

28 Integrating Gender Considerations in Rice Research for Development in Africa

Afiavi Agboh-Noameshie,^{1*} Abdoulaye Kabore¹
and Michael Misiko²

¹*Africa Rice Center (AfricaRice), Cotonou, Benin;*

²*International Maize and Wheat Improvement Center (CIMMYT), Addis Ababa, Ethiopia*

Introduction

Women's participation in rice production, postharvest and trading operations is well recognized in Africa (Dey, 1984; Nyanteng, 1985; Akande *et al.*, 2007; WARDA *et al.*, 2008; Bunch, 2011). In West Africa, for example, labour supplied by women for rice cultivation varies from 3% for floating rice in Mali, to 80–100% in mangrove-swamp rice in The Gambia and Liberia, where women participate in most of the activities and undertake postharvest processing of the crop (Huvio, 1998). Also a clear gender division of labour exists among crops. In The Gambia, swampland farming is solely women's duty; men cultivate cash crops and their fields are usually larger. In Mali, rice was traditionally grown only by women near rivers and wetlands (Synnevag, 1997, cited by FAO, 2004b). In many African countries, women are responsible for producing subsistence food crops for household consumption on their own plots or in communal household fields. In Côte d'Ivoire, husband and wife farm separate plots and there is some specialization by gender in the crops. Rice is considered a man's crop in some communities, and a woman's

crop in others, while in many places, the gender pattern for rice cultivation is complex.

In spite of the active involvement of both men and women in rice farming, processing and marketing, the overall research-for-development agenda has not always fully appreciated or considered the gender perspective (Poats, 1991). Consequently, the technologies and knowledge generated through rice research may not have reached the women end-users. A gender perspective needs to be integrated into agriculture – specifically in rice research for development – as a strategic pathway towards sustainable and effective rice development in Africa.

Gender Actors and Levels in Rice Development

'Gender' is a term used to explain how society constructs the differences between women and men, whereas 'sex' identifies the biological differences between women and men. Therefore, looking at gender does not focus primarily on women or men, but rather on the relationships between their different roles, responsibilities,

* Corresponding author: a.agboh-noameshie@cgiar.org

opportunities and needs. In sub-Saharan Africa, women, men and youth are key players in rice production, processing and trading; in this chapter, we refer to them as 'gender actors'.

Gendered roles in rice farming in sub-Saharan Africa

In African rice-farming communities, the gender division of activities has been well documented. This division of tasks can be very complex and unbalanced at the expense of women and youth who become the main labour providers. The division of tasks also depends on the rice agroecosystem. In Sierra Leone, women are primarily in charge of planting, weeding and harvesting activities, while men carry out land preparation at the beginning of the cropping season (Kroma, 2002). Similar findings are reported by Fonjong and Mbah (2007) from the rural areas of Ndop (Cameroon), with the difference that some activities such as tilling, transplanting and harvesting were performed by both men and women (Fig. 28.1).

In Yangambi (Democratic Republic of Congo, DRC), women are involved in rice crop establishment and weeding activities along with men (Fig. 28.2); however, some tasks (such as birds scaring) are exclusively carried out by women assisted by children (Kabore and Misiko, 2010). In some farming communities, rice farming is considered as a strictly female activity (e.g. southern Senegal; World Bank,

2008). Generally, rice postharvest activities (threshing, pounding/milling, parboiling, cooking, trading, etc.) are mostly performed by the womenfolk. It has been argued that when some women's operations are mechanized (to save time, reduce the energy burdens or improve the process), they tend to be taken over by males (Stamp, 1990). However, adoption of the 'ASI' thresher-cleaner (see Rickman *et al.*, Chapter 27, this volume) had no adverse effect on the profits of 86% of the sampled women (AfricaRice, 2009).

Gendered access to productive resources for rice farming

Sustainable rice development relies on many factors. Farmers need access to key productive resources such as farmland, labour, agricultural inputs (e.g. quality seed and fertilizer), capital, and complementary rice productivity-enhancing technologies (knowledge, equipment, etc.). Men and women also need equitable control over their farm outputs. Any imbalance in the gendered access to or control of these resources slows rice development. Various studies (e.g. FAO, 2004a) have shown that women have less access than men to critical productive resources and services, including credit, farm inputs (seed, fertilizers, pesticides, etc.), marketing facilities, extension and information. Even when national laws endorse equal rights to own and control land, existing customary laws often prevent women from sustainable access to fertile farmland.

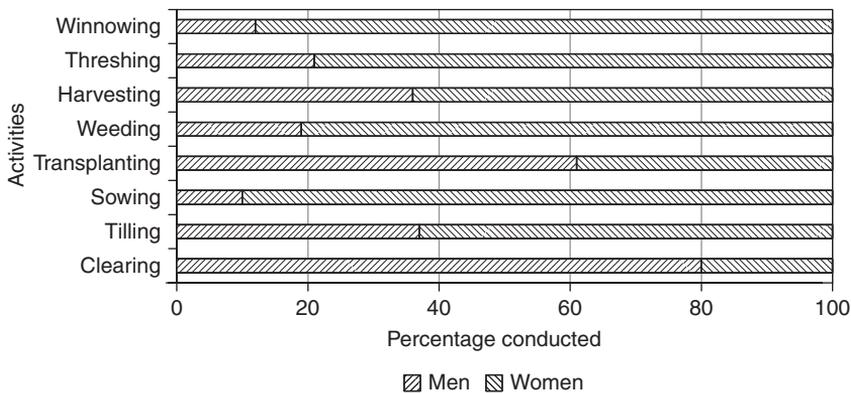


Fig. 28.1. Role of men and women in lowland rice farming in Ndop, Cameroon. (Data from Fonjong and Mbah, 2007.)

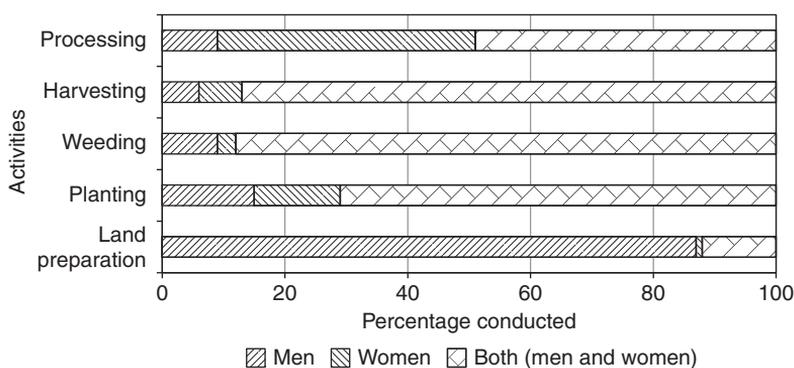


Fig. 28.2. Role of men and women in upland rice farming in the Democratic Republic of Congo. (Data from Kabore and Misiko, 2010.)

In Cameroon, for example, 45% of women are given remote rice fields requiring long trekking time to reach with consequent less time available for working (Fonjong and Mbah, 2007). Organizing themselves into women's groups does not always prove to be an effective solution. IFAD (1998) reports that women's groups were seldom allowed to use the farmland allocated by the community authorities for more than 3 years, because otherwise they would acquire permanent rights to it. Moreover, World Bank (2008) reports that high labour costs and land scarcity concerns are especially important to women farmers with no access to assets and services, and who have specific seasonal labour-use patterns. It appears that gendered access to productivity-enhancing resources and technologies remains a challenge in many African rice-farming communities. Efforts need to be devoted to effectively tackle such gender bias in access to agricultural inputs.

Female rice farmers: skilled in good farming practices

Female rice farmers have proved to possess particular skills in implementing some specific tasks. In-depth community studies conducted in rice-farming communities of Kindia (Guinea) and Yangambi (DRC) revealed that women's small rice plots (as opposed to the main family rice plots that are male dominated) play a critical role in local rice-farming systems. These small female-run rice gardens are used as 'experimental

plots' where new varieties are first tested for two or three cropping seasons and the best are earmarked on the basis of female farmers' preferred traits before deciding to scale-up on the main plots (Kabore and Misiko, 2010). These women's plots are also used for managing agro-biodiversity. In fact, several rice varieties (including old treasured ones) are maintained and carefully grown in these women's small plots, which also act as sources of seed for scaling up on the main family plot.

Furthermore, female farmers are known to be better at selecting seed. For example, in Jipalom (Senegal), Linares (2002) observed that rice seed selection is exclusively carried out by female farmers, because they are better in distinguishing different rice varieties. Women's roles as repositories of local knowledge in seed selection, seed storage, genetic conservation and seed health need to be further enhanced through 'hands-on' training.

Gender actors in rice farming in Africa: a socio-cultural and economic perspective

In African rice-farming communities, diverse prevailing practices or wisdoms exist and are generally rooted in the local culture. In such communities, ignoring these socio-cultural practices/wisdoms could be a barrier for effective scaling-up of gender-sensitive productivity-enhancing technologies. Various issues surrounding gendered access to and control over productive resources

are sensitive and need to be tackled with subtlety. Some of these sensitive aspects are related to: (i) access to farmland; (ii) access to and control exerted over some farming technologies (e.g. seed, fertilizers, mechanized equipment); (iii) allocation of labour; (iv) control of the harvested rice – trading their own products; and (v) access to knowledge. For example, in Cameroon, Fonjong and Mbah (2007) report that some men see female income-earning as a threat to their authoritative position as breadwinners. Consequently, they react to women's increased earnings by abandoning their financial responsibilities towards their families and pushing the total burden of household maintenance onto their wives.

Labour exchange is also a common social strategy developed in many rice-farming communities to cope with peak labour periods. The practice cements the social ties in farming communities. Labour exchanges are generally used for assistance to vulnerable farmers, such as elders without other labour resources, widows, sick and disabled farmers, and the poorest farmers. With rice becoming a cash crop and consequent production increases, there is the threat of a shift towards waged or hired labour to cope with peak labour periods, at the expense of labour exchange. The disappearance of such social cement could have detrimental effects on the welfare of resource-poor and vulnerable farmers. Likewise, seed commercialization is not always well accepted. In Gimbi (DRC), seed commercialization is taboo (Misiko, 2009) – seed marketing is disdained by locals. Instead, farmers acquire their rice seed through indigenous reciprocity practices such as barter (seed for seed of different rice varieties or crops), or in-kind seed credit to be paid back at harvest. Female farmers are acknowledged to be the best seed guardians because of their knowledge and abilities in seed management. In such settings, it can be argued that any initiative aiming at developing sustainable seed enterprises should extract valuable insights from the local norms and practices.

Generally, rice farming has been developed in some rural societies following the increasing demand from growing urban centres. The introduction of this 'new' crop has had implications for local cultures. For example, the introduction of rice cultivation in Ndop (Cameroon), in which women's labour constitutes an important component, has dramatically changed the traditional

patterns of division of labour and gender roles, which formerly prevented women from engaging in economically profitable activities (Fonjong and Mbah, 2007). This situation has yielded positive outcomes: the introduction of rice farming has brought women not only into food-crop production, but also into the cultivation of cash crops and other income-generating activities, through which some of them have become major breadwinners. The logical outcome is a phenomenal reduction in household poverty among many families, particularly female-headed households.

It can be concluded that in all African societies, diverse socio-economic and cultural practices exist, but are not always known due to the oral nature of the cultures. These practices need to be investigated further to gain important insights for the effectiveness of future rice research and development activities.

Gender Mainstreaming in Rice Research for Development in Africa

New varieties – new gains for women

Gender-blind technology development can obstruct its efficiency and performance. Gender bias has been a problem for agricultural research centres and has been considered, among others, a reason for the non-adoption of some agricultural technologies. Participatory approaches such as participatory varietal selection (PVS) are used by Africa Rice Center (AfricaRice) and national agricultural research and extension (NARES) partners to include both female and male end-users in evaluation and selection of varieties. Research on PVS revealed that men gave importance to short growth duration and plant height, whereas women preferred traits such as good emergence, seedling vigour and droopy leaves that indicate weed competitiveness, since they are mostly involved in the sowing and weeding operations (WARDA *et al.*, 2008).

The PVS approach is complemented by the community-based seed system (CBSS; see Bèye *et al.*, Chapter 14, this volume) to increase the end-users' access to available quality seed of the chosen varieties. Thanks to these two approaches, the new varieties have been introduced in various

rice-farming communities in sub-Saharan Africa. The gender-related impacts of improved varieties such as the NERICA varieties have been documented by several authors. For example, in Guinea, Diagne *et al.* (2007) found a higher impact of adoption of NERICA varieties among women (yield increase 1090 kg/ha) than among men (yield increase 442 kg/ha). Similar results are reported from Benin by Agboh-Noameshie *et al.* (2007). Impacts of adoption of NERICA varieties have been noted beyond the farm: Adékambi *et al.* (2008a,b) report improvement in children's schooling in households growing NERICA varieties (i.e. 6% increase in children's school attendance rate and US\$20 increase in school expenditure per child) and an increase of about \$0.30/day in household consumption expenditure per adult. Various social gains have also been reported following the adoption of NERICA varieties. The development of businesses around postharvest and rice processing technologies has also triggered women's empowerment (built social capital) through their organizations (Zossou *et al.*, 2009).

The reasons underlying these successes are that men and women farmers have been closely associated with the development and adoption of the technologies through assessment of their own needs and the participatory approaches (PVS and CBSS).

Gender-sensitive rice learning and rural innovation

Rice farmers need relevant information and knowledge on productivity-enhancing technologies and opportunities to add value to their production, and to sell their surplus. However, most of them live in rural areas with poor infrastructure (roads, communication facilities, etc.), and they frequently do not have such productivity-enhancing knowledge. Though women are acknowledged as critical players in rice-farming systems, they have limited contact with extension agents; the underlying reasons for this include cultural barriers, heavy workload preventing women from devoting 'spare time' to extension service, and unawareness of the importance of the information to be provided (Chale, 1990; FAO, 1993; Jiggins *et al.*, 1998).

As a consequence, only male farmers are generally reached. However, the information directed to male heads of households is not always transferred adequately to their female and youth dependents. For example, in Sierra Leone, agricultural extension messages, when available, often had to be indirectly channelled to women through the men, with little guarantee that the effective transfer of information acquired will occur (Kroma, 2002).

Aware of these shortcomings and hindrances in knowledge dissemination among rice farmers, AfricaRice developed a participatory learning and action-research for integrated rice management (PLAR-IRM) methodology (Defoer *et al.*, 2004; Defoer and Wopereis, Chapter 31, this volume). PLAR-IRM is an intensive methodology that combines ideas from the Farmer Field School approach (such as weekly sessions with groups of about 25 farmers, discussing a specific issue while stimulating learning) with other relevant tools (e.g. cropping calendars or transect walks). Several achievements resulting from the application of PLAR-IRM methodology have been reported. Over 3 years, AfricaRice conducted 183 PLAR training sessions in Mali, Guinea, The Gambia and Ghana, reaching 1248 farmers (61% female, 39% male) (WARDA, 2008). To make the PLAR-IRM more sustainable in Mali, 45 farmer-facilitators (19 female and 26 male) were trained to conduct PLAR in their villages after the 'Participatory Adaptive Research and Dissemination of Rice Technologies in West-Africa' project (WARDA, 2008). Similar PLAR-IRM training activities were conducted in the other project countries (WARDA, 2008). Farmers clearly appreciated the PLAR-IRM training and this approach has helped to break down gender barriers.

Furthermore, a rice seed health video previously produced in Bangladesh was translated into Bambara and used as a video-supported learning tool to reach 3915 farmers (2120 male, 1795 female) in nine villages in Mali. After watching the videos, about 40% of the women changed their seed-drying practices in Bangladesh (Van Mele *et al.*, 2005; Van Mele *et al.*, Chapter 30, this volume). Considering the effectiveness of the seed health video in communicating technologies to a large number of farmers and the success of the PLAR-IRM methodology in farmer learning, AfricaRice developed the zooming-in zooming-out (ZIZO) approach (Van Mele, 2006; Van Mele

et al., Chapter 30, this volume) to produce further media-supported learning. In 2009, AfricaRice combined the PLAR-IRM and ZIZO approaches to produce a new series of videos on integrated rice management. Dealing with five modules (land preparation, seedbed, transplanting, weed management, soil fertility management), these videos were translated into local languages in addition to the French or English versions. Through video-supported group learning, 2396 smallholders in DRC (1808 male, 588 female), 920 in Guinea (620 male, 300 female) and 800 in Sierra Leone have been trained (AfricaRice, 2010). These videos were also translated into more than 33 African local languages for a wide dissemination across sub-Saharan Africa, and had already reached 160,000 farmers in 2010 (Wanvoeke and Van Mele, 2010; Van Mele *et al.*, Chapter 30, this volume).

Various studies have shown the effectiveness of these video-based learning tools in communicating agricultural technologies to the poor, women, men and young farmers. For example, in their study on rice parboiling technologies in Benin, Zossou *et al.* (2009) found that 89% of women strongly appreciated the farmer-to-farmer video with two characteristics emerging: (i) the video burns images into the memory (mentioned by 74% of them), and (ii) the video is both educational and entertaining (mentioned by 77% of them). Importantly, the video-supported training has been evaluated as more effective and has reached three times as many women than hands-on training workshops organized by a local NGO. Also more than 90% of the women who watched the video improved the quality of their parboiled rice. These tools provide equitable access to research and extension knowledge by both male and female grassroots actors operating in rice sector.

Towards a Framework for Gender Equity in Rice Research for Development in Africa

Process of gender mainstreaming in research for development

It has become apparent that there is a need to integrate gender as an analytical variable in

research for development, especially in rice-based production systems. Innovations should be based on gender analysis,¹ which is a way of looking at a community in its totality to ensure that the interests of all its members – men, women and children – are addressed. Hunt (2004) stresses that gender analysis should be done at the various stages of programme or project design, implementation and impact evaluation, and gives the following definition:

During program and project design, gender analysis is the process of assessing the impact that a development activity may have on females and males, and on gender relations (the economic and social relationships between males and females which are constructed and reinforced by social institutions). It can be used to ensure that men and women are not disadvantaged by development activities, to enhance the sustainability and effectiveness of activities, or to identify priority areas for action to promote equality between women and men. During implementation, monitoring and evaluation, gender analysis assists to assess differences in participation, benefits and impacts between males and females, including progress towards gender equality and changes in gender relations.

There is a lot of literature on how to integrate gender perspectives into research-for-development programmes. However, this is usually restrained by inadequate capacity to conduct gender-sensitive analysis. Meinzen-Dick *et al.* (2011) report that, despite the evidence that women are being involved in participatory adaptive research and that attention has been focused on gender differences in the impact of agricultural technologies, more work needs to be done in integrating gender in the upstream priority setting and decision making. They recommend more functional linkages among research-for-development actors instead of a unidirectional flow between research and end-users, and present a conceptual framework that will allow a more effective feedback loop (Fig. 28.3).

An important starting point in the implementation of gender mainstreaming is to ensure that the initial definitions of issues and problems are done in a way that allows for the identification of gender differences and disparities.

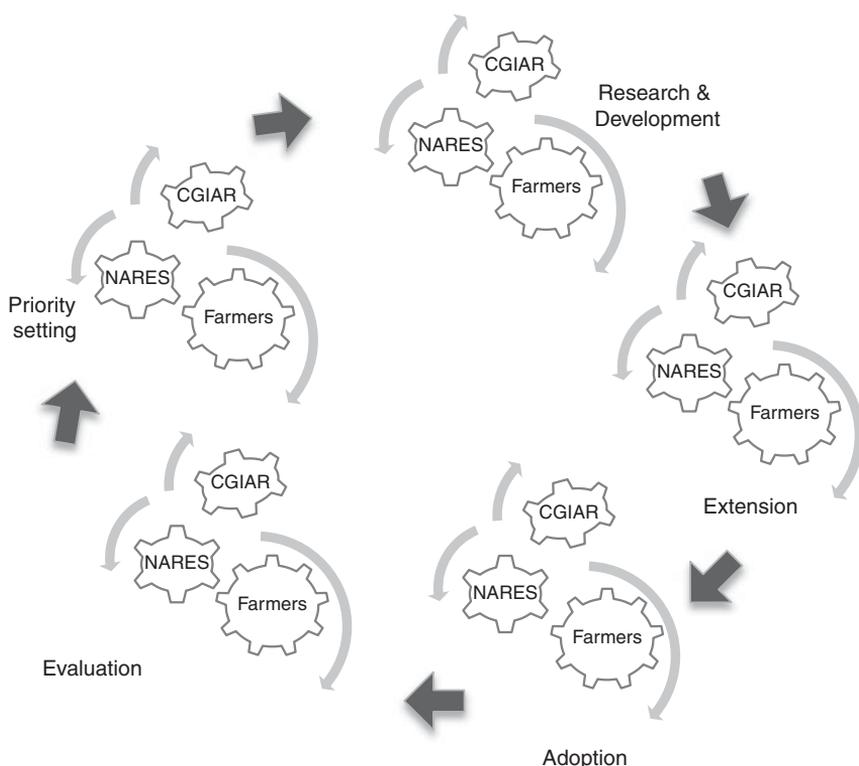


Fig. 28.3. Components of a gender-responsive agricultural research system. (From Meinzen-Dick *et al.*, 2011, reproduced with permission from the International Food Policy Research Institute www.ifpri.org.) NARES: national agricultural research and extension system.

Assumptions that issues and problems are neutral from a gender perspective should be avoided and gender analysis should always be carried out, separately or as part of existing analyses. Meinzen-Dick *et al.* (2011) stress that integrating gender issues into agricultural research and development will require addressing the following critical questions:

- For priority setting: (i) where and how are the differential needs, interests and priorities of women and men reflected? (ii) who makes the decisions regarding the kinds of agricultural R&D that will receive investment? (iii) are there mechanisms to take the needs of women and men as both producers and consumers into account?
- For research and development: (i) who are the researchers and how attuned are they to gender issues?
- During extension phase: (i) who delivers extension services? (ii) who receives the extension services and information? (iii) are women recognized as farmers and clients of the extension services? (iv) how are extension services delivered?
- For adoption of innovations: (i) who can and will adopt agricultural innovations? (ii) who can benefit from them?
- For evaluation and impact assessment: (i) how can both external studies and participatory processes that assess the costs and benefits of agricultural innovations and their related distribution consider gender differences? (ii) how can we use evaluations and assessments that do consider gender differences to inform future research priorities?

These processes can be seen at different scales with different actors in various research-for-development institutions.

Practical example of integration of gender in project cycle

When gender is to be integrated into any project cycle, integration should occur at all stages, from diagnosis and implementation, through to monitoring and evaluation, adoption and impact evaluation.

During the diagnosis phase, constraints and problems, opportunities and needs are determined by reviewing earlier research and undertaking additional studies, especially participatory situation analysis (Cornwall, 2000). Since women and men farmers and processors have shared responsibilities and constraints within the household economic production and household management systems, data disaggregated by sex and age should be collected using gender-responsive tools such as semi-structured questionnaires, checklists and gender-focused discussions (IFAD, 2002). Questions should be structured in such a way that they bring out information on different gender categories in a household. These data are important in monitoring and evaluation (M&E) as they reveal project impacts on men and women, including the young and old, and help in development of gender-responsive technology (Njenga *et al.*, 2008). Once the project design phase is rendered gender-sensitive, all the other phases should automatically take gender issues into account.

Project design: The project's goals and strategies are identified through a joint process of visualizing the desired development and project outcomes, then evaluating alternative strategies that might be applied to realize those outcomes by looking into their viability and effectiveness to produce the required outcomes. In research, some of the strategies identified may include further participatory research into, for example, technical options. Here a gendered assessment of alternative problem-solving strategies can be used as well as a checklist of guiding questions for conducting group discussions as suggested by CIP (2008).

Activity planning: At this stage the goals and strategies are operationalized by: identifying the activities needed to implement the strategies; developing the methods and tools to be applied; dividing responsibilities and tasks among the participating organizations and groups; defining coordination and monitoring mechanisms; and

developing a budget and a timeframe. The planning can be done using a participatory gender-responsive planning matrix (Hovorka *et al.*, 2009).

Implementation: Implementation of project activities requires following the designed strategies, goals/objectives and activities, but also requires adaptation to the local situation. Sometimes there is a need to enhance the skills of research teams for effective incorporation of gender in R&D, particularly if there are no partners with gender expertise in the team (Njenga *et al.*, 2008). For instance, the research team should have its capacity for participatory research and gender analysis built.

Monitoring and evaluation: To ensure institutional accountability for gender mainstreaming in the overall rice research-for-development activities and in reporting on gender issues, there is a need to establish relevant gender-sensitive qualitative and quantitative indicators to be regularly monitored and evaluated. This process will ensure gender mainstreaming is supported by gender-sensitive budgeting and relevant time allocation for effective implementation of the planned activities (Njenga *et al.*, 2008).

Impact assessment: Baseline surveys at the outset of each activity need to ensure that relevant benchmark gender-disaggregated data and gendered indicators are captured. Then, at the end of the related activity, the *ex-post* impact assessment generates end-line data and indicators to measure the progress registered and draw the lessons learned from successes or failures for any duplication or future fine-tuning.

It takes political will at the institutional level to operationalize gender mainstreaming – this will ensure that a clear and comprehensive operational gender policy is established and effectively shared.

It should be noted that practical gender mainstreaming is not about running through a checklist of questions to ensure you have not overlooked anything. It is about asking the right questions so that you can see where limited resources should best be used. Gender mainstreaming is a necessary process for achieving gender equality in the most effective and efficient manner. For example, the key questions listed in Box 28.1 could help to ensure that the logical framework of the project includes a gender perspective (UNDCP, 2000).

Box 28.1. Determining the gender sensitivity of a logical framework matrix

Objectives:

- Do the objectives address the problems of both men and women?
- Are the objectives likely to influence relationships between women and men?
- Do the objectives specify **who** is targeted and **who** is expected to benefit, differentiating between women and men?
- Who participated in choosing objectives from the complete set of needs to be addressed?
- What needs of women, and of men, does the project address?

Outputs:

- Are there separate outputs for women and men?
- Are they consistent with the needs of the beneficiary group?

Achievement indicators:

- Are there separate achievement indicators for women and men?

Inputs:

- Are the inputs appropriate for the involvement of both women and men?
- Is there time and is there a budget for gender analysis?
- Are the budgets flexible and reviewable?
- Is the planning flexible enough to enable new activities to be initiated in response to women's and men's constraints?

Risks and assumptions:

- Analysis of risks and assumptions should consider gender-related barriers and constraints that could affect implementation. Where necessary, special project activities should be integrated to counteract barriers and constraints.

Source: Adapted from EC-C (1993).

Challenges related to gender mainstreaming in rice research for development

Despite the increase in awareness and the availability of information on the existing gender disparities in agriculture, integrating a gender perspective in agricultural research for development still faces many challenges. These challenges come from the misconception of gender equality as implying that men and women become equal, while gender equality in fact means that the opportunities and life chances of men and women are equal (Opio, 2003). In agricultural research and development, achieving gender equality will therefore not only require changes in research targeting, system mapping, and diagnosis and intervention, but also in the institutional culture of the research organization to ensure that women are given a strong voice both in shaping research and in shaping the development of their societies (Njenga *et al.*, 2008). Moreover, it is also observed that

even though there are well-written gender-mainstreaming strategies at country level, many research and extension institutions have not successfully addressed gender in the design and implementation of their activities. The provision of agricultural services is male dominated and little effort has been made to train men to work with women and be aware of the strategic and practical needs of women within agriculture. Also, despite the fundamental role women play in agriculture very few of them own, control or have guaranteed access to productive resources such as land, credit, technical services, market outlets and information.

Furthermore, very few members of staff have been trained in gender analysis, which therefore limits the scope for promoting equity within most institutions. Members of staff lack experience in mainstreaming gender issues into their programmes. While some are willing to do so, they have no clear guidelines and cannot quite relate the relevance to their working environment.

Conclusion

By analysing and documenting gender-disaggregated data, AfricaRice has shown the impact of some of its research on targeted gender actors. However, more effort needs to be invested to better integrate gender issues in the **whole** rice research-for-development cycle for an effective

and sustainable impact on actors' livelihoods. The framework to mainstream gender in rice research-for-development activities presented in this chapter provides important guidelines in this respect. Its application will require substantial awareness-raising and capacity-building efforts among Africa's rice research and extension communities.

Note

¹ A number of different frameworks are used to undertake gender analysis. Some of these have been developed in Northern countries (Overholt *et al.*, 1985; Moser, 1993), and others have been developed and adapted by development practitioners from the South (Longwe, 1991; Parker, 1993; Kabeer, 1994). These articles outline the essential steps that need to be addressed to undertake gender analysis.

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