INVESTMENT NOTE 10.3

POVERTY-GENDER ISSUES IN AGRICULTURAL WATER MANAGEMENT POLICY

Water policies and investments in the agricultural water sector involve complex trade-offs. Essential to understanding the choices that need to be made, is an analysis of the social and economic impacts of key issues on all water users, including historically-excluded groups such as women and poor people. Such issues include: economic evaluation of productive and non-productive water uses; intersectoral water allocation frameworks; water pricing; user participation in water user associations; and planning for multiple use of “irrigation” water. Recent national reform efforts to further water productivity and efficiency are additional factors.

Improved agricultural water management and development presents significant opportunities and challenges for economic growth and poverty reduction, particularly in those regions facing increased water scarcity. Recent water sector reforms emphasized water pricing and cost recovery; improved water efficiency; market-led growth (and development of water rights regimes as an aid towards this); and increasing devolution of decision-making in a context of Integrated Water Resource Management (IWRM). While such policy priorities linked with these reforms have much to recommend them, the reforms must be continuously assessed for their social-gender impacts on women and poor men, including tenant farmers.

A pro-poor approach to agricultural water management means adhering to the subsidiarity principle (that is, devolving water decision-making as close as possible to the end user), and approaching water project design in a participatory manner that allows for social analysis and identification of multiple stakeholders’ needs and interests. While the importance of including vulnerable and often-overlooked groups such as tenants and women farmers in Water User Association (WUA) membership and decision-making is increasingly understood (if not always included in project design) further analysis on gender-poverty issues in water sector policy is required.

This Note is an attempt in that direction. Areas of particular concern include: economic valuation of productive and non-productive water uses; intersectoral water allocation frameworks; establishment of water rights regimes; water pricing; user participation in water users associations; and planning for multiple use of “irrigation” water.

INVESTMENT AREA

Agricultural water policy at the national level spans such areas as: water law; water rights; water pricing; water allocation; user participation; water subsidy policy and asset and management transfer of infrastructure as in Irrigation Management Transfer (IMT). Underpinning recent reforms has been the increased emphasis on the economic valuation of the water resource and its uses but this has problems (see below). Gender analysis requires an assessment of the
assumptions, implications and impacts that specific strategic choices (for example, in intersectoral allocation); project design; and implementation approaches have on women and poor persons. Water use efficiency approaches must incorporate both social and environmental externalities (Perry 2005) but economic water models have had difficulty in assigning values to environmental and so-called “non-productive” (that is, non-crop) uses of water, so central to rural livelihoods. In practical terms too there are difficulties as, for example, in Pakistan where the policy effort to reduce field seepage losses at plot level had the unintended effect of reducing the “sweetwater” source that households use for drinking water.

Water pricing has proven to be economically complex and socially and politically sensitive in the agricultural sector. In addition, capturing environmental and social costs in economic water models are still underdeveloped and rarely consider the extractive and in situ values of the resource base itself. But, it is important to recognize the growth versus equity and sustainability tradeoffs inherent in pricing regimes and to discuss the feasibility of a graduated and/or targeted approach. Such an approach may include the use of block tariffs, and take into consideration beneficiaries’ willingness to pay different types of water charges based on water use. However, for example, not all canal irrigation water uses such as - washing, laundry, bathing and even drinking, can easily be given an economic cost. In any economic calculations regarding water efficiency, such issues need to be treated similarly to the way that environmental uses have been valued in more recent water modeling.

Box 10.3.1 GENDER AND SUBSIDIARITY IN THE WATER SECTOR: THE DUBLIN PRINCIPLES

The 1992 Dublin Principles on Water and Sustainable Development underpin current approaches to Integrated Water Resource Management. The Principles recognize fresh water as a finite resource, with economic value among competing uses, and requiring subsidiarity, that is, management devolved to the end user as far as possible. These principles provide support for key issues of user participation and planning for multiple-use of water for different sectors, both essential elements of a gender-poverty approach to Agricultural Water Management.

Specifically, Dublin Principle 3 states that “Women play a central role in the provision, management and safeguarding of water... [a role] seldom reflected in institutional arrangements for the development and management of water resources” (COHRE 2004). This Principle goes on to say that women’s specific needs in water management must be identified and their effective representation and participation in sector decision-making and implementation strengthened.

Source: COHRE 2004

Water policy requires water laws and regulations to implement policy. Water allocation, taking into account geographical distribution and generational concerns, remains a primary issue at national, basin, distributary and field-plot levels. For example, in the case of groundwater resources in particular, common property and inter-generational use
cannot be managed through market mechanisms only but require regulation (Perry 2005).

At the basin level, allocation decisions relate in part to land use (and subsequent population densities). With the increasing competition for water across sectors, and agriculture as currently the largest water user, intersectoral allocation decisions need to meet growing urban domestic and industry water requirements. In some areas, the irrigation bias in sectoral allocation has led to insufficient supply for drinking water. Using irrigation water for consumption purposes raises water quality and health issues that disproportionately affect women due to their gendered responsibilities for family health.

While sufficient water for domestic uses is a policy priority (and in rural areas, domestic use increasingly is from planned and unplanned use of irrigation water), the poverty impacts of water for productive use needs to be recognized. In particular, and especially for women, direct and indirect benefits exist: direct crop-based income (though questions remain as to who controls this income), and enhanced irrigation-driven agricultural employment which reduces rural out-migration. It is possible to quantify the indirect multiplier effects on women’s contribution to economies at different scales through, for example, gender-disaggregated Input-Output or Social Accounting Matrices, or CGE models.

Water for agriculture is important for marketed cash crops and for those low-value staple crops required for food security. This food security issue is sometimes lost in national strategy and project development discussions which highlight commercial and export-oriented agriculture that is often a climatically-inappropriate use of water. Such grain and horticulture cultivation in desert zones is often subsidized by governments.

**POTENTIAL BENEFITS**

In focusing on high-value agriculture with its increased “value per drop”, essential food security goals may be been neglected in agricultural water policy, including support for rainfed agriculture and water conservation measures. For rainfed areas, watershed management programs and dryland area development are important as extension

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1 World Bank irrigation projects in both Northeast Brazil and in northern India were found to improve labor market outcomes for rural women, leading to “high quality, permanent” jobs in Brazil, and significant wage smoothing (that is., higher daily labor rates) in India (World Bank 2003 in Kuriakose et al. 2005: 4).

2 See description by Ramesh Bhatia in AWM Sourcebook Innovation Profile 9.3 (see also work by Anushree Sinha at National Council for Applied Economic Research, New Delhi). Such disaggregation can yield meaningful results given that it has been observed in Bank projects that: irrigation can lead to increase in demand for female agricultural wage labor (as in the Uttar Pradesh Sodic Lands project); availability of water for consumption uses can allow for increases in girl’s educational participation; women’s time-use for tasks besides water collection; and decreases in negative health impacts; increased irrigation water availability at the right time and of the correct duration for women’s plots and crops increases yields, including for the estimated 30% of smallholders in parts of sub-Saharan Africa who are female heads of household, with concomitant poverty reduction.
workers, both female and male, can use micro-level land and water management interventions to target women and poor men. Complementary investments in soil and pest management, and post-harvest technologies including food processing, especially when these investments are tied to marketing and agricultural producer support programs targeting women, can yield sustainable outcomes and reduce household vulnerability. Flood risk management efforts and drought preparedness through community-driven development approaches are other investment areas that benefit the poor.

To attain poverty reduction goals, policies must be assessed on whether these improve the livelihoods of most rural dwellers, rather than those in a few select industries. South Africa, in particular, has had some success in designing its water policy with an explicit pro-poor focus while supporting market development (see Box 10.1.2). At the local level, allocation decisions may affect distributary/watercourse use, plot-level application and multiple users, especially as non-agricultural users are frequently overlooked.

Legal and customary water rights underpin decisions on access to water and water allocation. These formal and informal rights include land rights, social relations and customs, control of resources (including labor) and access to appropriate regulatory institutions (UN 2005). Given the various components of water rights regimes and the current reform context, these are a particularly important area for gender analysis. Such analysis needs to recognize that legal pluralism exists, with multiple and overlapping systems of rights and entitlements in formal and informal systems (see Note 10.2 for discussion of indigenous systems).

Water rights are dynamic and context specific; and often linked to other rights or encompass multiple water sources. Hence water rights are usually not clear, specific or singular but carry multiple claims often with both temporal and spatial dimensions (Roth et al, 2005). Due to historic gender inequities, formal rights have been in the past allocated to heads of households. In land reform programs and irrigation projects these have been invariably defined as male. That is, customary access of women to land and water resources can be reduced when statutory regimes are developed, unless gender-specific tenure and titling issues are addressed explicitly (see Note 10.2).

**IMPLEMENTATION**

In the past, when water and land rights reforms have been used to further the commercialization of agriculture and/or non-farm service development (for example, tourism), women and poor men’s interests have been systematically overlooked. Such reforms have often both failed to recognize rights associated with informal or indirect use, and common property arrangements (such as forest and pasture access), while simultaneously over-allocating water supply to large enterprises benefiting only a few persons. Such high-value uses as recreational use and export-based horticulture generally do not serve the interests of the rural poor, due to high investment barriers.
It is important in the development of new water rights regimes that women, male tenants, ethnic minorities and non-agricultural occupation groups (for example, inland fishers) are included. Project designers may consider selective use of water entitlements at the group and at individual levels, as collective rights may be ascribed to newly-formed user associations or watercourse level sub-groups, or are common property rights. The Bank’s 2003 Water Resources Sector Strategy (WRSS) has also referred to the need to protect women’s informal customary rights to water, particularly where new water rights are being codified legally.

Box 10.3.2 FACILITATING PARTICIPATION IN WATER POLICY: THE CASE OF SOUTH AFRICA

Since the advent of majority rule in 1994, national policy in South Africa has worked towards addressing historical inequities and achieving growth and employment gains for all citizens, regardless of race. The South African Constitution (1996, amended 2003) specifically refers to the state’s right to “undertake land, water and related reform to redress the results of past racial and gender discrimination” (Salman and Bradlow 2006: 100). Environmental uses of water are protected as is the basic human right to drinking water and sanitation services (ibid).

To further these Constitutional rights and allocation principles in the Constitution, parallel legislation in the form of the Water Services Act (RSA 1997) and the National Water Act (Act 37 of 1998) highlights the role of the citizenry in national water management (Schreiner et al 2004). Specifically, Act 37 requires consultation with stakeholders on such issues as water allocation, local and national water management and development of water institutions (ibid). It also has instituted basin-level catchment management agencies (CMAs) to represent all water stakeholders. This inclusive design stands in contrast to previous eras when white male farmers and industry and mine interests alone were represented, and women and black smallholders were excluded (ibid). At the local level, cooperatively-run Water Users Associations (WUAs) have been set up to ensure equitable distribution and sustainable management at local level.

To further facilitate active and effective participation by all users, the Department of Water Affairs and Forestry undertook an outreach and capacity-building program in different catchment areas, offering training on development of leadership, facilitation and conflict resolution skills. Users represented included communities; local government; the tribal authority; resource-poor black farmers; and the original irrigation board members (that is, white commercial farmers). The WUAs now address water management from a multi-sectoral perspective.

Source: Schreiner, Mohapi and van Koppen (2004); Salman and Bradlow (2006)

For equitable water use planning, non-agricultural users’ water interests should also be represented in the planning process (if not in a farmers’ organization then in a users’ organization to allow for local-level allocation of “agricultural water” in rural areas. Multiple users and uses exist at the local level: not all users and uses will have cooperative interests all the time. Rather, local claims on water must be understood in their particular contexts, with specific historical knowledge (see Bakker et al 1999). Interests of different users will overlap and diverge at various times
based on multiple axes of difference. In the case of gender, interests are at the same time shaped by such socioeconomic characteristics as occupation (for example, fisherfolk; cultivator); tenancy status; and caste or tribe. “Women” are not a fixed category with needs that always and everywhere differ from those of men. Rather, women form a heterogeneous group that shares certain common interests due to processes of structural inequality in society. For example, male and female members of tenant or smallholder classes share interests in securing irrigation water for their on-farm production. Once water for area development is accessed, plot- or crop-level allocation requirements may vary according to the prevailing gender farming system (for example, separate or joint plots for men and women). The key element in gender-sensitive water sector planning is to ensure that women are not relegated to “domestic use” components only, nor just to processing, labor, training or micro-credit project components. Rather, project design and preparation should include an assessment of the extent to which in the local area, women form part of the mainstream client base (for example, farmers), and ensure that components and implementation outreach mechanisms are designed accordingly.

LESSONS LEARNED

Irrigation Management Transfer (IMT) and other forms of participatory irrigation management raise increasingly well-recognized challenges to ensure the participation of women and poor men in project design planning and water users’ associations. Explicit attention to women’s participation as leaders and members (see Note 10.2) is required. However, while participation is increasingly pursued as a goal, stereotypical definitions of users of productive and domestic water use have, in the past, led to an over-emphasis on women in the water and sanitation sector only, with men in the irrigation sector and associations. This bias in client definition robs agricultural water management planning of essential inputs to project decision-making as it does not take into account the needs of all users. Further, it leads to single-sector planning that fails to recognize non-crop uses of ‘irrigation’ water essential to livelihood security. Such multiple-use activities include livestock watering; kitchen gardening; beer brewing, production and processing of small foodstuffs, flower production, brick molding and other small industries. Such consumption, own-use, or micro-/non-market production is typically not planned for, nor valued, when returns from Agricultural Water Management (AWM) investments are calculated.

It is crucial that such minor uses are planned for, but the gender components of AWM projects should not rely only on residual categories of rainfed agriculture, small-scale technology, and subsistence and kitchen garden production as their sole gender mainstreaming effort. Some women (though not all) would be well-served by measures supporting their increased access to markets including producer support services and more equitable

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3 In the case of Mozambique for example, a recent World Bank review found that only 12% of the country’s small and medium farms currently use irrigation water (World Bank 2004).
water allocation for crop irrigation. In the design process, it is important not to pre-judge users’ needs and interests on the basis of gender. In the past, gender-based assumptions about “who is the farmer” have meant that women farmers had poor access to agricultural extension services and credit, while simultaneously suffering in inequitable allocation and distribution of water due in part to biases in land rights regimes. The effectiveness of agricultural investment has been constrained also in the past by gender-biased assumptions that failed to recognize women as farmers or as household heads. Such assumptions have direct agricultural development implications, particularly in areas where women are the agricultural decision-makers for particular crops or sectors as in sub-Saharan Africa (see Note 10.2).

Finally, water uses vary in requirements of timing, quantity, and duration and with regard to quality. Water for drinking is the preeminent example but both chemical and biological quality matter in other sectors. Highly saline water limits crop production, and it is also not potable. Contaminated water can also have direct market implications where, for example, agro-processing is present. The 1996 hepatitis outbreak in the Mexican strawberry export industry exemplifies this point. Besides the health effects on producers and consumers, the outbreak had serious economic effects, destroying market potential and livelihoods along the commodity chain, with particularly adverse impacts on women, given their over-representation in the export horticulture processing labor force.

**RECOMMENDATIONS FOR PRACTITIONERS**

- In open basins (where resources are still being developed), water infrastructure development and rehabilitation projects should be designed to incorporate the needs of women and poor men, and support clear and equitable water rights, the establishment of inclusive institutions, and the use of appropriate technology (World Water Vision 2000).

- In closing and closed basins, where there is strong inter-sectoral competition for water use, establish a water reserve for poor people’s uses, with water savings imposed on non-poor water users (ibid).

- Recognize women as farmers and agricultural decision makers, and identify and plan for all uses of water: domestic, productive, and environmental.

- Improve accessibility to agricultural outreach services by using approaches that rely less on literacy and land title and, are open to gender-sensitive collective approaches and/or forms of group collateral.

- Assess the gender and poverty impacts of agricultural water allocation to domestic and industrial uses in terms of health and income (for example, land-poor households may gain from sale of water especially tradable water rights or groundwater volumes themselves; non-farm development including agro-processing, before assuming
agricultural production is the first best choice in rural areas

- Facilitate women’s and poor men’s participation in water policy planning committees at the basin level, and WUAs at the distributary level

- Ensure women’s and tenants’ water rights are protected when new water assets (such as canals, water pumps, village ponds) are developed, with complementary organizational development

- Assess equity impacts of water pricing regimes, and consider use of block tariffs and other pro-poor instruments

- Staff government agencies to ensure sufficient numbers of female agricultural extension agents with resources

- Include gender-poverty concerns relating to goals and suggested components in both the Country Water Resources Assistance Strategies (CWRAS – or “Water CAS”) and in the Strategy process.

REFERENCES CITED


FURTHER READING

*Special Edition Agriculture and Human Values, 15(4) 1998*


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