the data of Jazairy *et al.* (1992). A more recent study (Inter-American Institute for Cooperation on Agriculture and Inter-American Development Bank, 1994) shows that in Central America, households headed by women account for between 29 and 48% of the total cases analysed. In the Andean region, the number of such households ranged between 29 and 55%. Types of female-headed household that often have been missed in the past, are the consumption and production units in polygamous households headed by the respective wives.

<sup>3</sup>The origins of this female farming system lie in the patterns of colonization, apartheid, and struggle for freedom – which, although through very different processes, also contributed to the fact that almost half of South Africa’s current ministers, including the ministers of water and agriculture, are women.

<sup>4</sup>An example of the new global dialogue on gender and poverty mainstreaming in merging domestic and productive water sectors is the Challenge Programme project on Multiple Use Supply Systems ([www.iwmi.cgiar.org/multipleuses](http://www.iwmi.cgiar.org/multipleuses)) This project conducts action research to develop and test guidelines for community-level implementation of Multiple Use Water Supply Systems and for upscaling of such systems at district, national and global levels. These guidelines seek to tap the synergies of integrated, affordable and labour-saving investments in water development for multiple uses to create more wealth, health and happiness, *also* among the poorest households.

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