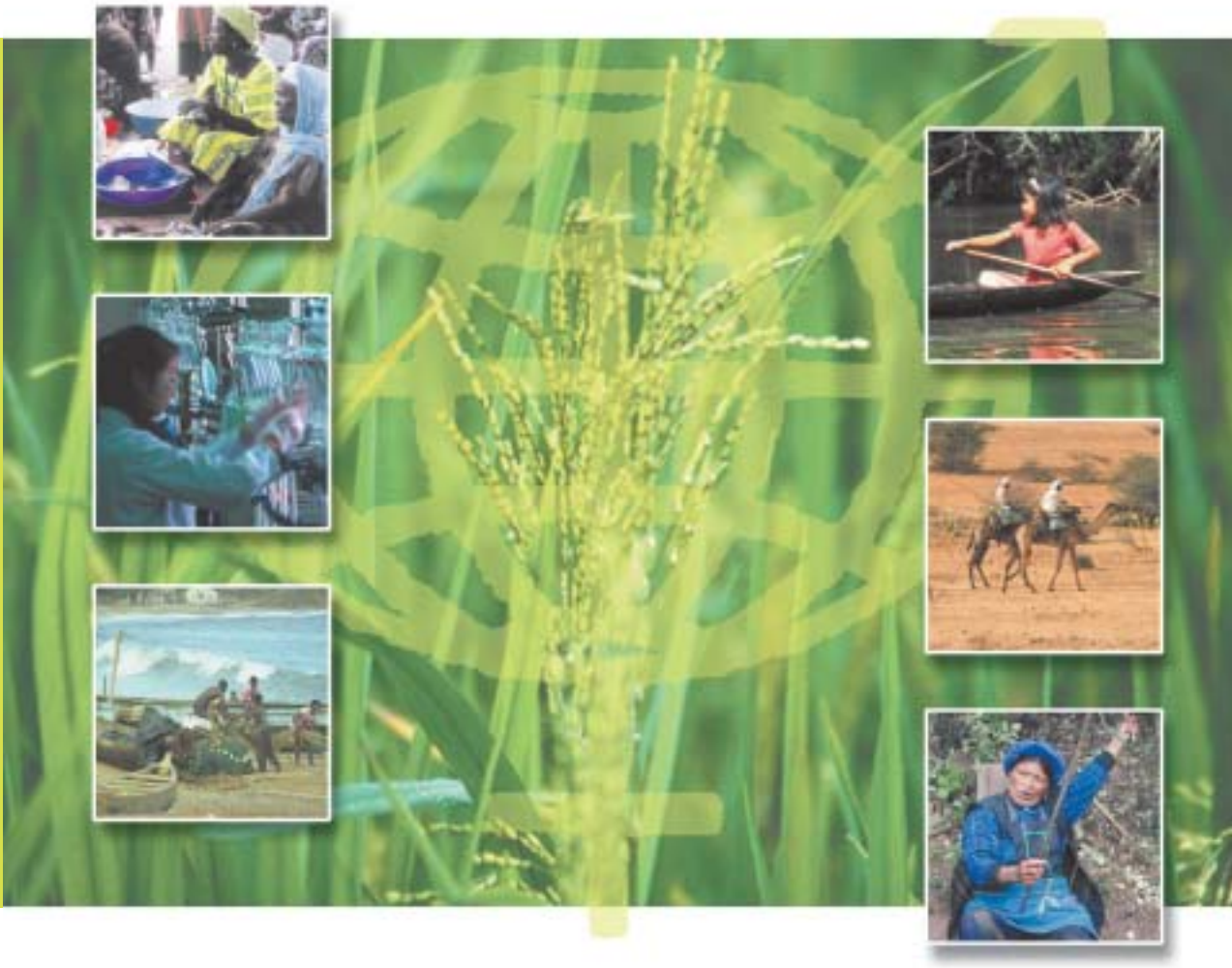

The Convention on Biological Diversity: Ensuring Gender-Sensitive Implementation

Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH

Published by

Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH
Dag-Hammarskjöld-Weg 1-5
65760 Eschborn / Germany

Division 42, Pilot Programme Gender
Dr. Stefani Klos
Telephone: +49 (0) 6196-79 1612
Telefax: +49 (0) 6196-79 7332
E-mail: stefani.klos@gtz.de
Internet: http://www.gtz.de/gender_project

Division 44, Project "Implementing the Biodiversity Convention"
Andreas Gettkant
Telephone: +49 (0) 6196-79 1375
Telefax: +49 (0) 6196-79 6190
E-mail: andreas.gettkant@gtz.de
Internet: http://www.gtz.de/biodiv

Staff responsible
Dr. Stefani Klos, Andreas Gettkant

Authors
Christine Schäfer, Martha Gutiérrez, Ludgera Klemp,
Gudrun Henne, Alice Müller

Translation
Margaret Clarke, Simon Huber

Edition
M. A. Torres

Photography
Andreas W. König (p. 6/12/20), Suhel al-Janabi,
Christine Schäfer, GTZ archives

Design
Stefan Mümpfer - grafic works -, 60316 Frankfurt

Printed by
Kasparek Verlag, Mönchhofstr. 16, 69120 Heidelberg

Eschborn 2002

ISBN: 3-925064-36-2

The Convention on Biological Diversity: Ensuring Gender-Sensitive Implementation

Eschborn 2002

Table of Contents

Acronyms 3

Preface 4

Summary 6

1 Key Issues Regarding Biodiversity from a Gender Perspective 9
1.1 Livelihood Insecurity and Time Constraints 10
1.2 Unequal Access to Resources and Benefit Options 10
1.3 Unequal Rights and Entitlements 11
1.4 Knowledge Gap 11

2 Interdependency between Gender and Biodiversity in CBD Work Programmes 13
2.1 Agrodiversity Ensures Survival 13
2.2 Biodiversity in Dry and Sub-Humid Lands 16
2.3 Forest Biodiversity 17
2.4 Marine and Coastal Biodiversity and Biodiversity of Inland Waters 18
2.5 Conclusion 19

3 Changes in Rules Governing Access to Genetic Resources 21
3.1 Women and the Traditional Right to Benefit from Use 22
3.2 Women as Stakeholders in Pharmaceutics and Biotechnology 23

4 Other Legally Binding International Agreements on Gender and Biological Diversity 26

5 Recommendations 29
5.1 How to Integrate Gender Aspects into the Implementation of the CBD 29
5.2 Action at the International Level 29
5.3 Action at the National Level 30
5.4 Action at the Local Level 31

References 34

Annexes
Annex 1: Innovative Projects from Peru and China 37
Annex 2: Gender Glossary 38
Annex 3: Issue Paper BIODIV 40

Acronyms

BMZ	Federal German Ministry for Economic Cooperation and Development
CBD	Convention on Biological Diversity
CGRFA	Commission on Genetic Resources for Food and Agriculture
CIAT	International Centre for Tropical Agriculture
CIFOR	Centre for International Forestry Research
DAD-IS	Domestic Animal Diversity Information System
FAO	Food and Agriculture Organisation of the United Nations
GATT	General Agreement on Tariffs and Trade
GEF	Global Environmental Facility
GPA	Global Plan of Action for the Conservation and Sustainable Utilisation of Plant Genetic Resources
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
ICAM	Integrated Coastal Area Management
ICCP/MOP	Intergovernmental Committee for the Cartagena Protocol/Meeting of the Parties
IPGRI	International Plant Genetic Resources Institute
IU	International Undertaking on Plant Genetic Resources for Food and Agriculture
IUCN	International Union for Conversation of Nature and Natural Resources
NGO	Non-Governmental Organisation
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SID	Society for International Development
TRIPs	Trade-related Aspects of Intellectual Property Rights
UNCCD	United Nations Convention to Combat Desertification
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UGA	University of Georgia, Athens, Georgia, U.S.A.
WIPO	World Intellectual Property Organisation
WRI	World Resources Institute
WSSD	World Summit on Sustainable Development
WTO	World Trade Organisation

Preface

At the major UN Conferences held in the 1990s, the governments of the world's nations committed themselves to respecting human rights and women's rights, reducing poverty, protecting the environment and working for sustainable development. One of the central outcomes of the 1992 UN Conference on Environment and Development in Rio de Janeiro was the concept of sustainability: sustainable development is only possible if economic, ecological and social aspects are reconciled. One important prerequisite for sustainable development is the equal participation of women.

Indeed, in the area of resource protection, women are the ones mainly responsible for using these resources, but they continue to have little control over resources as such. The Preamble of the Convention on Biological Diversity (CBD) – one of the three Rio Conventions – explicitly recognises the vital role that women play in the conservation and sustainable use of biological diversity, affirming "the need for the full participation of women at all levels of policy-making and implementation for biological diversity conservation." It thus takes account of the fact that women's knowledge and men's knowledge on biodiversity often differ, especially in developing countries. In most countries, women continue to have more limited access opportunities and access rights with regard to certain resources, for instance land. The benefits arising from the sustainable use of genetic resources continue to be distributed unevenly between women and men, a distribution that does not reflect their real contributions. Also, women and men have very different levels of influence on the formation of political opinions and on political decision-making, including in the area of biodiversity management. The experience and skills of women are either not taken into account at all, or only very inadequately.

The World Summit on Sustainable Development (WSSD) in Johannesburg (2002) will provide an opportunity to take stock, among other things, of the extent to which countries have implemented their declared political commitment to gender equality. In concrete terms, the question will have to be asked whether, and how, women's participation in decision-making and policy processes has increased compared with the situation ten years ago.

The German side has addressed existing deficits with regard to gender equality in the implementation of the Conventions and international agreements, and has used the efforts for further development of the CBD to introduce a gender-sensitive perspective into international negotiating processes. In addition, gender-specific pilot activities have been undertaken, as part of development cooperation in the field of implementing the Biodiversity Convention. The present brochure contains a description of the gender-specific challenges involved in implementing the CBD, and of the experience gained by German

development cooperation in this area. The brochure is intended to help prepare the World Summit on Sustainable Development in Johannesburg, which is expected to provide fresh impetus to sustainable development policies and, thus, also to gender equality in policy-making and decision-making processes.

Ingrid Hoven

Federal Ministry for Economic Cooperation and Development
(Division 412:
Environmental Protection, Natural Resources Management)

Summary

Food, clothing, medicine, fibre, timber and pharmaceuticals: we all heavily depend on biological diversity and this is especially true for the rural poor. In view of the growing world population, the need for products derived from biological resources will steadily increase. As more and more biotechnological methods are developed, more and more basic material – genetic resources – will be needed.

The loss of biological diversity has never been greater than in recent decades. Particularly poor women in developing countries are hard-hit by the damage to biodiversity. Because their livelihood and that of their children depend on natural resources directly, land degradation, desertification and loss of biological diversity affect their supply of water, firewood, food and medicine. At the same time, women are often the ones that use and cultivate, and thus conserve, a great range of biological diversity and the knowledge associated with it.

This interdependency is not adequately recognised and valued. Equal rights and entitlements are decisive for the full deployment of individual economic potential and for personal as well as family well being. In many parts of the world, however, social, religious and customary practices exclude women from land ownership and use. Few women

own land titles or have command over commodities and many struggle under legal uncertainty. The situation of female heads of household, especially of single women and widows, is difficult; e.g. often women cannot inherit. As a result of all this, women's livelihoods are endangered and they have lower incomes and social status. Women have tended to derive little benefit from the land reforms and modernisation of the farming sectors in developing countries. All in all, they have received little support in the way of advice, credits, technology or research up to the present.

In addition, gender continues to be neglected as the outstanding determinant of access to and control over resources and knowledge that it is, during implementation of the Convention on Biological Diversity (CBD). Thus, the most urgent task is to sensitise the convention's makers – the great majority of whom are men – to this issue. A first step in this direction is to increase the quota of women in the delegations working in the different bodies of the convention. Development programmes have to take account of the gender aspect in specific activities and, wherever necessary, women and their organisations should receive special practical and strategic support.

The link between gender relations and the conservation and use of biodiversity needs to be granted more attention. Research and studies can help to design projects and programmes in a more gender-sensitive manner so that they can reach their target. Thus our aim here is to further the debate on gender and the CBD.

The key issues regarding biodiversity from a gender-perspective are analysed in Chapter 1. Chapter 2 compiles gender-related issues referring to the CBD sectoral work programmes, i.e. agricultural biodiversity, biodiversity of dry and sub-humid lands, forest biodiversity, marine coastal and inland waters biodiversity. Chapter 3 addresses the position of women in traditional and in modern systems. It deals with institutional and policy issues, since effective biodiversity policies must tackle gender-based limitations in the rules governing access and rights. Other legally binding international agreements dealing with gender and biodiversity issues (Agenda 21, Global Plan of Action for the Conservation and Sustainable Utilisation of Plant Genetic Resources, International Treaty on Plant Genetic Resources for Food and Agriculture, Global Biodiversity Strategy) are presented in Chapter 4. Chapter 5 provides an overview of potential action areas. A range of recommendations on how the aspect of gender relations can be approached in practice makes this publication a valuable tool for development workers at different levels. The annexes provide two examples of projects in Peru and China where the role of gender is a key determinant for the studies undertaken, a glossary of gender-related terms and a brief issue paper on gender and biodiversity produced by the GTZ-BIODIV Project.

1 Key Issues Regarding Biodiversity from a Gender Perspective

A total of 180 countries have signed the Convention on Biological Diversity (CBD 1992), aware that safeguarding global goods like biodiversity requires more than just policy-making and legislation by individual states. The CBD's main objectives are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from the use of genetic resources. It fosters a new development paradigm based on ecologically sustainable development strategies and an enhanced role for women, acknowledging the fact that women play a paramount role in the conservation and use of biological diversity and thus should participate fully at all levels of CBD-related policy-making and implementation.

The loss of biological diversity is becoming the subject of increasing international attention. Every year, the earth's genetic wealth is irrevocably reduced by up to 10,000 species. Agrodiversity has declined by 75% since the middle of the 19th century and genetic erosion continues its advance. The very existence of countless local ecological systems is under threat. Thousands of varieties of rice, wheat, maize, and other basic foodstuffs have disappeared in the last few years. Half of all breeds of domestic animals registered in the Domestic Animal Diversity Information System (DAD-IS) of the Food and Agriculture Organisation of the United Nations (FAO) are now at risk of loss. The world's 17 largest fishing-grounds have reached the over-fishing limit or are already over-fished. Along with the loss of genetic diversity, knowledge about how to conserve and use biodiversity is also being lost.

A third of all forests has already disappeared and two-thirds of the remaining stock have undergone a change in structure. Wetlands and other wild, uncultivated regions are rapidly disappearing. Degradation of the forests implies high social costs; along with it comes the destruction of living bases providing food, fodder, fibre, dyes and health care. Three billion people are estimated to depend on traditional medicines at present as their main source of remedy against disease (UNDP 1999).

In terms of global food security, many plant genetic resources that have proved to be indispensable for the livelihood of impoverished and vulnerable communities are under threat. The conservation and management of genetic resources therefore becomes a pressing global task that cannot be confined to the action scope of isolated nation-states: safeguarding global interests lies beyond individual policy-making and legislation and requires international cooperation and regulations of the kind embodied in the CBD.

> In many parts of the developing world, poor communities able to draw at least half their food from forest products have never experienced a famine. That ability is now diminishing.
> *Source: UNDP 1999.*

One of the main causes of the destruction of biodiversity is the spread of modern agriculture. Intervention in complex natural processes also plays a key role: the wanton use of natural resources, excessive clearing operations, shortened fallow periods, overgrazing, destruction and degradation of forests and urbanisation, among others. Armed conflicts also lead to the destruction of plant species, as the International Centre for Tropical Agriculture (CIAT) has had occasion to verify.

1.1 Livelihood Insecurity and Time Constraints

Particularly poor women in developing countries are hard-hit by environmental and biodiversity destruction, since such destruction affects their ability to earn a living. Due to desertification and long periods of drought, many such women must travel ever-greater distances to fetch water or firewood. This sharply detracts from the amount of time they can dedicate to other productive and reproductive tasks. In deforested areas of Nepal, for instance, the time needed by women to collect firewood, fodder and water lies between 12 and 15 hours (Agrawal 1991). In addition, soil degradation and desertification mean reduced agricultural productivity. Such environmental degradation of living conditions produces environmental refugees, who are forced to leave their traditional homesteads in search of more fertile lands. This phenomenon especially affects Africa and Asia. According to estimates by the United Nations, 135 million people are at risk of becoming environmental refugees.

1.2 Unequal Access to Resources and Benefit Options

Uncertain rights of access to and ownership of natural and economic resources may hamper achieving CBD objectives and considerably restrict the scope of incentive-raising structures that encourage sustainable forms of use. Given the discrepancy existing between formal legal equality and the insufficient implementation of these rights, which leads to social inequality in many countries, women are always in danger of losing out even more in the distribution of commercial benefits arising from the use of biodiversity. It is not just that women's work is valued unequally. Material equality is also difficult to achieve due to the aforementioned discrepancies.

1.3 Unequal Rights and Entitlements

Equal rights and entitlements are decisive for the full deployment of individual economic potential and for personal and family well being. Equal status for women warrants a complete revision of how entitlements are distributed. In many parts of the world, provisions contained in customary law, religious precepts and social practices exclude women from land ownership and use. Often, only men have entitlements to property, income, legal livelihoods and so forth, plus effective command over commodities. The current theoretical debate about development is strongly influenced by the "entitlement approach" (see, for example, Dreze and Sen 1995). Since usually only very few women farmers own legally recognised land titles, most women struggle under legal uncertainty. The situation of widows is particularly difficult, since traditional norms regarding dependants often exclude women from the right to inherit. Following the death of their husbands, women often lose both their land and farming rights. As a result of these practices, women's livelihoods are under threat. They have lower income and social status than men. Women in developing countries have tended to derive little benefit from the land reforms and modernisation of the farming sectors in their countries. Titles to land are usually granted to males as heads of the household. A study of 13 land reforms in Latin America revealed that such programmes only took into account male-headed families (Quiroz 1996). All in all, women have received little support in the way of advice, credits, technology or research up to the present. In the forestry domain, for example, development projects usually concentrate on commercially useful trees, neglecting the "'five Fs' vital to women: food, fodder, fuel, fibre and fertiliser" (Agrawal 1991, p. 278).

1.4 Knowledge Gap

Women's knowledge and priorities concerning the use and conservation of biodiversity are often disregarded in environmental decision-making processes. In addition, a knowledge gap is widening between the sexes: men's knowledge is being lost as males become integrated into modern agriculture or migrate to the cities looking for work. When men leave their villages once a harvest is over, women and children suddenly become responsible for the care of fields and animals. They often lack adequate knowledge about production and have little access to training or credits and other facilities. Such trends are rapidly increasing, especially in south-eastern and eastern European countries and in China.

- Despite the wave of democracy, women everywhere do not enjoy the same opportunities for participation in public life as men. They constitute less than a third of administrators and managers – and occupy only 12% of parliamentary seats and 7% of cabinet positions.
- The human development achievements of women fall below those for men in every country.

Source: UNDP 1999.

2 Interdependency between Gender and Biodiversity in CBD Work Programmes

The following is a compilation of gender-related issues referring to the CBD work programmes listed below:

- Agricultural Biodiversity
- Biodiversity of Dry and Sub-Humid Lands
- Forest Biodiversity
- Marine and Coastal Biodiversity
- Inland Waters Biodiversity.

Instead of discussing the local level of the current activities involved in the work programmes, this chapter is intended to show why it is so important to consider gender-specific aspects when it comes to dealing with the ecosystems intervened through the work programmes. All these work programmes have not adequately considered gender aspects so far.

Little systematic knowledge exists yet about how women and men manage these ecosystems. Until now, most research has focused on agricultural production and only partially on forest biodiversity. Due to this limitation, the present document focuses primarily on agrobiodiversity, citing empirical evidence wherever possible. Other commonly related issues are addressed to a lesser degree. Research and the implementation of projects like those in Peru and China (see Annex 1) should provide substantial, gender-segregated information and impact analysis in every area, which will help to draw conclusions for a more just, sustainable and efficient implementation of the CBD in the future.

2.1 Agrodiversity[1] Ensures Survival

Humanity is wholly dependent on biological diversity: The International Plant Genetic Resources Institute (IGPRI) holds that 5,000 species are cultivated for food and household purposes, for making tools and implements and for medicinal purposes. According to FAO, about 75% of human food-consumption is obtained via agriculture and 25% via fishing, hunting and gathering. The impoverished rural population is 80% dependent on using biological diversity for survival. They extract from it domesticated plants, wild food plants, fuel, fodder, fibre, medicinal plants and raw materials for building or making handicrafts.

In every culture, women play a significant role in the household food security and in seeing to the family's health needs: they produce 80% of the food in Africa, 60% in Asia and 10% in Latin America. Women often cultivate seed, tend fields and kitchen gardens, gather fuel and fetch water, fodder and wild fruits from the forest. In poor rural households, seed is cultivated at home or it is obtained from relatives, neighbours and other members of the community. It can be assumed that 90% of the seed in use comes from seeds and germ plasma cultivated, selected and preserved by women. Women may well be the largest human group dedicated to conserving and developing plant genetic diversity.

Women make intensive use of biological diversity whether in the desert, the savannah, the highlands of the Andes or the forests. Once harvesting is over, women often conserve the seed until the next sowing, using traditional methods. In the Sudan, women

[1] The term "agrodiversity" is applied in relation to genetic resources used for food or agriculture. Agrodiversity is conserved and developed by people from all over the world dedicated to farming, herding and fishing.

produce over 90 fermented foods and drinks, some of the recipes for which are over 2000 years old (Badri and Badri 1994). In India, rural women know the medicinal properties of 300 types of trees. In some African villages, women use and conserve up to 120 varieties of plants and animals. They are important agents when it comes to preparing the soil, sowing and hoeing the fields, harvesting and selling surpluses at local markets. In sum, women's knowledge and use of ecosystems, plant cultivation practices, conservation processes, storage and the production of medicinal remedies is fundamental for a sustainable biodiversity management.

Potatoes originated in the Andes and thus these mountains are the hub of their genetic diversity. In the highlands of Peru and Bolivia, women cultivate seed for their own use. They play a key role in the conservation and development of Andean domesticated plants. Women also cultivate new varieties of potato, which they use for different purposes. A key part of the process is allowing potatoes to rot down before sowing, since this releases a combination of chemicals helping seed germination. Above all, high-quality seed is used for sowing, while spotted, very small or very large potatoes are either eaten immediately or dried (Tapia and de la Torre 1997). There are between 18 and 40 different varieties of potatoes, depending on the altitude or ecological zone. Often women know which varieties are fit to consume, which are fit to store and sell and which are fit to process or plant.

In their daily contact with natural resources, women have built up an extensive fund of knowledge and experience on how to use biological diversity. Women pass on their knowledge about plant breeding and the production of quality seed from generation to generation. Experience shows that older women continue handing their knowledge down to younger women, a process that is becoming more and more rare among men. There are also some critical aspects when it comes to knowledge:

- Women and men often know about different things.
- The type of knowledge women and men have about the same things can be very different.
- Women and men generally organise their knowledge differently.
- Women and men frequently preserve and transmit their knowledge in different manners (FAO 1996).

In some communities, women's status depends on the knowledge and responsibility that they demonstrate in the household and the community. Often seed cultivation, selection and storage are embedded within cultural and religious rites. Many communities are aware of the special value of seed. A case in point is that of the Bakasu in Kenya, where women bring seed into the family of the husband when they marry. Women in the Amazon are known to do the same thing. The bride brings her mother's cassava-varieties into the groom's family: "She [continues] to test and experiment with old and new varieties and discusses their qualities, planting or cooking potential with her new family" (Shiva 1996).

The FAO has pointed several times to the fact that key genetic structures are to be found within traditional agriculture, often in marginalised sectors. Women and indigenous communities are proportionally over-represented in such sectors, whereas men, especially from non-indigenous communities, are more often engaged in cash crop production using "modern" technologies.

In each ecosystem, various plants and animals ensure survival through periods of drought, flooding and other crises. These species may grow and live on rich or poor soil and they tend to be resistant to disease. The *in situ* conservation[2] of agrodiversity encompasses the cultivation of various selections of basic foodstuffs such as maize, potatoes, millet, beans, wheat and rice. These exist in a range of varieties, each adapted to a particular ecosystem. Women are often in charge of cultivating such products. In Ghana, for instance, women have bred late-ripening varieties of yam and cassava under in situ conditions, with a view to lengthening the harvest period and ensuring foodsupplies for their households. Knowledge about species and varieties is particularly important, in order to withstand periods of drought or other crises. The Global Plan of Action for the Conservation and Sustainable Utilisation of Plant Genetic Resources (GPA) adopted in Leipzig (1996) recommended extensive measures to promote *in situ* conservation, and therefore it should target women in particular.

The conservation of biological diversity in traditional settlement areas is crucial for impoverished rural populations. The loss of these resources will have a direct effect on the food security of present and future generations, for their reliance on locally adapted crops and breeds. Despite its great variety of functions and forms of use, agrodiversity is not sufficiently taken into account when it comes to making economic assessments. In addition, governments and international cooperation have long neglected the smallholding sector, one in which women play a key role. They have tended to focus, instead, on the modern agricultural sector.

Thus programmes geared towards improving livelihood security and minimising vulnerability, e.g. by promoting the transition from a subsistence economy to a market one in accordance with the cultural background, need to:

- Equitatively address women's and men's areas of action and knowledge.
- Attend to existing disparities in the access to financial resources (e.g. purchase of seed, fertilisers or pesticides) and take up the issue of land tenure.
- Strive to eliminate the polarity between cash and subsistence crops, making it more viable for women and men to earn an income, secure the livelihood of their families, diversify production and minimise risk.

[2] The term *in situ* means "in its natural environment".

"Genetic diversity is humanity's best weapon against poverty and food insecurity."
Geoffrey Hawtin, IPGRI Director General at IPGRI's 25th Anniversary celebration, 1999.

Nearly a third of the world's people – almost all of them poor – depend directly on what they can grow, gather or catch. And while everyone on earth ultimately depends on its natural systems, the poor are particularly vulnerable to degradation of those systems.
Source: UNDP 1999.

In view of the growing erosion of agrodiversity, many countries have begun conducting national inventories of the domesticated plant and animal genetic resources used for food and agriculture – and also of related wild species, ecosystems and the traditional knowledge associated with these. Gender analysis in this field shows very clearly that knowledge about biodiversity and its use is unevenly distributed between men and women. It is becoming evident to some that the small-holding sector has been politically neglected despite the fact that it constitutes an important genetic pool. In practice, the globalisation of the food system and the corresponding way in which policies and legislation are framed (e.g. through patent regulations or through the concentration on very few species and varieties) undermine the sector's foundations. This is bound to have direct impact on the food security of present and future generations.

The World Trade Organisation (WTO) has great influence on the future development of the global food system. It enforces the General Agreement on Tariffs and Trade (GATT), which regulates the marketing of agricultural products, the liberalisation of world trade, protective measures for local foodproduction and the elimination of agricultural subsidies. Article 27(3)b of the Trade-related Aspects of Intellectual Property Rights (TRIPs) agreement regulates the patentability of plants and animals. These regulations directly and indirectly affect the agricultural sector by altering the possibilities of using and protecting genetic resources. This has effects on both women's situation and agrodiversity. Foreign demand for construction timber, agricultural and wildlife products may increase the pressure on natural resources and cause changes in habitat systems.

In recognition of the strategic importance of plant genetic resources to food and agriculture, and in view of the worldwide decline of diversity in fields, ecosystems and gene banks, the GPA, adopted by 150 countries in 1996, calls for the creation of appropriate strategies linking *in situ* conservation with agricultural development strategies. Here the focus of attention is on integrated approaches that adequately combine tried-and-tested elements of traditional knowledge, innovation and practice with modern technologies. The GPA expressly refers to the role of women in different fields of action. The importance of women's contribution to production and resource management in rural households, to the processing of crops and as a source of information on the feasibility of *in situ* conservation and management practices is recognised, but it is not adequately assessed yet.

Biodiversity is the means of livelihood and the means of production for poor people who have no access to other assets and productive resources. For food and medicine, for energy and fibre, for ceremony and craft, poor people depend on the wealth of biological resources and their knowledge of a diverse biosphere. Biodiversity helps poor people survive in times of scarcity.
Source: UNDP 1999.

2.2 Biodiversity in Dry and Sub-Humid Lands

There is a close interdependency between poverty, soil degradation and loss of biodiversity in the areas addressed by this programme, which not only pertains to dry and sub-humid lands but also to grasslands, savannahs and

areas with a Mediterranean climate. The problems encountered in dry and sub-humid areas often have worse effects on women and children than on men, as men often migrate leaving their families behind. Worldwide, women carry out 60-80% of the food production in dry and sub-humid lands.

The use of agricultural biodiversity and natural resources differs sharply in dry and sub-humid lands. These ecosystems represent the areas of origin of most domesticated plants and animals. The work programme on dry and sub-humid lands is therefore closely connected to the programme on agricultural biodiversity.

In many drylands, gender roles are distributed in the following way: women and children stay in permanent settlements or tents, taking care of small livestock, farming the land and taking over the processing and selling of meat and dairy products. Men, particularly in Africa's dry expanses, roam the land with herds of cattle, camels etc. in search of water and fodder, often for months on end. The collection and use of water and other biological resources (medicinal plants, resins, firewood, and non-timber forest products) tend to be in female hands. Non-timber forest products play an important role in the various ecosystems and this is usually in the female domain. These are covered in the next chapter on forest biodiversity.

Large herds of wild animals often live(d) in drylands and savannahs. While hunting has traditionally been a male domain almost everywhere in the world, trapping (at least the trapping of small animals) and game breeding is traditionally a female domain. In Côte d'Ivoire and West Africa, for example, 99% of the trade in meat from wild animals is in the hands of women (Caspary 1999).

Gender-specific measures are especially important in dry and sub-humid areas, because food security is even more critical here than in other areas, due to desertification processes. Women and children, in contrast to men, often do not have the possibility to escape from threats to food security by migrating. Thus changes and promotional measures have a very different impact on women and men. This, however, is not widely recognised and a great work in terms of persuasion still has to be carried out. These issues should jointly be addressed by the CBD work programme on dry and sub-humid lands and by corresponding policies and programmes of the UN Convention to Combat Desertification (UNCCD).

2.3 Forest Biodiversity

Women have different priorities than men with regard to the use of forest products. This is associated to differences in tasks and gender needs. For example, women often use specific trees that provide fuel, fodder and raw materials for medicinal preparations, and fruits and leaves to feed their families. In contrast, men tend to favour commercial types of trees (e.g. building timber) or non-timber forest products (e.g. the bark of *Prunus africana* trees, in strong demand by pharmaceutical companies in industrialised nations). Trees and bushes in rural areas can greatly differ in significance for men and women. They might be viewed from a commercial perspective or in terms of whether they provide essentials for the home.

Around the world, women harvest and process non-timber forest products for sale. For the poor women of Maranhao, Brazil, extracting palm kernels from the babacu palm is their single most important source of income. The activity involves over 300,000 families. Women in Botswana, India, Malaysia, and many other countries weave baskets, mats, and plates made of forest products. Women also collect or process wild nuts and fruits, medicinal plants, and palm hearts.

These activities provide employment and incomes. However, in most cases the women get low returns on their labour for each hour they spend and they ▸

typically use very rudimentary and laborious processing technologies. Many times men end up controlling most of the proceeds. Much of the work goes on at home or in nearby forests, fallows, and home gardens. That allows women to combine their income generating activities with child raising and other domestic chores, but can also keep them politically and culturally isolated and deprive them of access to jobs and products located farther away.

Unless they are careful, projects designed to encourage the processing and sale of non-timber forest products can actually have a negative impact on women. When machines replaced the production of hand-stitching of sal plates in India, men displaced many of the women and left them without work. In another case from India, promotion of a formal forest management plan to promote non-timber forest product extraction also led to men taking over what had been primarily an activity for women. Similarly, women were unable to participate in a galip nut project in Papua New Guinea because the project centralised the processing activities in a town distant from the women's households.

On the other hand, when projects include specific components for women this can help them increase their political power and their ability to defend their economic interests. In Ghana, women have enthusiastically embraced the creation of a leaf gatherers association that has strengthened their ability to negotiate with the forestry department and their political influence within their villages. Over 1,300 women farmers in Uganda benefited from a shea butter project designed specifically for them.

Source: Neumann and Hirsch 2000.

Since poor women usually do not own land or money, they tend to depend on forest products such as wild plants and animals both for consumption and as a source of income. These products include fruit, spices, mushrooms, nuts, natural medicines, fish, molluscs and insects. Many female incomes depend on the availability of wild fibre-plants to make baskets and mats. Tribal women in Andhra Pradesh (India) live from the sale of tamarinds, besom, mushrooms and cigarettes made of wild tendu leaves (bidis). According to FAO, they earn up to half the family income from the sale of non-timber products. Therefore the distribution of income from forest products has a large influence on gender-specific interests in reforestation measures and on other measures taken to promote the conservation of forest biodiversity.

2.4 Marine and Coastal Biodiversity and Biodiversity of Inland Waters

Three to five hundred million people in developing countries depend either directly or indirectly on fisheries for their economic well being. Typically, around 80% of the population living from fisheries are among the poorest part of society; about 60% of people in developing countries supply their need of protein through fish. Economic activities related to the sea are thus economically and socially significant.

Experiences from Central America show that women in the region often participate in various fishing activities (catching, small-scale processing, industrial processing and selling) (Aguilar and Castañeda 2000). They usually fulfill an auxiliary function, either as unpaid "employees" of their husbands, fathers or brothers, in the case of small-scale fishing, or as workers in the industrial chain of production. Fish products expire quickly and thus their processing also needs to be carried out quickly. Especially small-scale fishing has a very limited cooling capacity. Women in many regions carry out this work, which demands a high level of organisation. They also participate abundantly in the sale of fish products. However, women tend to be excluded from the decision-making processes. They do not attend the meetings of fishery collectives (women are usually not formal members) and thus find it difficult to advocate their interests. Fishing projects are exclusively managed by men and are also almost exclusively geared towards men. Women's partici-

pation in fishing activities is neither socially recognised nor financially compensated.

In Mauritania, on the West African coast, artisan fishing is also initially men's work, though women take over the processing stage. This primarily involves picking and processing roe, which is sold to Europe at high prices, and then processing the leftovers into dried fish. Among the Mauritanian ethnic groups whose livelihood is fishing, it is the men who sell the unprocessed fish, while women are responsible for selling fish products. They can also dispose of the income earned in this way, at least where selling fish products is not organised by the state.

Women are also often involved in activities not directly linked to fisheries in coastal and river shore areas, for example, the collection of mussels and crabs. This type of income generation is rarely given consideration in development projects active in coastal and shore zones. Thus the women carrying out these time-consuming and arduous tasks rarely get to enjoy technical advances and their work remains difficult. It is chiefly men who carry out commercial aquaculture.

Fishing is seasonal work in many regions. Periods of underemployment fluctuate with periods of higher workloads and incomes. This might have a bigger impact on women than on men, e.g. in connection with childcare. Communities living from fishing rarely have access to agricultural land. Once again, since women are usually responsible for feeding the family, they must shoulder a great responsibility. Where land is available, it is used intensively for agriculture. In the very fragile coastal regions, this often has negative consequences on the ecosystem, e.g. the lowering of the groundwater table or the destruction of mangrove forests.

In development projects along marine and coastal areas, the issue of gender very slowly gains momentum. Gender issues were identified as one of the necessities and indicators for "wise practices" at a cross-sectoral workshop on Wise Coastal Practices for Sustainable Human Development (United Nations Educational, Scientific and Cultural Organisation (UNESCO), 30 Nov. – 4 Dec. 1998). M. Fortes provides a list of 12 "wise practices" in coastal management and then analyses, in tabular form, the extent to which these have been adopted in a number of Integrated Coastal Area Management (ICAM) sites in the Philippines: The best practice "gender issues" was applied in four out of nine sites only (UNESCO 2000).

Where inland waters are concerned, men and women also have contrasting roles in the use of biological diversity. Women often use different fishing techniques and fish in other areas than men. In the tree savannah regions of Guinea, women fish in swamps resorting to natural poisons or nets. Men fish with spears in lakes and rivers; women use nets. Fishing is the main source of income for women, while it is only a supplementary source for men. This implies contrasting degrees of dependency on the resources fish and freshwater ecosystems and thus a different reaction to changes. The same holds true for the other biological resources in this ecosystem.

2.5 Conclusion

These very different patterns of usage show to what extent gender roles can differ when it comes to conservation and the use of biological diversity in the various ecosystems. Until now, these factors have not been suitably addressed while advancing the work programmes linked to the various ecosystems. Only a few development projects and programmes integrate gender-specific aspects into the design of their measures. Recommendations on how the aspect of gender could be taken into account more effectively are provided in Chapter 5.

3 Changes in Rules Governing Access to Genetic Resources

The CBD recognised sovereign rights over genetic resources and established new international rules on access, which are subject to the principles of prior informed consent and the sharing of benefits (Articles 3, 8(j) and 15). This shows a shift from the concept of "unrestricted" or "free" access to a concept whereby access is facilitated by the resource providers within the framework of a system for benefit sharing; be it on a bilateral basis or in a multilateral system to be implemented under the International Treaty on Plant Genetic Resources for Food and Agriculture.

The CBD expressly requires the consent of provider countries regarding access agreements. Such agreements are to be negotiated in accordance with the principles of mutual agreement and prior informed consent.[3] In addition, the CBD requires that benefits, innovations and practices be shared with holders of knowledge (Article 8(j)).[4] These holders are in many cases women. With its qualitative change to the rules for access (shared access), the CBD aims to create incentives encouraging the sustainable use and conservation of plant genetic resources and to ensure that compensatory benefits flow back to local and indigenous populations. Given their role as managers of plant genetic and small livestock resources, any new regulations are bound to greatly affect the interests of women.

Along with the sovereign right of control that states have over their own genetic resources, comes the need for rules about access and mechanisms for benefit sharing. In most developing countries, no legislation regulating the access to genetic resources exists yet. What is involved here are the legal grounds for intervention in complex social, environmental and cultural systems, with free and informed consent from the communities affected. One of the challenges faced is formulating mechanisms to protect collective intellectual property rights and safeguard local and indigenous communities' rights of authorship over genetic resources, biotechnologies, gene banks, and knowledge about biodiversity.

Industrial agriculture, modern-day plant breeding, existing intellectual property rights regimes and patent systems all ignore the contribution made by generations of farming men and women who have conserved plant genetic resources and maintained wild species, ecosystems and natural environments. Furthermore, the transfer of technology to developing countries is subject to unfair hindrance. Together with the appropriation of genetic resources, industrialised countries have greatly profited from traditional knowledge. Since long ago, traditional medicine had already made use of a substantial part of the agents now integrating modern plant-based medicines. The extent to which these products have become commercialised shows the economic importance of indigenous knowledge. The appropriation of genetic resources has often occurred without the knowledge or consent of the men and women farmers who produce them; this is known as biopiracy.

The main food staples cultivated and consumed by the vast majority of the world's population have their origins in the tropical and sub-tropical zones of Asia, Africa and Latin America. The main crops on which humanity now depends have been bred and domesticated by farmers over the centuries.

Source: Flores 1998.

[3] These principles refer to the providers and users of biodiversity.

[4] Agenda 21 also calls for "fair and equitable sharing of benefits and results of research and development in plant breeding between the sources and users of plant genetic resources" (Chapter 14.57). Article 15.4(g) reiterates this demand, underlining the contribution made by women and by indigenous people and communities.

In order to ensure the equitable distribution of benefits accruing from traditional knowledge, these benefits must be acknowledged in the relevant trade agreements (such as TRIPs) and in regulations on intellectual property (the activities of the World Intellectual Property Organisation (WIPO)). Another possibility is to develop new *sui generis* systems. The term *sui generis* means "of its own kind" and in this context it implies finding alternative legal systems for protecting innovations that communities have developed and cannot be protected under the western system of patent law, for technical and/or political reasons.

The intellectual property right implies four things: private rights as opposed to common rights; recognition of knowledge and innovation only when they generate profits, not when they meet social needs; innovation in a formal institutional setting rather than embodiment of indigenous knowledge; and international perspective rather than domestic and local use.
Source: Shiva 1997, quoted from UNDP 1999.

3.1 Women and the Traditional Right to Benefit from Use

Genetic resources used for livelihoods are the inheritance of men and women from local and indigenous communities whose existence depends on agriculture, fishing, hunting, forestry and the utilisation of non-timber forest products. It is important that formally recognised rights with respect to intellectual property and patents should be extended through new legal provisions allowing for collective intellectual property rights. Such provisions would, for the first time, take account of the fact that particular achievements are often merely the last link in a long chain of knowledge and experience that men and women in the various regions of the world have gathered together from generation to generation.

The CBD member-states requested the FAO Commission on Genetic Resources for Food and Agriculture (CGRFA) to bring the International Undertaking on Plant Genetic Resources for Food and Agriculture (IU) (1983) into line with the Convention, as well as to develop mechanisms for protecting traditional knowledge and entitlement to benefits based on Farmers' Rights. This process concluded with the adoption of the International Treaty on Plant Genetic Resources for Food and Agriculture in November 2001. The FAO Commission has also called for the participation of the relevant target groups in every decision-making process relating to the conservation and sustainable use of plant genetic resources in food and agriculture. The Commission suggests ascertaining the fair distribution of benefits through mechanisms that bring direct and indirect advantages to farmers in developing countries:

- Technological transfer and training.
- Capacity-building of institutions and staff.
- Development of systems for information exchange and technical/scientific cooperation.
- Compensation funds for breeders providing germ plasma, financed with profits accruing from the commercial exploitation of genetic resources.

The work of the FAO Commission is extremely important because it sets a course for the future. Special attention must be paid to the question of distributive fairness between men and women. Implementing "Farmers' Rights" in a way that differentiates between the genders and thus recognises women's contribution to the conservation and sustainable use of biological resources will also create special incentives for women to conserve biological diversity.

3.2 Women as Stakeholders in Pharmaceutics and Biotechnology

Plant and animal genetic resources are raw materials for industrial biotechnology. Until now, producers of raw materials have had almost unrestricted access to them. The projected annual turnover in genetically modified plants for the year 2010 is USD 20 billion (Manicad 1999). In the medical sphere, 100 billion US dollars' worth of products made from wild plants and animals are produced every year (UNDP 1999). A good deal of the profits of large-scale pharmaceutical, agricultural and food companies can be traced back to products based on traditional methods and knowledge. Women have subsidised this commercialisation through their contribution to the conservation and development of biological diversity (Flores 1998).

Women tend to be more actively involved than men in the "household" economy, which typically involves use of much wider diversity of species for food and medicine than are traded in regional or international markets.

Source: WRI, IUCN, UNEP 1992.

Of the top 150 prescribed drugs in the U.S. in 1993, 57% contained at least one major active compound that was derived, directly or indirectly, from biological sources... However, the chief commercial beneficiaries of genetic and biochemical resources found in developing countries have been developed countries, and pharmaceutical products based on traditional medicine have returned less than .0001% of their profits to the local plant users who assisted preservation, research and discovery efforts. While there is little financial incentive to these communities to maintain their medicinal practices, their own survival may depend on it. Indeed, one recent estimate states that 80% of the developing world relies on traditional medicines for primary health care. To help assure that indigenous communities maintain an opportunity for development without rejection of their traditional practices, it is necessary to secure their rights to these resources and to compensate them for the benefits derived from access to biological resources and knowledge

Source: Guerin-McManaus et al. 1999.

The extension of patent law and intellectual property rights to genetically modified organisms has enhanced the position of supremacy enjoyed by genetic producers vis-à-vis farmers in developing countries. It has also increased farmers' dependency on non-regenerating seeds. Up to now, the "individual property" and "collective property" of local and indigenous communities have not been treated equally. Very few firms indeed acknowledge the value of traditional knowledge and/or reach agreements with the local and indigenous communities affected.

Modern biotechnology has revolutionised the global food system. In order to restrict use by farmers, "killer seeds" are being produced via terminator technologies. The International Seed Federation is expecting a global turnover of USD two billion for the year 2000 alone. Hybrid varieties and killer seeds are destroying the livelihoods of many farmers. The consequences of this are dependency on the market and on seed cultivators that protect their commercial interests with patents.

The continued existence of traditional forms of seed cultivation and seed exchange is placed at risk by such developments. This has negative effects on local systems of food and income security. Gender-desegregated studies on the management of plant genetic resources clearly reveal the gender dimension of work, knowledge and management.

When processes and products based on gene technology are used in developing countries, far-reaching ecological, socio-economic and socio-cultural effects may result. These effects are closely linked with one another. Under today's global economic conditions, they tend

to be essentially negative for the broad part of the population. In the ecological domain, such negative effects include, for example, loss of species and habitats. This is particularly troublesome in regions where cultivated plants originate, given that the latter's inter- and intra-species diversity represents a huge potential as far as long-term food security is concerned.

Modern technology can also adversely influence the population's socio-economic situation, both indirectly through negative ecological effects and directly through a range of phenomena described below: Gene technology usually requires a high capital outlay and specialist knowledge. It is often not economically viable in smallholder-based agricultural structures. The foundations of village life may also be impaired by new technologies. The danger exists, for example, that due to the way roles are traditionally allocated, women will be particularly affected by the use of modern technologies, since in many cultures these are a "male preserve". In addition, the purchase of genetically modified products (e.g. seed) may create severe dependencies on seed-producing biotechnology firms.

The CBD explicitly refers to biosafety and calls on contracting states to ensure that modern biotechnological methods[5] do not pose a threat to biodiversity. The Cartagena Protocol, finally adopted in early 2000 after arduous negotiations, allows the contracting states to impose import restrictions on a precautionary basis, even where there is no conclusive proof of possible dangers. Alongside socio-economic issues, however, gender aspects were not sufficiently taken into account in the Cartagena Protocol. As long as socio-economic issues are not adequately addressed in the Cartagena Protocol, there is little that can be done regarding the consideration of gender aspects. At the Intergovernmental Committee for the Cartagena Protocol (ICCP) / Meeting of the Parties (MOP) and other international biosafety meetings, women – through their organisations active around gender issues – should become more actively involved in the further development of the Protocol.

[5] Biotechnological methods: Any technological application that uses biological systems, living organisms, or derivatives of these, for particular products or processes. The scope of biotechnology thus ranges from 'classical' processes such as the brewing of beer and the making of yoghurt (fermentation), through microbiological processes such as the synthesis of natural material, right up to genetic modification.

4 Other Legally Binding International Agreements on Gender and Biological Diversity

Internationally binding agreements provide an important framework for action in terms of getting gender interests respected where biodiversity is concerned. For this to happen, links need to be established between the CBD and other conventions, documents and global plans of action. These then need to be integrated into an overall action-based context. Taken together, the agreements in question form a normative framework within which legislation and policies can be formulated. The documents quoted as follows are of particular relevance in this context.

The **Action Programme contained in Agenda 21** (1992) points to the contribution that women make to safeguarding biodiversity, in its comments on the recognition of traditional practices and knowledge. Governments are called upon to ensure that local and indigenous groups share in the commercial benefits accruing from the use of traditional methods and knowledge. Chapter 24 – Global Action for Women towards Sustainable and Equitable Development – is devoted to the new development paradigm. It begins by observing that equal status for women is vital for the successful implementation of Agenda 21.

In Section 24.2 (c), governments are called upon: "To consider developing and issuing by the year 2000 a strategy of changes necessary to eliminate constitutional, legal, administrative, cultural, behavioural, social and economic obstacles to women's full participation in sustainable development and in public life"; 24 (f) calls for these objectives to be translated into clear strategies: "[Measures must be taken to] formulate and implement clear governmental policies and national guidelines, strategies and plans for the achievement of equality in all aspects of society, including the promotion of women's literacy, education, training, nutrition and health and their participation in key decision-making positions and in management of the environment, particularly as it pertains to their access to resources, by facilitating better access to all forms of credit, particularly in the informal sector, taking measures towards ensuring women's access to property rights as well as agricultural inputs and implements."

The **Global Plan of Action for the Conservation and Sustainable Utilisation of Plant Genetic Resources** (GPA, 1996, see Section 2.1) draws the attention of the international community to the fact that the role played by women in the conservation and development of plant genetic resources has "occasionally" not been recognised. Article 307 calls for on-site training of rural women. The Leipzig Declaration expressly points to the contributions of rural men and women, and of local and indigenous communities, to the conservation and improvement of plant genetic resources. This document affirms that an equitable distribution of the benefits accruing from the use of traditional knowledge, innovations and practices is a desirable goal. FAO has proposed a strategy for implementing the gender aspects of the Global Action Plan[6].

[6] The strategy seeks to support CBD member-states in the implementation of the Leipzig Action Plan. Essentially it follows three goals: documentation of women's contribution to the conservation and management of genetic resources; promotion of sustainable cultivation; conduction of research projects into gender-differentiated contributions to the conservation and use of plant genetic resources.

The CGRFA is a permanent governmental commission charged with securing multilateral consensus on unresolved issues in the area of agricultural biological diversity. FAO[7] provides the Secretariat for the Commission, which undertook a revision of the IU in order to ensure it conforms to the CBD. This task was completed in November 2001, with the adoption of the **International Treaty on Plant Genetic Resources for Food and Agriculture.** Among other things, the reviewed IU clarifies and regulates the following matters:

- Access to plant genetic resources for food and agriculture in a multilateral system.
- Recognition of the role of men and women farmers and plant-breeders, and of indigenous and local communities, on the basis of "Farmers' Rights".
- Mechanisms for the fair and equitable distribution of the benefits of use.

In its section on Women and the Environment, the GPA (Articles 248, 249, 250) points to the extreme imbalance between women's responsibilities in terms of nature conservation and the disadvantages and legal insecurity to which they are subject: despite their key role in the conservation and sustainable management of natural resources, women are underrepresented in all major planning and decision-making. The GPA calls on governments, non-governmental organisations (NGOs), multilateral organisations and the private sector alike to work towards the achievement of the following goals:

- Involvement of women in all planning and decision-making processes relating to the environment.
- Elimination of all factors hindering women in the task of managing natural resources in a sustainable fashion.
- Preservation of the traditional knowledge and skills used by women in handling biological diversity.
- Recognition of women's rights over the natural resources that they manage and entitlement to dispose of these.
- Drafting of national laws and strategies for ensuring women's participation in the benefits accruing from biological diversity.
- Protection of the collective intellectual property rights of women.

The capacities of women as biodiversity managers cannot be fully realised until women are freed from legal and social discrimination – a task still before many countries.

Source: WRI, IUCN, UNEP 1992.

The **Global Biodiversity Strategy** is also of relevance to CBD implementation, although it is not legally binding. It was jointly formulated by the World Resources Institute (WRI), the International Union for Conversation of Nature and Natural Resources (IUCN) and the United Nations Environment Programme (UNEP). Within the framework of the Plan of Action for the Conservation of Biodiversity, governments and international organisations are summoned to strengthen the role of women. As major objectives, Activity 26 cites: "The participation of women in all political decision-making processes relating to the environment; the involvement of women in the planning and conduct of projects; access to property rights and ownership rights; greater account to be taken of women in all types of training measures."

[7] It was under the Commission's direction that the report on the State of the World's Plant Genetic Resources was drafted and that the International Technical Conference took place in Leipzig – successfully culminating in the issuing of the Leipzig Declaration and the Global Plan of Action.

5 Recommendations

5.1 How to Integrate Gender Aspects into the Implementation of the CBD

The CBD is undergoing a continuous process of development and adjustment during the Conference of the Parties and the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) meetings. Nevertheless, the contracting parties have not as yet sufficiently fulfilled the commitment expressed in the Preamble, to recognise the role of women and to ensure the "full participation of women at all levels of policy-making and implementation for biological diversity conservation". Gender aspects have started to be considered only recently, e.g. in the preparation and adoption of the working programme about Article 8(j) on traditional knowledge, at the Fifth Conference of the Parties in Nairobi (May 2000). In general, the integration of gender aspects into the implementation of the CBD is still far from being complete. This holds true for international and multilateral levels as well as for national and local levels. Nevertheless, the discussion on gender and the CBD should not yield another thematic area, but rather highlight the value added by systematically taking into consideration gender issues when tackling the different areas of scope of the CBD, both thematic and cross-cutting ones. The following aspects are particularly relevant for the integration of gender aspects into the CBD:

- Building and strengthening relevant human and institutional capacities.
- Development of programmes and policies on the basis of gender-desegregated data.
- Building linkages between the various levels through horizontal and vertical networking and communication on gender aspects in CBD implementation, securing the rights over resources and intellectual property for both women and men.

A structure-oriented policy in the field of biological diversity requires holistic, interdisciplinary and multisectoral approaches in all relevant sectors. Integrated strategies such as the ecosystems approach of the CBD need more coordination than traditional "single issue" projects. The recognition and implementation of a gender perspective, therefore, requires the commitment of all stakeholders: governments, NGOs, the private sector, communities and households. If gender roles are overlooked, well-intended strategies can miss their goal or even influence the situation of women negatively. Experience shows that just more involvement of women as target groups and beneficiaries of programmes cannot achieve the success of projects. Instead, empowerment of women on all levels of decision-making as well as an equitable influence in planning and implementing programme measures must be guaranteed. To make this a reality, all stakeholders need to have unrestricted access to information. They also need the right of free expression and transparent decisions.

5.2 Action at the International Level

The conceptual design of multilateral regimes increasingly takes place through linking direct and indirect democratic expressions of interests. Women have to be involved in all decision-making processes, during all stages of multilateral regime building (agenda setting, discussion and operationalisation, implementation, monitoring and follow-up). Projects and programmes should monitor and follow-up their impact on the roles of men and women. This can be achieved through the following activities and initiatives:

- Creation of a gender focal point (for advising on and monitoring gender-related issues in the implementation of CBD).

- Construction of a gender-desegregated data basis (in order to compare men's and women's participation throughout the process).
- Establishment of a gender monitoring/ evaluation system for all kinds of activities.
- Review of access and benefit-sharing arrangements according to gender (case studies).
- Consideration of the gender perspective contained in the CBD handbook and guidelines.
- Evaluation of Global Environment Facility (GEF) proposals and projects according to gender criteria.
- Linkage of CBD with relevant documents and initiatives for the advancement of women.
- Procurement of gender balance in rosters of experts.

Protection of the traditional knowledge of local and indigenous communities is highlighted in the working programme, Article 8(j), and explicitly includes the contribution and rights of women. Now the implementation of the programme also has to be ensured in this respect.

A fair trade policy can provide the context to include incentives for the protection and sustainable use of biodiversity, as well as for benefit sharing and intellectual property rights to traditional knowledge. Fair trade structures have substantially contributed to stimulating the social responsibility of retailers and consumers. Greentrade organisations adhere to the principles of ecological trade (use and support of ecologically oriented projects, e.g. in the sectors of natural medicine and cosmetics[8]). At the same time, the position of women and men can be strengthened through their integration into fair trade structures.

The Biosafety Protocol, which has been ready for ratification since May 2000, does not take gender aspects into account, even though the use of gene and biotechnology and other modern technology has a different, often more negative, impact on women than on men. Therefore, women are to be suitably consulted during the implementation of the Biosafety Protocol, so that their needs and ideas may be integrated into the implementation process.

Regional cooperation facilitates joint strategies for the protection of biological diversity, the development of institutional research and training capacities, technology transfer as well as shared rules of access and benefit-sharing mechanisms. Gender aspects should be aptly considered in the promotion of regional cooperation and exchange of experiences.

5.3 Action at the National Level

Wherever social inequality characterises a society, the participation of given target groups does not necessarily imply that all its members may participate equally in projects and programmes. Important principles are the differentiation of target groups according to gender, class, ethnic group and age, as well as the recognition of their values, skills and knowledge. Participation implies the empowerment of groups that are usually excluded from national planning and decision-making processes.

Land titles and access to productive resources (credit, advice and technology) offer incentives for a sustainable use of biological diversity. "Landless people", though, who are mainly women, cannot offer the securities on credits necessary for investment. Without land ownership, women are often also barred from joining organisations such as coopera-

[8] The Biotrade Initiative of the United Nations Conference on Trade and Development (UNCTAD), launched at the Third Conference of the Member States in Buenos Aires (November 1996), deserves support in this context. This initiative explicitly complies with the three main goals of the CBD.

tives. Yet membership in such organisations is often a prerequisite in order to have access to advice, technology and credit. An important condition for the sustainable use of biological diversity is therefore the promotion of the entitlement to and command over resources.

The member-states of the CBD explicitly call for the participation of NGOs in all consultations on the implementation of Article 8(j) (cf. UNEP 1999, Paragraph 25). Thus, gender-oriented networks and lobby groups should be strengthened at the national level. One promising approach is the effort to include representatives of local communities in consultations about conservation regimes and regulatory mechanisms.

A number of developing countries have either used the CBD implementation process to develop rules of entitlement to genetic resources and benefit-sharing mechanisms at the national level or are in the process of doing so. Once again, men and women should have the same opportunities to participate in this process. Means by which this can be fostered are e.g. the establishment of a female quota in the delegations active in international negotiations and the greater involvement of women's organisations in the discussions going on at national and international levels (in the form of workshops etc.).

Environmental education should be an integral part of formal and informal education. Article 13 of the CBD addresses the need to raise public awareness about biological diversity. Information campaigns should reflect the different roles of women, men and children in the protection of biological diversity. Environmental education should form an integral part of all school curricula. In this way, pupils have the opportunity to learn about the significance of traditional knowledge, practices and traditional medicine from a gender perspective.

Planning and decision-making processes at the policy level and monitoring systems require gender-desegregated data in the fields of registering, protecting and using biodiversity and in the documentation of traditional knowledge. They are also an important basis to develop benefit-sharing mechanisms.

Public policy in most countries is still characterised by a lack of gender mainstreaming. The social and economic impact of public policy on women is often overlooked. There is a need to integrate a gender perspective into the formulation and implementation of projects, programmes and policies, as well as into the development of economic incentives for the protection of biodiversity (e.g. taxes, prospecting rights, levies on tourism, special funds, natural resources damage liability). This requires that decision-makers are qualified through gender training.

5.4 Action at the Local Level

At the local level, the support of organisational and networking processes plays a key role. Gender-balanced representatives of local and indigenous communities must be able to defend their interests during consultation and negotiation processes in accordance with their social, cultural and ecological value systems.

The active participation of gender-balanced local and indigenous representatives in planning processes, as well as the full effect of their work, is dependent on their competence and organisational ability. The following measures offer some examples of how these important preconditions might be achieved:

- Training courses on the management of village and women's organisations, participatory methods, techniques of negotiation and consensus building.
- Training courses on techniques of planning, monitoring and evaluation for the preparation of local development plans and drafting of project applications.

- Training courses on the goals of the CBD, intellectual property, case studies of *sui generis* systems and benefit-sharing mechanisms.
- Exchange of experiences with other local and indigenous communities, women's organisations etc.

Many developing countries have extended the scope for popular participation at the local level as part of democratisation and decentralisation processes that they are undergoing. Development and environmental committees provide a forum in which cooperatives, women's groups and youth organisations can influence planning and decision-making processes concerning local issues and local implementation of the CBD. In this way, women are discovering that politics is not a "man's business". They should also be encouraged to run for Mayor, councils, committees and the like.

This makes it necessary to promote the activities of the various interest groups at the community level, as well as their sense of community ownership. In India, for example, 50 communities are currently preparing "community registers" about local biodiversity, sustainable uses and traditional knowledge. These can only be accessed with their prior informed consent. Protective mechanisms for collective intellectual property, as well as the local and indigenous communities' ownership of genetic resources, technologies and traditional knowledge regarding biological diversity, play an important role in this context. Women and men have to participate equally in their development.

Article 10(c) of the CBD calls on the member-states to protect and promote the traditional use of biological resources, as long as they meet the criteria of conservation and sustainability. Gender-sensitive programmes and projects should therefore focus more strongly on the following issues: *in situ* conservation on farms, management of biodiversity for food and medicinal purposes (e.g. gardens for crops and medicinal plants), social forestry, agroforestry etc. A wide range of gender handbooks has been published on the topic (e.g. Moser 1993, Thomas-Slayter et al. 1993, Wilde and Vainio-Matilla 1995, FAO 1999).

In the areas of environmental protection and management of conservation zones, it is predominantly men who have reaped the rewards of the accruing benefits, like jobs and other sources of income. Co-management approaches integrating all stakeholders should ensure the fair and representative inclusion of women during the negotiation of management plans. They should also integrate gender aspects into agreements on the use of protected areas and the like.

Building sustainable production facilities at the local level can open new markets. Especially the worldwide network of fair trade structures has stimulated the production of environmentally and socially beneficial products. Female producers are already strongly represented in fair trade. Producer groups in developing countries should receive gender-specific support through advance financing, product development, labelling and marketing, as well as cooperative and business skills.

References

Agrawal, Bina (1991): "Gender and the Environment: Lessons from India". In: Borkenhagen, Lea and Janet Abramovitz (Eds.), *Proceedings of the International Conference on Women and Biodiversity*. Harvard University, Boston.

Aguilar, L. and I. Castañeda (2000): *Sobre marinos, marinas, mares y mareas: Perspectivas de género en zonas marino-costeras*. IUCN: ABSOLUTO, San José de Costa Rica.

Badri, Balghis and Amna Badri (1994): "Women and Biodiversity". *Development, Journal of SID* 1:67-71.

Caspary, H. U. (1999): *Wildlife Utilisation in Côte d'Ivoire and West Africa – Potentials and Constraints for Development Cooperation*, Eschborn.

CBD (1992): *Convention on Biological Diversity*, Rio de Janeiro. <http://www.biodiv.org/convention/articles.asp>

Dreze, Jean and Amartya Kumar Sen (1995) (Eds.): *The Political Economy of Hunger: Selected Essays. Wider Studies in Development Economics*, Oxford.

FAO (1996): *Gender, Biodiversity and Local Knowledge Systems to Strengthen Agricultural and Rural Development*. Southern Africa Regional Project GCP/RAF/338/NOR, Rome.

FAO (1999): *Socio-economic and Gender Analysis Programme (SEAGA). Sector Guide: Plant Genetic Resources Management*, Rome. <http://www.fao.org/sd/seaga/default.htm>

Flores, Ximena (1998): *Contribution to the Estimation of Countries' Interdependence in the Area of Plant Genetic Resources*. FAO Background Study Paper 7, LARC/00/INF/7, Rome.

GPAC (1996): *Global Plan of Action for the Conversation and Sustainable Utilisation of Plant Genetic Resources*, Leipzig.

GTZ (2000): *Managing Agrobiodiversity in Rural Areas. Sectoral Project for the Conservation of Genetic Diversity in Agriculture in Support of Food and Income Security,* Eschborn.

GTZ (2001): *Issue Paper BIODIV*, Eschborn.

Guerin-McManus, Marianne et al. (1999): *Bioprospecting in Practice: A Case Study of the Suriname ICBG Project and Benefit Sharing under the Convention on Biological Diversity*, Paramaribo. <http://www.biodiv.org/socio-eco/benefit/case-studies.asp>

Manicad, Gigi (1999): "CGIAR and the Private Sector: Public Good vs. Proprietary Technology in Agricultural Research". *Biotechnology and Development Monitor* 37:8-13.

Moser, Caroline O.N. (1993): *Gender Planning and Development. Theory, Practice and Training*, London.

Neumann, Roderick P. and Eric Hirsch (2000): *Commercialisation of Non-Timber Forest Products: Review and Analysis of Research*. CIFOR/FAO, Bogor.

Quiroz, Consuelo (1996): *Incorporating Gender-Sensitive Approaches into Plant Genetic Resources Conservation and Use: Developing a Conceptual Framework and Guidelines*. IPGRI-FAO-UGA, Rome.

Shiva, Vandana (1996): "Farmers Safeguarding Biodiversity through Their Crop Production". In: Intermediate Technology Group (Ed.): *Farmers Safeguarding Agricultural Diversity through Their Crop Husbandry*, Rugby.

Tapia, Mario and Ana de la Torre (1997): *La mujer campesina y las semillas andinas*, Lima.

Thomas-Slayter, Barbara Andrea, Lee Esser and M. Dale Shields (1993): Tools of Gender Analysis: *A Guide to Field Methods for Bringing Gender into Sustainable Resource Management*. ECOGEN, Clark University, Worcester.

UNDP (1999): *Human Development Report 1998*, New York.

UNEP (1999): *The Relationship between Intellectual Property Rights and the Relevant Provisions of the Agreement on Trade-Related Aspects of Intellectual Property Rights and the CBD*. Intersessional Meeting on the Operations of the Convention, June 28 - 30 1999 (UNEP/CBD/ISOC/5), Montreal.

UNESCO (2000): *Wise Coastal Practices for Sustainable Human Development: Results of an Intersectoral Workshop, 30 Nov. to 4 Dec. 1998, and Preliminary Findings of a Follow-up Virtual Forum*. CSI info 10, Paris.

Wilde, V. and A. Vainio-Matilla (1995): *Gender Analysis and Forestry*. International Training Package. FAO, Rome.

World Food Programme (1998): *Gender Glossary*, Rome.

WRI, IUCN, UNEP (1992): *Global Biodiversity Strategy*. Guidelines for Action to Save, Study, and Use Earth's Biotic Wealth Sustainably and Equitably, Washington.

Annex 1: Innovative Projects from Peru and China

The Flora Tristán Women's Centre in Peru is cooperating with the GTZ BIODIV Project in a pilot programme on traditional knowledge and conservation of biodiversity from a gender perspective. The project combines strategies for the protection of biological diversity and traditional knowledge in the selected regions (Ayacucho and San Martín Provinces) with strengthening the role of women.

Participatory studies are used to document the knowledge and techniques of rural small-scale producers for managing natural resources and biodiversity. A team composed of representatives from intermediary NGOs, the rural population and their organisations carries out these studies. The information collected is evaluated and exchanged at rural fairs and village workshops. On this basis, deficits and assistance needs will be identified and action programmes will be drafted. If these cannot be executed through the self-help measures of the local population, they are to be supported via development funds and projects.

At the same time, the results of these studies are to be used to disseminate the traditional knowledge of women and men about the conservation and sustainable use of biodiversity at a national level. To this end, governmental and non-governmental organisations as well as development institutions are to be lobbied in the areas of local knowledge, gender and biodiversity. In the near future, intensive lobbying is also intended to increase support for the action programmes.

A similar project on "local knowledge on the sustainable use and protection of biodiversity" is currently planned in southwest China. The NGO Centre for Biodiversity and Indigenous Knowledge expects to carry it out in cooperation with the BIODIV Project.

This project addresses three areas in the Province of Yunnan, characterised by contrasting ecological and socio-economic conditions, especially in relation to the ethnic composition of the population. The participatory study and mobilisation of traditional knowledge among the various ethnic and social groups will have a strong gender orientation. Since, due to male migration, the latest trend in rural areas of China is the feminisation of agriculture, this project will pay special attention to the specific knowledge that women have, the new challenges they face and their expectations regarding the conservation of biodiversity. It will also look at the loss of indigenous knowledge through the absence and reduced skills of men, and at the history of gender specific knowledge.

A team consisting of representatives from NGOs, local training institutes, institutions of ethnic minorities and the rural population will be in charge of recording traditional knowledge. The assessment and exchange of the information thus gathered is to take place during village workshops and "knowledge and seed fairs". Several awareness building campaigns on cultural diversity and biodiversity are also planned. A second step will comprise the identification of deficits and the development of appropriate training activities for women and men. Bilingual environmental education programmes are also contemplated in this step.

Annex 2: Gender Glossary[9]

Desegregated data: Data broken down by sex, age or other variables to reflect the different needs, priorities, activities and interests of women and men; their access to and control over resources, services and activities. Desegregated data is essential for monitoring project activities and outputs in order to assess who is participating in and benefiting from development or emergency interventions. It is important to have baseline-desegregated data at the beginning of a project, in order to compare results throughout the process.

Empowerment: A process through which women and men in disadvantaged positions increase their access to knowledge, resources and decision-making power, and raise their awareness regarding participation in their communities, in order to reach a level of control over their own environment.

Entitlement: The right to have command over resources. It can take the form of rights over labour, land, goods and cash, and it includes rights of use and/or sale and purchase. Command over resources is not typically controlled by laws, like ownership is. Each member of a household is entitled to a certain quantity of commodities, including food, according to his/her sex and age. Therefore, food entitlements are determined by the endowments (land, labour and livestock) of a person or family, and the amount of food acquired through trade/or production. Usually women and men, and girls and boys in a household, have different entitlements over food, which is part of the customary practices.

[9] With kind authorisation from the World Food Programme. Source: World Food Programme 1998.

Gender: The differences between women and men within the same household and between cultures that are socially and culturally constructed over time. These differences are reflected in: roles, responsibilities, access to resources, constraints, opportunities, needs, perceptions, views etc., held by both women and men. Thus, gender is not a synonym of women. It pertains, rather, to women and men and their interdependent relationships.

Gender analysis: Examination of a social process that considers the roles played by women and men, including issues such as the division of labour, productive and reproductive activities, access to and control over recourses and benefits, socio-economic and environmental factors that influence women and men. Gender analysis also refers to the systematic investigation of development's differentiated impacts on women and men.

Gender mainstreaming: Gender is a dimension that has to be incorporated into all policies, development planning and processes, since it helps to understand the attitudes, needs and roles of women and men in society better, on the basis of social, economic, political and cultural factors. Thus, gender must be considered as part of the general analysis of an activity, policy, programme, event or process. It should be mainstreamed and not be considered as a separate issue.

Gender needs: Since women and men play different roles, and have differentiated access to and control over resources, facing various types of constraints, they usually have different needs and priorities. In planning development interventions, it is often assumed that household members have the same needs. In such cases, women's needs are often not expressed.

Gender perspective: A focus which introduces a framework of analysis to be used in order to assess how women and men affect and are affected by policies, programmes, projects and activities in any development or relief intervention.

Gender role: Socially determined behaviours, tasks and responsibilities for women and men based on socially perceived differences that define how women and men are expected to act. Gender roles change over time, through individual choices, social or political changes such as economic crises, natural disasters and the resulting emergencies, and post-war situations in which the decision-making power and responsibilities of women and men vary.

Gender training: Teaching activity aimed at developing a common understanding of gender policies and concepts, as well as skills in targeting, beneficiary participation and monitoring of gender equality.

Participation: In development jargon, participation refers to individuals, groups, communities and institutions taking part in the decision-making process related to the development effort. Participation must include persons or groups marginalised or discriminated from decision-making positions. It is often necessary to develop specific strategies and tools to promote the participation of these marginalised or discriminated groups, such as women or ethnic minorities. Participation leads to empowerment.

Annex 3: Issue Paper BIODIV

Gender Relations and Biodiversity

Due to the nature of socio-economic and cultural relations between the sexes, knowledge about biodiversity is often unevenly distributed between them. In developing countries, women often make use of different resources from men, or make different use of the same resources. A typical example is the use and commercial exploitation of trees and forest products: whereas women often gather fruits, medicinal plants and firewood for immediate use or for sale at local markets, men work in timber production.

Women often have different types and rights of access to resources such as land or marine products – or indeed no access at all, which is often not the case for men. Benefits that accrue from the conservation and sustainable use of genetic resources are unevenly distributed between men and women and do not correspond to their respective inputs. At the same time, men's and women's influence on political goal-setting and decision-making – including as regards the use of biodiversity – differs greatly. Little or no account is taken of women's experience and skills. In developing countries, for example, women are often responsible for the cultivation and propagation of seed, yet all over the world, women are underrepresented as decision-makers in agricultural research. Protected-area management similarly fails to take proper account of gender relations. This is true both of access to resources in protected areas and of representation within the workforce and in the decision-making bodies of protected-area administration. Women are not trained in sufficient numbers for these kinds of activities.

What Is Gender (Gender Relations)?

Whereas biological gender (sex) is genetically determined, social gender is shaped by society. Gender is a sociological concept intended to help us understand the relations between men and women in society. It encompasses the social, economic, and cultural differences that have arisen between men and women in the course of time – both within the same household and between different cultures. These differences are manifested, amongst other things, in differing roles and areas of responsibility, in differing access to resources, differing chances, needs, perceptions, and attitudes on the part of men and women. Hence, "gender" is not a synonym for the role of woman in society; it takes equal cognisance of men and women, and of their interdependent relations. The structural approach to gender replaces the 1980s development-policy concept of "Women in Development", which was essentially confined to the promotion of women, particularly in the agricultural sector.

Gender in the Convention on Biodiversity

The Convention on Biological Diversity recognizes "the vital role that women play in the conservation and sustainable use of biological diversity" and confirms "the need for the full participation of women at all levels of policy-making and implementation for biological diversity conservation". And yet neither the decisions of the Conferences of the Parties nor the recommendations of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) have taken much account of the significance of gender in the attainment of the Convention's objectives.

Contribution of the Project "Implementing the Biodiversity Convention"

The BIODIV Project is helping to speed up implementation of the Biodiversity Convention in development cooperation and promoting the further development of the Convention itself and of its various instruments and bodies. As part of the project, developing countries are given assistance in implementing the Convention, through individual measures.

In future, BIODIV will pay greater attention to the gender aspect in the implementation of the convention, in line with the German government's policy on gender. Efforts are being made, within the framework of the Convention negotiations, to get gender-specific aspects discussed and taken into account in decision-making. Differences in knowledge and practice that are of relevance to the conservation and sustainable use of biodiversity are being given greater consideration in the conduct of projects.

A project being run in conjunction with the NGO Centro de la Mujer Peruana "Flora Tristán" in Peru has already adopted a gender-specific approach: analyses are being carried out to see how use of biodiversity and natural resources by male and female small-scale producers differs, and what gender-specific indigenous and local knowledge exists, particularly in the area of food security. In conjunction with the GTZ's Pilot Programme on Gender, the BIODIV Project has also drawn up a concept paper on the integration of gender in the CBD.

Priorities for action

❑ Given the present scant awareness of gender difference in the Biodiversity Convention, the most urgent task is to sensitise the Convention's decision-makers – the great majority of whom are men – to this issue.

❑ The proportion of women in the delegations that work in the Convention's various bodies must be increased.

❑ The Convention's overall goals can only be achieved if gender is taken into account in the implementation of the Convention's three aims – conservation, sustainable use, and benefit-sharing – in all relevant thematic and cross-sectoral domains. Projects, plans, and programmes must all reach the correct target-group – in other words, must take account of aspects specific to men and women, and, where necessary, promote women in practical and strategic ways.

❑ The links between gender relations and the conservation and use of biodiversity must be brought to greater attention through studies and research, so that decisions, projects, and programmes can be designed in ways that ensure they reach their targets.

Biodiversity and the Convention on Biodiversity

The term "biological diversity", or short "biodiversity", encompasses the diversity of life on earth, ranging from genetic diversity and diversity of species to the diversity of ecosystems. The Convention on Biodiversity adopted in Rio de Janeiro in 1992 comprises three elements: the conservation of biological diversity, its sustainable use and the equitable distribution of benefits arising from its use. In the meantime, 179 countries and the European Union have joined the Convention. By signing the Convention, Germany has agreed not only to conserve biodiversity on its own territory but also to support developing countries in implementing necessary measures.

Source: GTZ, April 2001.

Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH

German Technical Cooperation
Dag-Hammarskjöld-Weg 1-5
Postfach 5180
65726 Eschborn
Telephone: 06196 79-0
Telefax: 06196 79-1115
Internet: http://www.gtz.de

On behalf of:

Bundesministerium für
wirtschaftliche Zusammenarbeit
und Entwicklung