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The importance of gender in agricultural research

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Abstract

Throughout the world, men and women play distinct roles in agriculture and therefore develop different areas of expertise in managing, shaping, and preserving biodiversity. In addition to contributing nearly half of the labour involved in the production of staple crops (rice, wheat, maize), women in Latin America, Asia and Africa collect up to 80 per cent of wild vegetables, and hold specialized and localized knowledge of wild plants used for fodder and medicine. They additionally grow and preserve underutilized species, which are important for increasing on farm biodiversity and contributing to household food and livelihood security. In fact, in their multiple roles as farmers, plant gatherers, primary health care givers, food processors, preservers of seed, home gardeners, traders, and more, rural women play a key role in managing biodiversity. For instance, many 'female' spaces, such as home gardens, which are generally kept under women's care, are havens of biodiversity where less common species or varieties of cultural, economic, and dietary value are conserved. Over time, women's practices both within home gardens and beyond have favoured the regeneration, domestication, and dispersal of various important species, and enabled the conservation of plant genetic material in fields and in the bush. Yet, women's extensive knowledge of breeding, selection, management, processing, storage and conservation of plant resources is often overlooked. This not only undervalues women's knowledge and contribution to these processes, but also hinders efforts to ensure the sustainable management of agricultural biodiversity, in which both men and women must contribute as allies. Drawing from examples from agriculture and forestry, I highlight the importance of recognizing women's and men's distinct and complementary sets of knowledge and practices to understand and sustainably manage biodiversity.

Background

Research and development projects focusing on agriculture and conservation often fail to include women, as if the management and conservation of agricultural biodiversity were the sole domain of men. Over the years, however, much evidence has demonstrated that any serious effort to conserve agricultural diversity must recognize the farmers who have long managed, adapted, promoted and conserved this diversity; and these custodian farmers include women.

Gendered world

Understanding the role of gender in agricultural research begins with the recognition that we live in a gendered world. Although world views and norms vary over time, regionally, and according to cultural factors, in most farming communities there exists a strongly gendered division of labour. Women and men carry out different tasks in and around the homestead and farm, and have distinct roles and responsibilities with respect to resource management. They may grow different crops or the same crops in different places or they may perform different tasks in a given crop's cultivation. For example, men often clear fields whereas women sow, weed, and so on. Because of their distinct responsibilities, women and men develop separate, shared, and complementary sets of knowledge about the natural world (Rocheleau 1991; Howard 2003a).

Men and women also face gendered constraints and opportunities in agricultural production and consequently develop different interests or priorities for crops. For example, some crops tend to be considered 'men's crops', which men control and sell and from which they manage revenues, whereas others are 'women's crops'. Revenues from sales of these crops allow men and women to fulfil some of their distinctly male or female responsibilities. Hence, it is clear that by focusing only on men's crops, priorities, and knowledge related to agriculture, we are missing half of the story: the half in which women are involved and which tends to be very important to agricultural biodiversity conservation.

Women's multiple and often 'invisible' roles

To bring this half of the story to light, it is worth looking at the many and often 'invisible' roles women play as farmers, seed selectors, food processors, health care givers, and more. In these roles, they have a key stake and responsibility for conserving biodiversity. Yet, because these contributions are not widely recognized, women continue to lack a place at the table in discussions on agriculture and conservation.

- **Women as farmers:** Women farmers are not only responsible for growing nearly half of the world's food in smallholder production systems, but also for growing and preserving underutilized species, which are important for

increasing on farm biodiversity and contributing to household food and livelihood security. Women often cultivate a wider variety of crops than men, but in smaller quantities (making them less visible); and although women farmers also sell agricultural products, their production is often less market-oriented than men's. Nonetheless, it fills extremely important nutritional and cultural purposes (Sasvari et al. 2010).

- **Women as plant gatherers:** In Latin America, Asia and Africa, women and girls collect the major part of wild vegetables, and hold specialized knowledge of wild plants used for fodder and medicine (FAO 1999).
- **Women as health care givers:** Women play an important role in the provision of primary health care. They not only know which plants and non-timber forest products carry medicinal properties, but also know how to process these into useful cures (IDRC 1998).
- **Women as home gardeners:** Home gardens tend to be under the care and maintenance of women. These gardens are key to household food security and health, as well as being conservation sites for special or preferred varieties and testing grounds for new varieties or practices. Described as indigenous experimental stations and genebanks, home gardens contain many semi-domesticated species transplanted from the wild. They are refuges where less common species or varieties that women collect, manage and exchange, are conserved, and sites of agricultural biodiversity conservation, where women's roles as plant breeders and custodian farmers really shine (Jiggins 1986).
- **Women as seed preservers:** Women's contribution to the management and conservation of agricultural biodiversity is also strongly related to their seed management and preservation practices. Worldwide, women are the primary actors involved in smallholder seed selection and storage and in farmer-to-farmer seed distribution networks (Oakley and Momsen, 2007). They exchange adapted seed varieties, as well as wild plants and crops, to strengthen their social networks and enhance local biodiversity (Ertug 2003; Wilson 2003).
- **Women as post-harvest processors:** Women carry out many activities to ensure the proper functioning of the household, such as post-harvest processing of crops and plants to generate edible and culturally acceptable foods. As biological diversity is often lost because it is underutilized rather than over utilized, this process of rendering plants usable and useful creates critical incentives for plant management and conservation. Cooking—which requires the use of specialized knowledge of plants—is thus closely linked to the maintenance of agricultural biodiversity as well as of culture, as culinary traditions and cultural identity are intricately linked (Howard, 2003b).

Because of their multiple responsibilities in post-harvest processing and household food security, women tend to use plants in diverse ways. They frequently favour local crop varieties that serve a range of purposes, including ceremonial and religious functions, nutrition, medicine, provision of fibre, fodder, and so on,

that are adapted to local climatic and agroecological conditions. For example, they may grow traditional varieties of rice for various uses: preparation in many dishes, processing leaves into a relish, using straw and husks for thatching and fertilizer, respectively, and employing both as fuel or fodder. Seed selection reflects these multiple uses as well as the plant's processing, storage, taste or nutritional properties. In contrast, men often show interest in introduced varieties that produce high yields of commercial value, and select plants and crops based on agroecological considerations, such as resistance to drought or pests, as well as yields (Jiggins 1986). Women's ability to make decisions about seed selection is thus critical for the conservation of biologically diverse indigenous crops and rare and unique varieties that may be grown in smaller quantities for household nutrition or other consumption purposes. Selecting crops based on many criteria requires high expertise, which women acquire through inter-generational knowledge transmission as well as years of first-hand experience (Pionetti, 2014).

Conclusion

In conclusion, women's multiple roles in agriculture and agricultural biodiversity conservation illustrate that women make significant contributions to the adaptation, promotion and conservation of agricultural biodiversity. Gendered differences and complementarities within the household make both women's and men's knowledge, roles, priorities and expertise in biodiversity conservation essential to discussions about custodian farmers. The selection, improvement and adaptation of plant varieties are complex, and both women and men farmers play key roles in these processes. Men and women may have similar or contrasting preferences and priorities with respect to plant traits sought during seed selection and resource management processes, and may make decisions together or separately about these.

The notion of custodian households, wherein both women and men contribute knowledge and skills to breeding, promoting, and conserving biodiversity paints a more accurate picture of the processes unfolding in farming households. This must be recognized if we want to draw on the knowledge and skills of the real experts in agriculture and biodiversity conservation—both women and men farmers—and to make sure that both women and men gain from efforts to use and sustainably manage agricultural biodiversity for their household's common good.

Further reading

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