

Women and biodiversity conservation

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Photo: Krishna Prasad

The loss of diversity in food crops is the greatest threat to food security. Today, there is an alarmingly narrow genetic diversity among the plants, fish and livestock that make up the world's food basket. An analysis by the GREEN Foundation of the activities of women in agriculture and food processing clearly illustrates their key-role in conserving diversity.

Putteeramma is a farmer, mother, grandmother, seed conservator and organic cultivator. She lives in a small village hidden in the valley between the hilly slopes that border Karnataka and Tamil Nadu. Frail in body but strong in her convictions about her heritage and traditions, she holds on to her five acres of rain-fed land.

She wakes up to the sound of the birds on her plots of finger millet, dry-land paddy, lentils, red gram, field beans, cow-peas and sorghum. She believes that one has to give back to nature something of what one has taken. Besides tending various species of crops and animals, Putteeramma also grows exclusive varieties of *ragi*, or finger millet, and paddy.

Foodproducers

Putteeramma is not the only woman who has understood the need to conserve food-crop diversity; women in rural communities all over the world contribute to sustaining food production. While the diverse tasks of women are extremely difficult to quantify, their role in securing household food cannot be disputed. In addition to being responsible for the farm and the household, women are the custodians of the family's food basket.

Studies have shown that women in India are the major food producers in terms of value, volume and quality. An interesting study of the gender division of labour has shown that women do 37% of sowing, 59% of interculturing, 60% of the harvesting, 59% of threshing and 69% of all the work involved in tending farm animals.

Generally men and women work together in a complementary way although difficulties may arise when decisions have to be made about whether to produce for

market or home consumption.

Rituals and seed selection

In the finger millet growing areas of southern India, mustard is the first plant to flower. This is the moment when *Gowri Pooja*, the ritual for the Goddess Gowri, is celebrated. Gowri is the goddess of water and a symbol of fertility. Flowers of the mustard plant are taken home and worshipped. In some parts of Karnataka young unmarried girls sing songs of praise to the goddess and collect contributions from the public. They also bring fresh soil and make an image that symbolises fertility. After the ritual, the image is immersed in water to reaffirm the connection between plants, soil, water and fertility.

Women play a major role in conserving seeds: they decide the quantity and variety of seed to be saved and the method of preservation. Seed selection by women is a continuous activity, starting the moment the crop begins to flower. Working in the fields, they observe the plants and decide which seeds to select. They identify plants of good quality on the basis of size, grain formation and their resistance to pests and insects. To cover the risk of drought, women select enough seed to see them through two seasons.

Seed storage

When the selected heads of grain are brought into the threshing yard, women welcome the first cartload with a *pooja*, or ritual. On the last day of threshing women worship the mounds of grain and a portion of each mound is given to the poor. A gift of grain is also presented to the families who have helped with the harvest.

Before the seeds are carried away for

storage, women ritually invoke the forces essential for a good crop in the next growing season. This ritual is an important part of seed preservation. Water is symbolised by a winnowing pan, protection from pests by certain leaves, soil fertility by cow dung and weeds by grass. Some of the leaves used in the ceremony have insecticidal properties. Lakkli leaves (*Vitex negundo*), for example, are used when paddy seeds are stored; neem leaves are used as an alternative when lakkli is unavailable.

In some cases paddy seeds are mixed



Photo: Krishna Prasad

Negilu Pooje, ceremonial germination test of 9 seed varieties

with the seeds of field bean (*dolichus lab lab*) and mustard to help preservation. Tur is mixed with sand for the same reason. Sometimes seeds are stored above the kitchen where the smoke helps to keep the pests away.

Ceremonial germination tests

Each region has its own way of testing the quality of the seeds. In the sorghum region farmer families celebrate a festival called *Kammanna Habba* when they finish threshing. In this festival people express their gratitude to the planets for the crops they have received and, for three days, the women worship symbols that represent the planets. At the end of the ceremony they make small mounds from the different seeds they have harvested and sanctified water is poured on each heap. Women believe that the water will carry away only the good quality seeds. If nothing is carried away they will look for other seeds.

This quality test is followed by a germination test or *Negilu Pooje* (see photo). In the finger millet growing areas this test takes place at *Ugadi* or the Hindu New Year. Nine seed varieties of cereals, pulses and oil seeds are put into the shell with good manure. These are worshipped and inspected after seven days. If there are only few sprouts or if these are too small, the seeds of that particular variety is not considered suitable for the coming agricultural season. The farmer will then exchange or borrow seeds until a suitable replacement has been found. It is considered unfavourable to purchase seeds for money.

Sowing sacred seeds

A few days before sowing, the seeds are taken out of storage. They are dried and those damaged by pests are discarded. Directly before they are sown the women take the seeds to the house deity and worship them. On their way to the field the woman carrying the seeds will visit and make offerings to the seven village goddesses, known as the 'Seven Sisters'. These seed offerings are later on collected by the poor. Women also worship the draft animals and the farming implements that will be used for sowing.

None of the above procedures are followed for the seeds of high-yielding varieties bought at the market. While the local varieties are considered sacred, the high-yielding varieties are regarded as impure. They are sent directly to the field where only the men are responsible for sowing them.

Rains and food availability

During a participatory activity with women farmers an agricultural calendar was drawn according to the rains. Each two weeks the rains are indicated with a different name. This calendar was compared



Photo: Krishna Prasad

Farmers display a collection of traditional seed varieties at the Kollagondanapali seed fair

with seasonal food availability and the jobs done by men and women. The women indicated the seasonal availability or lack of food.

According to this calendar the agricultural season begins with the *ashwini rain*, which is the signal to farmers to start preparing the land. Crops are sown at the time of the *kriethika* and *rohini* rains. Reserves of lentils and cereals for consumption are usually low for both humans and animals during the growing season. At this time the entire farming community depends on local biodiversity for a supply of greens, fruits, vegetables, tubers, potatoes, sweet potatoes and bamboo shoots.

During the following period of *magge malai* or big rain and the *ubbe* and *utharai male* rains, the fields and forests are full of green plants. Most of these are considered unproductive weeds by modern agriculture. The role of rural women as food producers is thus directly related to the diversity of local food crops and to the surrounding bio-diversity. The local market only has cereals and pulses to offer in the months after the harvest.

For farmers like Puteeramma, biodiversity is manifest in both cultivated foods and wild plants. Women's specialised knowledge of wild plants includes leaves, fruits, berries, nuts, seeds, edible roots and pulses. Diversity in cultivated foods is under threat, however, due to modern agriculture. Part of the traditional genetic material is replaced and natural resources that serve as biodiversity reservoirs are affected. These threats are particularly dangerous to the people who rely on natural resources for their survival during several months a year.

GREEN and biodiversity

GREEN Foundation is a committed, non-governmental organisation that works with farmers in general and women farmers in particular. GREEN strives to conserve the agricultural biodiversity that is based on local culture and knowledge. In some 50 communities there are activities to collect, multiply, characterise, conserve and

distribute traditional crop varieties like millet, gram, lentils, finger millet, rice and sorghum.

GREEN's Biodiversity Conservation Centre is located in the rural area of Thalli in Southern India. Here research and documentation on organic farming is carried out. Activities include food processing, annual seed fairs, group training, documentation, publications like seed catalogues and strengthening indigenous knowledge and its related practices.

The traditional Indian system of *panchayats*, or local self governance, was dismantled during British colonial rule. After independence the panchayats were restored but only for administrative purposes. Local knowledge, skills and social diversity in the use of natural resources are not acknowledged in the modern panchayati institutions. Women like Puteeramma are struggling by themselves to maintain their culture, biodiversity and identity.

GREEN believes that when there is a quiet revolution in reviving people's belief in their knowledge and cosmovision, processes of endogenous development are set in motion. Working with people like Puteeramma brings to light the possibilities to understand the cosmovision and its relation to enhancing biodiversity.



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Cultivating Seed Links is a new CD-Rom produced by GREEN Foundation that describes bio-diversity from an ecological, economic, gender and cultural perspective. In a highly informative way, using visuals and traditional Indian music, one can learn about biodiversity and the work of GREEN Foundation. Agrobiodiversity conflicts and on-farm conser-