

Women – users, preservers and managers of agrobiodiversity



FAO photo/A. Wolstac

- *Through their daily work, rural women have accumulated intimate knowledge of their ecosystems, including the management of pests, the conservation of soil and the development and use of plant and animal genetic resources.*
- *It is estimated that up to 90 percent of the planting material used by poor farmers is derived from seeds and germplasm that they have produced, selected and saved themselves. This means that small farmers play a crucial role in the preservation and management of plant genetic resources and biodiversity.*
- *In smallholder agriculture, women farmers are largely responsible for the selection, improvement and adaptation of plant varieties. In many regions, women are also responsible for the management of small livestock, including their reproduction. Women often have a more highly specialized knowledge of wild plants used for food, fodder and medicine than men.*



GENERAL PROFILE

As the twenty-first century approaches, rural women in developing countries hold a key to the future of the earth's agricultural systems and to food and livelihood security. They are responsible for the selection of seed, management of small livestock and for the conservation and sustainable use of plant and animal diversity. Rural women's roles as food providers and food producers link them directly to the conservation and sustainable utilization of genetic resources for food and agriculture. Centuries of practical experience have given women a unique decision-making role and knowledge about local crop and farm animal management, ecosystems and their use.

The poorest farming communities are those that live in marginal and heterogeneous environments that have benefited least from modern high-yielding plant varieties. Up to 90 percent of the crops grown by poor farmers come from seeds and planting material that they have selected and stored themselves.

These subsistence farmers cannot afford external inputs such as fertilizers and pesticides, veterinary products, high-quality feeds and fossil fuel for cooking and heating. They rely on maintaining a wide range of plant and animal varieties adapted to the local environment. In this way, they are able to protect themselves against crop failure and animal losses, to provide a continuous and varied food supply, and to ward off hunger and malnutrition. In many areas, the majority of smallholder farmers are women.

Some trends and figures relating to agrobiodiversity

- 30 percent of animal genetic resources at the breeding stage are categorized as a high risk of loss.
- Of the 250 000 to 300 000 known plant species, 4 percent are edible, but only 15 to 200 are used by humans.
- Three plant species (rice, maize and wheat) contribute nearly 60 percent of the calories and proteins that humans derive from plants.
- The rural poor depend upon biological resources for an estimated 90 percent of their needs.

GENDER RESPONSIVE POLICIES, AGREEMENTS AND SUPPORT

I mportant international policies and legal agreements acknowledge the key role that women play, especially in the developing world, in the management and use of biological resources. Despite this increased recognition at international levels, little has yet been done to clarify the nature of the relationship between agrobiological diversity and the activities, responsibilities and rights of men and women. Women's key roles, responsibilities and intimate knowledge of plants and animals sometimes remain "invisible" to technicians working in the agriculture, forestry and environmental sectors, as well as to planners and policy-makers.

The lack of recognition at technical and institutional levels means that women's interests and demands are given inadequate attention. Moreover, women's involvement in formalized efforts to conserve biodiversity is slight because of widespread cultural barriers to women's participation in decision-making arenas at all levels.

Modern research and development and centralized plant breeding have ignored and, in some cases, undermined the capacities of local farming communities to modify and improve plant varieties. With the introduction of modern technologies and agricultural practices, women have lost substantial influence and control over production and access to resources, whereas men often benefit more from extension services and have the ability to buy seeds, fertilizers and the necessary technologies.

Giving due recognition

- ▶ *Both the Convention on Biological Diversity (UNEP, 1993) and FAO's Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture (1996) acknowledge the role played by generations of men and women farmers, and by indigenous and local communities, in conserving and improving plant genetic resources. They affirm the need for women to participate fully in conservation programmes and at all levels of policy-making.*
- ▶ *Two key objectives of Chapter 24 of Agenda 21 (UNCED, 1992) are to promote "the traditional methods and the knowledge of indigenous people and their communities, emphasizing the particular role of women, relevant to the conservation of biological diversity and the sustainable use of biological resources" and to ensure "participation of those groups in the economic and commercial*

benefits derived from the use of such traditional methods and knowledge”.

MEN AND WOMEN HOLD DIFFERENT SETS OF KNOWLEDGE

Through their different activities and management practices, men and women have often developed different expertise and knowledge about the local environment, plant and animal species and their products and uses. These gender-differentiated local knowledge systems play a decisive role in the *in situ* conservation, management and improvement of genetic resources for food and agriculture. It is clear that the decision about what to conserve depends on the knowledge and perception of what is most useful to the household and local community.

Women's and men's specialized knowledge of the value and diverse use of domesticated crop species and varieties extends to wild plants that are used as food in times of need or as medicines and sources of income. This local knowledge is highly sophisticated and is traditionally shared and handed down between generations. Through experience, innovation and experimentation, sustainable practices are developed to protect soil, water, natural vegetation and biological diversity. This has important implications for the conservation of plant genetic resources.

“SCIENTISTS” AND DECISION MAKERS IN THE SELECTION AND IMPROVEMENT OF PLANT VARIETIES AND ANIMAL BREEDS

In smallholder agriculture, women farmers have been largely responsible for the selection, improvement and adaptation of plant varieties. The selection of varieties is a complex, multifaceted process that depends on choosing certain desirable characteristics (for instance, resistance to pest and diseases; soil and agroclimatic adaptability; nutritional, taste and cooking qualities and food processing and storage properties).

In many regions, women are also responsible for the management and reproduction of small livestock. Again, the choice of preferred breeding traits is dictated by adaptation of certain breeds to local conditions, resistance to disease and available feeds.

The fact that plants and animals are often produced for a variety of purposes further complicates the selection process since multiple traits are sought.



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For example, sorghum may be grown for its grain and stalk, sweet potato for its leaves and root, and sheep may provide milk, wool and meat. Moreover, to create a favourable micro-environment and manage space and time better, several plant species that complement each other are frequently intercropped and mixed farming (crop, livestock and agroforestry) is often practised.

Recognition of this sophisticated decision-making process is gradually leading breeders and researchers to realize that a community will adopt and select new and improved seeds for food crops and animal breeds if they have been tested and approved by men and women farmers.

In the Andhra Pradesh State in India, individual women farmers and sanghams (women's cooperatives) helped entomologists of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) to carry out a successful pigeon pea programme to develop improved pest-resistant lines. Researchers examined women's traditional pea varieties and offered several lines that were resistant to the main enemy, the pod borer, and came closest to the farmers' seed preferences. The women assessed their performance not only in terms of yield but also on the basis of ten different criteria, including leaf production, pod borer damage, taste, wood biomass, quality, market price and storability. Three of the four improved lines were rated by the women as being superior to their local varieties and were then grown alongside their own peas, which they retained for their superior taste. Furthermore, a mix of varieties was maintained to reduce pest attack.

FARMERS' RIGHTS

Through their daily activities, experience and knowledge women have a major stake in protecting biological diversity. However, at national and local levels rural women are still hampered by a lack of rights to the resources they rely on to meet their needs. In general their rights of access to and control over local resources and national



policies do not match their increasing responsibilities for food production and management of natural resources.

Given that men and women farmers' knowledge, skills and practices contribute to the conservation, development, improvement and management of plant genetic resources, their different contributions should be recognized and respected as farmers' rights. These are "rights arising from the past, present and future contribution of farmers in conserving, improving and making available plant genetic resources, particularly those in the centres of origin/diversity". The purpose of these rights is to "ensure full benefits to farmers and support the continuation of their contributions" (FAO, 1989).

The concept of farmers' rights was developed to counterbalance "formal" intellectual property rights (IPR). These formal mechanisms of recognition give little consideration to the fact that, in many cases, such innovations are only the most recent step in a long process of inventions that have been developed over millennia by generations of farmers, particularly women, throughout the world.

HOW TO ADDRESS GENDER AND AGROBIODIVERSITY

A long-term strategy for the conservation, utilization, improvement and management of genetic resources diversity for food and agriculture requires:

- Recognition that there are gender-based differences in the roles, responsibilities and contributions of different socio-economic groups in farming communities.
- Recognition of the value of men's and women's knowledge, skills and practices and their right to benefit from the fruits of their labour.
- Sound and equitable agricultural policies to provide incentives for the sustainable use of genetic resources, especially through *in situ* conservation and improved linkages with *ex situ* conservation.
- Appropriate national legislation to protect "threatened" genetic resources for food and agriculture, guarantee their continued use and management by local communities, indigenous peoples, men and women, and ensure the fair and equitable sharing of benefits from their use.
- Improvement of women farmers' access to land and water resources, to education, extension, training, credit and appropriate technology.

- Participation of women, as partners, decision-makers and beneficiaries.

The challenge for future generations is to safeguard agrobiodiversity by protecting and promoting the diversity found in integrated agricultural systems, which are often managed by women. The maintenance of plant and animal diversity will protect the ability of men and women farmers to respond to changing conditions, to alleviate risk and to maintain and enhance crop and livestock production, productivity and sustainable agriculture.

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GLOSSARY

EX SITU CONSERVATION: Literally, "out of place"; not in the original or natural environment, e.g. seed stored in a genebank.

GENEBANK: Facility where germplasm is stored in the form of seeds, pollen or tissue culture.

IN SITU CONSERVATION: Literally, "in (a plant's) original place".

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