

## Patenting biodiversity :

### PHILIPPINE EXPERIENCE

As early as 1992 multinational companies from Japan and the U.S. started patenting extracts of Filipino natural resources. A Japanese multinational company had bribed a Filipino scientist connected with the Department of Science and Technology for U.S.\$5 million to patent a banaba extract (banaba is a tree) used for curing diabetes.

This information was made public by Dr Romy Quijano chair of the Philippine Health Alliance for Democracy on September 28, 1994 when protesters gathered at the Philippine Senate to rally against Philippine ratification of GATT, warning that it will lead to patents that will virtually kill Philippine efforts to extract medicines from herbs and other plants. Dr Quijano cautioned that foreign multinational companies will control the Philippine drug industry once GATT is ratified.

He related the attempt by the U.S. National Cancer Institute and National Institute of Health to provide Filipino scientists, including himself, with U.S.\$5 million to conduct research on the possibility of making extracts from herbal plants. However, Dr Quijano said the two U.S. institutions asked that in exchange for the money, they would be assured that the products of the research would be patented by them. They wanted the researchers to give them the patents of extracts from lagunday (for asthma), sambong (for kidney problems) and tsang gubat (for abdominal pains).

Source: 'GATT foes hit Filipino Scientists', *Philippine Daily Inquirer*, p.7, September 29, 1994.

## Biodiversity and Gender Issues: RECOGNIZING COMMON GROUND

Janet Abramovitz

'In Indonesia, 1,500 local rice varieties have become extinct in the last 15 years alone, (Government of Indonesia, 1989), and, a recent survey of fruit and vegetable varieties in the United States revealed that up to 96 percent of the commercial vegetable varieties listed by the US Department of Agriculture in 1903 are now extinct.'

This information is presented in a chapter titled '**Biodiversity and Gender Issues: Recognizing Common Ground**' by Janet Abramovitz. Her chapter discusses the 'role women play in understanding and managing the living diversity of their surroundings, and the importance of that diversity to sustaining women and the families they support'. We present excerpts from her chapter in the recent Zed Books publication titled, **Feminist Perspectives on Sustainable Development**, edited by Wendy Harcourt.

### What is biodiversity?

'Biological diversity - biodiversity - is the sum of genes, species and ecosystems coexisting on Earth. As part of the evolving world, human beings are continually shaping their environment, for good or ill. Nature shapes humanity too. The struggle to survive in a particular setting has put nature's stamp on culture, giving rise to varied cultural forms - from social structure, diet and language, to land management practices such as nomadism, crop selection or shifting cultivation.

The term biodiversity was coined as part of a broad effort to shift the understanding of, and interest in, the environment away from single-species

perspectives. By using biodiversity as an organizing concept one could look at systems, how they function, what influences them, how they can be maintained, and where humans and their needs and interactions fit within these systems, it was part of an evolution to a more holistic approach. In essence, biodiversity conservation shifts from a defensive posture - that is, protecting nature from the impacts of development - to an offensive/proactive position seeking to meet people's needs from biological resources while ensuring the long-term sustainability of Earth's biotic wealth. (WRI/IUCN/UNEP, 1992)

### Losing biodiversity

Yet these resources are in jeopardy, and many of the reasons why biodiversity is in decline are also responsible for the decline in people's ability to achieve reasonable standards of living. While loss of habitats such as the tropical rainforest has gained widespread attention, other less glamorous areas are under much greater threat. For example, less than half of the temperate rainforests remain today, and they covered a very limited area to begin with - only 4 percent of today's tropical forest area. (Weigand, 1991; Haisla Nation and Ecotrust, 1991) Mediterranean climate areas, coral reefs, coastal fisheries and freshwater lakes are also in serious decline.

Loss of genetic diversity, especially apparent among crop varieties, has equally severe implications. Thousands of species (and innumerable subspecies) have been cultivated since the development of agriculture 12,000 years ago (Fowler and

Mooney, 1990), but today fewer than 100 species provide most of the world's food supply. (Prescott-Allen and Prescott-Allen, 1990) And within those 100 species, genetic diversity has been seriously reduced. For example, of the more than 7,000 apple varieties in use between 1804 and 1904 in the US, 86 percent have been lost. (Fowler and Mooney, 1990) The more recent introduction of Green Revolution, high-yielding, high-input varieties has resulted in the loss of traditional crop varieties. In developing countries, these Green Revolution varieties are now used on over half of the agricultural land planted in wheat, rice and maize. (Dalrymple, 1986; Timothy et al., 1989)

### Dangers of narrowing genetic diversity

Narrowing genetic diversity, especially in crops, can be disastrous because diseases and pests can move swiftly through genetically uniform stands. For example, Brazil recently experienced its worst outbreak of citrus canker because of genetic uniformity. (Griffith, 1991) Large losses were also experienced in the Soviet wheat crop in 1972 and the Florida citrus crop in 1984. (Plucknett et al., 1987) The potential for a more devastating loss continues. In an impressive display of genetic uniformity, nearly all the coffee trees in South America are descended from a single tree growing in an Amsterdam botanical garden 200 years ago. The origin of that coffee tree was the forests of southwest Ethiopia, which have virtually disappeared. (Fowler and Mooney, 1990) In Bangladesh, 62 percent of rice varieties come from a single maternal plant; in Indonesia and Sri Lanka the figures are even higher (74 and 75 percent). (WRI/IUCN/UNEP, 1992) Local varieties and ancestors could aid plant breeders in their efforts to protect commercial agriculture and help the small farmer maintain diverse cropping systems.

### Women's contribution to biodiversity

Cash-crop and kitchen gardens are an important part of women's strategies in providing for their families and securing income. Such gardens are also important storehouses of plant genetic diversity; diversity that is maintained for specific desired traits and for the pride and status derived from this skill. For example, among the

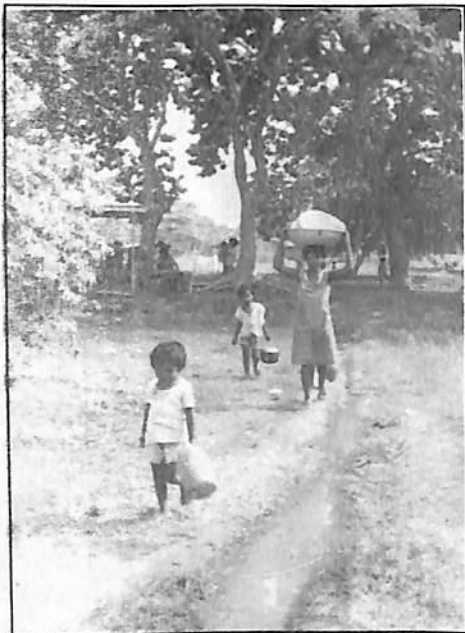


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Aguaruna Jivaro in Peru, manioc provides over half the calories in the diet, and makes up over three-quarters of the garden plants grown by women. It has been reported that as a result of their strategy of planting many types of manioc, 100 varieties are cultivated by Aguaruna Jivaro women and shared within the community. (Norem et al., 1989)

The importance of materials collected from off-farm, boundary and wastelands to women's coping strategies has been well documented, as have the forces restricting their legal access. (E.g. Fortmann and Rocheleau, 1985 to Falconer and Arnold, 1992) Because these resources usually require very little capital or external inputs, they are especially important to women and the poor for both home consumption and sale. Their knowledge about resources can literally be lifesaving information during lean periods or famine.

In rural communities in Laos, Ireson (1991) reported that in the eight villages studied, 141 different forest products were collected for sale or home use, with most gathering done by women. Certainly the value of traditional medicines to primary health care and their potential for the pharmaceutical industry is well-known (Farnsworth, 1988; Reid et al., 1993), although this is another aspect of traditional knowledge in which women's roles are poorly understood. In Ghana, most people depend on wildlife for most of their protein (Asibey, 1974) and women are the principal processors, distributors and marketers of bushmeat, including that consumed in urban areas. (Addo et al., 1992)



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## Women, biodiversity and national economies

It is clear that the goods that women collect, cultivate and harvest and process are vital to their families' health nutrition and income. Almost invisible is the fact that the products and revenues are also important parts of national economies. It has been reported that non-timber forest products (NTFP) in India accounted 'for nearly two-fifths of the total Forest Department revenues and around three-quarters of the net export earnings from forest produce' - and that the majority of workers in the NTFP economy are women. (Kaur, 1990) In Acre, Brazil, not only do women cultivate the food, spices and medicine grown near the house, but they also carry the primary responsibility for processing forest products. Because processed goods fetch a higher price in the market, the skills and knowledge women maintain are of great economic importance. (Kainer and Duryea, 1992) Estimates on the percentage of income derived from forest products vary by community (Hecht, 1993; Jodha, 1986; Kainer and Duryea, 1992; Kaur, 1990), but it is clearly a critical element in the livelihoods of households with access to these resources.

Resources collected from the wild are also important in developed countries, and the loss of those resources has social and economic costs. The destruction of rich estuarine ecosystems in the US cost \$200 million per year (1954-1978) in commercial and sport fisheries alone. (WRI/IUCN/

UNEP, 1992) And these figures do not even include losses to subsistence fisherfolk or social costs related to the culture disintegration of these fishing communities.

## Class and gender struggles: a threat to women and to biodiversity

There has been - and continues to be - a severe erosion in the vast library of indigenous knowledge as both resources and those who are most knowledgeable about them disappear. With the passing of elders who recall useful plants and animals that no longer exist, irreplaceable storehouses of wisdom in what Rocheleau (1991) calls the 'science of survival' are lost. And it is the women who retain more of this knowledge who continue to be overlooked. Even if resources themselves survive there is no guarantee that women can continue to count on even the limited access they now enjoy if gender and class struggles over resources intensify. Furthermore, there is no guarantee that women's knowledge will be passed to a younger generation. Because of increased time spent on other activities, displacement of families, devaluation of traditional knowledge in favour of more 'modern' knowledge, or disruption of the rhythm or fabric of social structures, less time is spent transmitting the intimate knowledge women and men have of their environments. (Wachiira, 1987)

People who care about women's lives should see the value in supporting efforts to sustain the Earth's biotic wealth. Those who are concerned about biodiversity should see that the world is on a collision course which presages environmental and social disaster unless women and their families receive an equitable share of resources.'

## Common threats to biodiversity and to women

'The same phenomena which are diminishing biodiversity are impoverishing women as well. These include

- \* the unsustainable high rate of natural resource consumption
- \* the narrowing of traded products from agriculture, forestry and fisheries, and the commercialization of many subsistence resources
- \* the failure of economic systems to value the environment and its resources or the value of women's unpaid labour and the failure to account for intangibles such as social stability, inter- and intra-

generational equity and self-sufficiency

\* the inequity in the ownership, management and flow of benefits from both the use and the conservation of natural resources

\* the deficiencies in knowledge and its applications

\* the promotion of unsustainable exploitation by legal and institutional systems.'

Source: 'Biodiversity and Gender Issues: Recognizing Common Ground' by Janet N. Abramovitz, in *Feminist Perspectives on Sustainable Development* ed. Wendy Harcourt, Zed Books Ltd., 1994, Copyright Society for International Development.