

INVESTMENT NOTE 10.4

GENDER-SENSITIVE PLANNING, MONITORING AND EVALUATION IN AGRICULTURAL WATER MANAGEMENT

Agricultural water management projects that take an inclusive, participatory gender-sensitive approach at all levels of the project cycle help increase project effectiveness and improve account of livelihood concerns of women and the rural poor. Participatory planning methods; creation of gender-specific indicators; continuous monitoring; and beneficiary-led impact assessment are key features of this approach.

INVESTMENT AREA

Small-scale irrigation schemes, watershed management and drainage projects are very effective in poverty reduction when they reach out to the real target group. Gender-sensitive design improves project sustainability and outcomes by facilitating mechanisms for enhanced beneficiary participation. This increases the chance of success and sustainability of projects.

Project recognition of diverse water needs and preferences of women and poor men; small and marginal landowners; the near-landless; and tenants and those without clear title is a necessary first step to incorporating these into the planning, design and implementation process. This recognition shifts the focus from the concept of the unitary household with a male head, to a disaggregated look within the household at the concerns of other users of water and natural resources, notably women.

Agriculture water management projects should address gender concerns right from the beginning of the project cycle: from planning, further on to design, implementation, and monitoring and evaluation. Gender-sensitive approaches whether in the form of new interventions or rehabilitation projects, should ask such key questions as: Who are the target groups? Whose interests are being promoted or goals pursued, and who will win or lose in the process? How will social and economic diversity among the target population be incorporated within approaches to project planning and design? Keeping the above in mind, how can the project develop strategies to promote and achieve gender justice and equity? Using gender-sensitive monitoring and evaluation indicators, the project can assess the extent to which it has made an impact on the overall well-being of the rural poor and women specifically, as well as assess needed modifications to project design. How can the project develop effective monitoring and evaluation indicators to ensure that these issues are addressed?

Gender analysis as an integral part of the process

Gender analysis should be undertaken right from the start of project design. It is important to assess how projects and project components will impact men and women (see Box 10.4.1). Land reclamation as a result of drainage programs; increase in cropping intensity through irrigation projects can impact men and women differently. Studies have shown that sealing off common land or forest land to promote regeneration in watershed management projects sometimes increases the workload of women as more time is spent on collecting firewood and fodder from elsewhere (Wilde and Vainio-Mattila, 1995; Kerr et al. 2000).

BOX. 10.4.1 GENDER, LAND TENURE, AND AGRICULTURAL INTENSIFICATION IN THE GAMBIA

Insufficient knowledge of customary land tenure and household production system led to gender conflict in the Jahaly Pachar project in the Gambia. Project objectives included achieving an increase in cropping intensity. Two types of land tenure existed: i). one where uncultivated land is claimed and used in common; ii). the other where land claims are established individually by clearing uncultivated land controlled by women. The first system required five months of obligated labor input from women. The project's technical component targeted men for rice cultivation. With the use of double cropping, labor was required for two seasons. Rice farming as a cash crop resulted in men having more control over the marketable surplus. Women did not get these benefits and so were not willing to contribute labor for both seasons. Women responded in different ways: i). they provided labor for one cropping season as per the tenure system and worked separately on unimproved land to generate a small income for themselves. When this alternate was not available, they either agreed to contribute labor in the dry season, but demanded a small plot under their control in the rainy season; or worked year-round on irrigated schemes with the demand of remuneration in rice for their labor during one cropping season.

Source: Carney, 1998 in Zwarteveen, 2006; Fyhri, 1998.

Projects that address gender concerns right from the start of the project cycle help in identifying and incorporating meaningful design, monitoring and evaluation strategies and procedures (Box 10.4.2). The efficiency of the project is increased (10.4.3). A participatory approach helps bring the real needs and concerns of different target groups to the table as part of project design discussions. This helps improve stakeholder ownership of the project.

Participatory gender analysis can be done with a multidisciplinary team, in dialogue with different stakeholders to understand the prevailing agrarian structure in the area and what form gender takes in the local production system. This includes analysis of

the gender division of labor as well as the structural conditions for production in agriculture, whether for own-use or sale. Data should be collected on land tenure (land ownership; tenancy; labor relations; size of land holding). Further information on the institutional framework of agriculture; credit and market structure; existence of cooperatives; extension services and access to these may also be required. Information should be disaggregated by gender. Analysis of the link between poverty and gender can then be undertaken.

Box 10.4.2 PARTICIPATION AND USER GROUP CRITERIA IN NEPAL IRRIGATION PROJECT

Bhairahawa Lumbini Groundwater Irrigation Project-III adopted a demand based participatory approach to DTW development and management.

Initially, farmers in Durganagar village were sceptical about installing a deep tubewell (DTW). However, once project staff convinced them that the new design would help lower their DTW costs; and that the discharge from the pipes could be used for vegetable cultivation; and that their ideas would be included in project planning and design, both men and women participated actively in the project. They planned the system layout so as to protect the existing drainage system, and use the spring water and groundwater conjunctively. With improved water delivery, vegetable cultivation became a lucrative business for women and small landowners who increased the amount of land they took under sharecropping.

The DTW is used throughout the year and fetches substantial returns for operation. Further, both men and women showed interest in leadership positions in the second water users' group (WUG) formed in 2004. This WUG has representation from all castes and ethnicities and also includes a woman. Notably, women's participation in the WUG is still constrained however by WUG membership criteria which stipulate that members must own land. This has prevented larger numbers of women from joining and becoming WUG leaders even though they were interested in doing so.

Source: Gautam 2006

Box 10.4.3 CREATING SPACE TO INVOLVE WOMEN IN IRRIGATION DECISION MAKING IN NEPAL

The creation of a Women Facilitator Group (WFG) with formal linkages to the water users association (WUA) in Panchakanya Irrigation System improved women's participation in WUA decision making and strategic planning. After one year of project implementation, the number of women in WUA rose from 20 to 60%. There were increases in collection of irrigation service fee. Further, water supply increased with the construction of an additional canal in a process that featured active participation and management by women. There was a decrease in water theft and canal cutting as both women and men were more active in taking actions against these acts. A professional association of women in land use sector facilitated the process and helped create linkages for women farmers with other support services and government institutions. Mobilizing women professionals from the start helped smooth inclusive practices in the project.

Sources: Interaction, 2004:182-193; Gautam S.R and Rajeshwori Basnet (forthcoming).

Care has to be taken that relevant queries on gender relations, differences and inequities in water have been addressed so that the information needed for mainstreaming gender into the technical and institutional design can be linked, analyzed and addressed.

There is a need to identify and understand gendered differences in water needs, including for multiple uses. Water demands for agriculture depend on crop choices of women and men (sometimes in concert, sometimes undertaken separately). Such information helps in calculating irrigation water requirements including timing, frequency, volume, and quality of water required.

The information also helps identify expected changes in men's and women's workloads as a result of project-induced changes in cropping intensity. Knowledge of domestic

and livestock water uses, water for small-scale enterprises, and water quality preferences as well as preferences for technology and source of water (where options of combining water from groundwater or surface water exist) helps incorporate these needs into the design. Factors relating to distance from water sources for irrigation and domestic purposes; problems caused by water logging and salinity; local methods of water purifications; wastewater reuse practices are other areas on which information should be collected depending on the focus of the project. It is important to collect information on pre-existing arrangements; knowledge and perceptions on watershed management; and local methods of drainage management. Information on traditional access and use rights in natural resources management help identify what implications these have on each other, and with the rights created by the project. A gender perspective here remains crucial in order to understand impacts of interventions on different users. Legal provisions for women to participate in water user associations (WUAs); as well as in watershed and drainage management are important. Identification of existing traditional women's groups for natural resources management or women's associations initiated by different development and community activities help in planning and coordinating intervention strategies to avoid duplication of efforts.

Participatory design involving both women and men

The technical design process should include the participation of different stakeholders (Box 10.4.2.). Participatory processes facilitate incorporating such issues as water rights and forest use rights for both women and men irrespective of formal land titling arrangements

Making women visible during implementation

Small-scale agricultural water management projects often involve farmers for construction works (Box 10.4.2), e.g., planting tree saplings and other vegetative measures of erosion control. The project should ensure that women and men are paid equally for the same activity. Training programs in agricultural extension, watershed management practices like fodder tree and plants cultivation, maintenance of drop-structures; training on water allocation and distribution methods, operation and maintenance should be targeted to both men and women.

Using the information gathered in the identification and preparation phases, project design should ensure that gender is well integrated into the goals and objectives of the project, with clear targets and indicators set for outcomes. It is also necessary to assess and develop the capacity of project staff to address monitoring and evaluation, particularly from gender perspective.

MONITORING AND EVALUATION

Mainstreaming gender-sensitive M&E system in agricultural water management projects helps to assess the extent to which the project has addressed different water needs of men and women and what impact the project has made on their well being. It facilitates the monitoring of progress, as well as identification of main constraints in implementation. The process is participatory and continuous. It makes course-correction possible, including component design modification or even introduction of new activities at different stages of implementation. Here, different stakeholders can help in identifying constraints and

suggesting innovative ideas for redesign. It is crucial that institutional capacity is built up to integrate gender concerns into project planning, design, implementation, monitoring and evaluation.

In order to mainstream an effective gender-sensitive monitoring and evaluation system in AWM projects, certain activities have to be done at different points of the project cycle. The project goals and objectives should allow for social diversity amongst the intended beneficiaries of the project, recognize women as important 'water stakeholders' and 'actors' and acknowledge that the impact of the project could be different for different people. One of the important first steps is deciding on the information or data needed. The data have to be regularly analyzed so as to make adjustments for the next course of action.

Identification and preparation stage has to ensure that the baseline survey is gender-sensitive. An initial gender study or analysis could be performed so as to ensure whether relevant questions that help look at gender differences in impact of the project, needs, preferences and priorities and knowledge with respect to water management are covered.

A gender-sensitive social assessment, should try to cover the social, cultural and economic aspects. The inferences drawn from the social, environment assessment and gender analysis have a bearing on the technical and institutional design of AWM projects. The information gathered has to be compiled in such a way that they relate to each other and can be analyzed. It is important that the teams involved for social and environment assessment be involved right from the project identification and preparation stage.

All planned activities have to be in line with the gender-sensitive goals and objectives of the project. This is checked at the design and appraisal stage. Here, it has to be ascertained that the plan for implementation takes into consideration the water needs and preferences of men and women; whether all the stakeholders have been consulted in this process. The adoption of the results-based M&E framework emphasizes on monitoring project outcomes. Outcome and outcome indicators have to be defined at two levels, namely the Project Development Objective (PDO) level and the component level. However, for practical purposes, the development of input and output indicators associated with the logical framework could be developed. Indicators are defined in consultation with the stakeholders. Women should be consulted in the process. For example, in order to look at extent of participation in project activities, the output indicators would look at number and frequency of women and men trained, consulted during project design and implementation phase (Box 10.4.4). The outcome indicators would ensure that women were employed for different project activities, and that women's particular needs were taken into consideration during design and layout of structures. It is also determined how data would be collected, analyzed, the units to be used and the methods.

Evaluation of whether women's needs with respect to design have been met would need an assessment of the physical structures. Qualitative information can be dealt with as a case report in order not to lose the valuable information within the larger database. Evaluation is undertaken based in part on the monitoring data collected in order to assess the impact of the project on the target group. Beneficiaries of the project should be involved in the evaluation in order to

determine beneficiaries' assessment of outcomes on the ground. Gender impact of the project implemented can be compared with the information collected prior to intervention, or in an area that did not receive the same intervention (in order to facilitate a "with/without" project impact analysis).

BOX. 10.4.4 SAMPLE INDICATORS

Sample Output Indicators

Design/indicators

- Percentage of women members and leaders in different user groups
- Percentage of female or men from different socio-economic class/ethnic group/caste in decision making roles
- Change in irrigation service fee collected if it is a rehabilitation program (in comparison to before rehabilitation); level of fee collected in new program
- Savings and credit groups established with participation by men and women of different socioeconomic groups

Sample Outcome indicators

- Increase in water availability for different user groups due to better groundwater recharge and surface flow augmentation (watershed management) or better water delivery (small scale irrigation)
- More land is brought under cultivation and under women's title through drainage and reclamation projects:
 - Change in cropping intensity and impacts on income, food availability, workload changes and employment between men and women
 - Changes in women's workload as a result of improved fodder and fuel availability.
 - Reduction in health-related problems caused by waterlogging.
 - Changes in extent of out-migration of men and women.

Data Collection Methods for Project Appraisal, Design, Monitoring and Evaluation

Data collected should include both quantitative and qualitative information. It is important to incorporate qualitative methods as not all relevant data can be quantified

(e.g., women's perceptions of changes brought about through project intervention). Care should be taken to ensure sufficient detail about gender and other socio-economic data. Data should be triangulated using multiple sources of information. Different methods of data collection include in-depth interviews following unstructured, open-ended and non-standardized methods. Case studies; structured and unstructured questionnaire; focus-group discussions among different stakeholders; participatory rural appraisal techniques; irrigation system walkthroughs for women and men (in case of rehabilitation works); transect walks across the watershed; mapping and use of models of the watershed to explain proposed location of different structures for erosion control, check dams for water harvesting; drainage structure layout can provide effective feedback from women and men for the design process. Both male and female beneficiaries should be included in identifying monitoring indicators.

POLICY LEVEL

Projects do not exist in isolation but are part of a national and sub-national policy context. In conducting gender risk assessments for projects, it is helpful to ask such questions as:

National level

- Does client country's policy and institutional framework promote gender equity, especially in development activities?
- Are quotas set for women's participation in water user groups?
- If user group membership criteria are set in national water policy, do these require users to hold land title?
- How do land reform efforts underway help or hinder gender-equitable

approaches to irrigation management transfer?

Sub-national level

- Develop guidelines on planning gender-sensitive approaches for agricultural water management projects. Decide on what information is needed, the type of analysis required, development of gender-sensitive indicators and how it will be used; as well as the resources needed for setting up the monitoring and evaluation system.

RECOMMENDATIONS FOR PRACTITIONERS

Project Identification and Preparation

- Assess institutional capacity for integrating gender concerns into project planning, design, implementation, monitoring and evaluation.
- Provide interdisciplinary training on gender and water for all professional staff, so as to instill the concept that gender is a core concern and not an 'add-on' in AWM projects. Capacity building training for integrating gender concerns as well as monitoring and evaluation. Hire a gender specialist with expertise on natural resources management to facilitate the process of incorporating gender. Formal and informal interaction between the technical staff, sociologists and gender specialist is important in developing a gender-sensitive technical and institutional design.
- Recruit female professional staff as well as 'social mobilizers' to reach out to women in cultures where there are restrictions on male staff interacting with women. Provide training to these staff.
- Care has to be taken that the data/information collected from social and environment assessment as well as gender analysis relate to each other and can be analyzed to draw inferences for

course of action during the design and implementation phases.

Project Design

- This is an important stage, where the gender differences that have been identified, are discussed and questioned. Efforts are made to redress these inequities and inbuilt into project activities.
- Involve men and women in technical design process so as to verify once again, whether the relevant queries on gender relations, differences and inequities in water have been addressed and how they can be integrate into the design. Crucial questions like customary land tenure and household production system, preferences and reasons for crops, location of structures etc. have to be clearly understood. The technical group has to be well aware of the gender issues.
- Consider women-only groups or mixed groups depending on social norms, and whether the area is predominantly a male farming system or in an area where women also have decision-making roles and/or where there is a high percentage of female-headed households e.g., due to out-migration, conflict or illness.
- Involve stakeholders in defining monitoring indicators.
- Data management, frequency of data collection for monitoring progress and responsibility to do so have to be arranged.

Project Implementation

- Provide gender awareness training to the target group and specific training for women farmers as part of empowerment process.

- Involve both men and women in planning and layout of physical structures and other activities being implemented so as to get in their knowledge and suggestions well integrated into the process.
- Facilitate women's link to other support structures, such as access to credit, market and other inputs.
- Work with other existing women's organizations, NGOs, networks and cooperatives, particularly those working on NRM and agriculture, to share ideas.
- Ensure that gender-sensitive and sex-disaggregated data are being collected and that they are fed back on a timely basis so as to make necessary course correction.

Project Evaluation

- Involve women and men in evaluating the benefits from the project; all stakeholders should understand the benefits of their participation.

SUGGESTED REFERENCES

Video: Irrigation in the Andean Community: A Social Construction. Rutgerd Boelens and Frédéric Apollín. NEDA, PEIRAV, SNV, CICDA, CAMAREN and IWMI.

Effective gender mainstreaming in water management for sustainable livelihoods: from guidelines to practice (draft version). December 2006. BothENDS, Working Paper Series. The Netherlands www.bothends.org

Irrigation Sector Guide: Socio-Economic and Gender Analysis Programme (SEAGA). FAO. 2001

Kuriakose, Anne. T., Indira Ahluwalia, Smita Malpani, Kristine Hansen, Eija Pehu and Arunima Dhar. 2004. Gender Mainstreaming in Water Resources Management. ARD Internal Paper, World Bank.

Van Koppen, Barbara. 2002. Gender Performance Indicator for Irrigation: Concepts, Tools, and Applications. Research Report 59. Colombo, Sri Lanka: International Water Management Institute (IWMI).

Punkari, Mikko., Marlene Fuentes, Pamela White, Riika Rajalahti, Eija Pehu. 2007. Social and Environmental Sustainability of Agriculture and Rural Development Investments: A Monitoring and Evaluation Toolkit. ARD Discussion Paper 31. World Bank.

WORLD BANK PROJECT DISCUSSED
Nepal. "Bhairahawa Lumbini Groundwater Irrigation Project." Closed. Project ID: P010348. Approved: 1990; Project ID: P010179. Closed 1983. Project ID: 010098. Closed 1976.

REFERENCES

Ahmed, S. 2005. (ed.). *Flowing Upstream: Empowering women through water management initiatives in India*. Centre for Environment and Development. Foundations Books Pvt. Ltd. India.

Fyhri, Torgeir, 1998. *The Complexity of Modernising the Agricultural Sector in Africa*: [http://www.afrol.com/library/Fyhri_1998/fyhri\(98\)_04.htm](http://www.afrol.com/library/Fyhri_1998/fyhri(98)_04.htm)

Rimal Gautam, S. and Rajeshwori Basnet. 2007. *Efforts of a Women's Professional Association in Building a Gender*

Responsive Irrigation Water Users' Association in Nepal (forthcoming.)

Rimal Gautam, S. 2006. *Incorporating Groundwater Irrigation: Technology Dynamics and Conjunctive Water Management in Nepal Terai*. Orient Longman Publishers, Hyderabad.

InterAction-CAW and IIRR. 2004. *Gender Mainstreaming in Action: Successful Innovations from Asia and the Pacific*. Asian Development Bank-Nepal. pp: 182-193.

Kerr, John., Ganesh Pangare, Vasudha Lokur Pangare, and P.J. George. 2000. *An evaluation of dryland watershed development projects in India*. EPTD Discussion Paper No. 68. IFPRI, Washington, D.C.

Wilde, V.L. & Vainio-Mattila, A., 1995. *Gender analysis and Forestry*. International Training Package. FAO, Forest, Trees and People Program.

Zwarteveen, Margreet Z. 2006. *Wedlock or deadlock? Feminists attempts to engage irrigation engineers*. PhD thesis. Wageningen. Wageningen Agricultural University, Netherlands.

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