

## Management of biological diversity and food security

*The right to food is a universal right – a right that more than 854 million people worldwide are actually deprived of. The first of the eight UN Millennium Development Goals (MDGs) is to reduce the rate of people suffering from hunger to half by 2015. The latest report on the MDGs of 2007 states „child hunger is declining in all regions, but meeting the target will require accelerated progress“. There are, however, new challenges that influence human food security.*

In the past, approximately 7,000 plant and several thousand animal species have been used for human food and even today, traditional and indigenous communities use more than 200 species in their individual diets. For most parts of the world, however, only 20 plant species cover 90 per cent of today's nutrition, although no single food (except breast milk) contains all necessary nutrients. Diversity is therefore key to nutritionally adequate diets. Adaptation to changing conditions due to climate change is better achieved through diversification, reducing the negative impacts of extreme events, like droughts or diseases. In general, wild sources of food remain particularly important for the poor and landless, and play an especially significant role in times of famine and insecurity or conflict, when food supply mechanisms are disrupted and local or displaced people have limited access to food. Even in normal times, wild foods are often important to complement staple food to provide a balanced diet.

Environmental integrity is seen as critical to increase human well-



Photo: Elke Mannigel

being in the long term. Biodiversity contributes not only directly to food security, but also through a number of environmental services provided to agriculture, such as pollination of food crops, water regulation, disease control and others. Intact ecosystems are an important source for local livelihoods, especially in developing countries, where people depend on natural resources.

Biodiversity can also serve as a safety net for vulnerable households in times of crisis, offers income opportunities to the rural poor, and sustains productive agricultural ecosystems.

### *Dependence of rural communities*

Threats to nature conservation and biodiversity are often increasing, with considerable human needs in adjacent areas. At the same time, low priority is given to assuring effective conservation

*Local communities must be involved in nature conservation to safe biodiversity in their neighbourhood.*

of biological resources in these regions, resulting in a correspondingly insufficient level of capacities. Thus involvement of local communities in conservation activities becomes essential to assure long-term conservation. How local livelihood improvement and food security can be linked to nature conservation in the buffer zone of protected areas is an important aspect of a new interdisciplinary cooperation project conducted by Welthungerhilfe and the Tropical Forest Foundation OroVerde, combining food security and biodiversity conservation.

While past conservation efforts were aimed at protecting particular species and habitats, the Convention on Biological Diversity (CDB) recognises that ecosystems, species and genes must be conserved and used for the ben-

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efit of humans. The joint programme of Welthungerhilfe and Oro Verde focuses on the integration of biodiversity conservation and human welfare, important for the achievement of the MDGs. Biological diversity is seen as the basis for sustainable development. The programme applies an ecosystem approach and promotes the participation of different stakeholders in decision-making, while striving to promote an integrated decentralised management of the biological resources, which is sustainable in the long term.

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### *Food security and biodiversity conservation*

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The joint regional programme operates in three important areas, the *José Armando Bermúdez National Park* (Dominican Republic), the *Alejandro de Humboldt National Park* (Cuba) and the *Miraflor-Moropotente Nature Reserve* (Nicaragua). Activities already implemented are linked, and possibilities to improve biodiversity conservation and food security will be discussed in several common workshops over the next three years. The Project involves 15,625 inhabitants of 122 rural communities in the buffer zones of the three protected areas. Our partners from the South will describe the project in the following passage.

***Jose Reyes; Director of the Nature Center (Centro Naturaleza) from the Dominican Republic:***

“The objective of the project in the Dominican Republic is that the local population (around 1,500 families) in the northern buffer zone – an area of approximately 30,000 hectares – applies a sustainable management of the existing natural resources. There is no human impact on the Armando Bermúdez National Park. To achieve this, three fundamental strategies have been adopted: community par-

ticipation, conservation of the natural resources and the establishment of productive agricultural systems.

**Community participation:** In these projects, one cannot ignore the people living around the nature reserves, because social and economic problems affecting them can turn into strong negative impacts on the reserves themselves in a short time ( e.g. deforestation and burning, uncontrolled timber exploitation, poaching, overgrazing, etc). The project facilitates the involvement of the local population in all activities for the park. It promotes the formation of a participatory process through training courses, workshops and study visits.

**Conservation of the natural resources:** Without nature conservation policies, people will experience a decline in life quality – ultimately ending in the collapse of their livelihoods. So to preserve flora and fauna, forests and water as the most precious goods for the future, action must be taken now. To support this strategy, environmental educational programmes are being conducted in cooperation with various stakeholders of the area (producers, housewives, youths and students). Community tree nurseries are being developed to produce native plants. Joint reforestation activities are organised to protect the aquifers.

***Statement of Presidenta Centro de Madres, Dominican Republic, Doña María Eugenia Gutiérrez:***

*“I am planning to improve my family’s diet by growing vegetables in my home garden. To all the families of the community, the project is giving the opportunity to assure a good part of the food we consume, and if we have more than we need, we can commercialise it in the village closest by.”*

**Establishment of productive agricultural systems:** The value of support provided by natural areas for economic and cultural development becomes evident throughout the long history of humankind. The provision of goods and environmental services is often essential to maintain human settlements. In the buffer zone, where the Welthungerhilfe/Oro Verde project is being implemented, the population depends almost entirely on the forest for their food and income. A land-use plan for an integrated sustainable development is being developed that will assure food security, better live quality for the local population and the reduction of poverty. The idea is for this plan to outgrow the project and become an instrument for development of the whole area – while protecting the National Park at the same



Photo: Elke Mammigel

*Environmental educational programmes are being conducted in the Dominican Republic.*

time. Action needed includes implementing sustainable agroecological systems (productive areas with soil and water conservation techniques), systems of home gardening with a high involvement of women, sustainable models of pasture management and forestry management plans for already established plantations and other areas."

### **The Cuban National Park Administration Authority:**

"Thanks to its biodiversity and endemism, the Alexander Humboldt National Park is one of the most important protected areas in Cuba. The park offers potentials for ecotourism and scientific development. Its surrounding area (the buffer or transition zone) allows the development of productive activities compatible with nature conservation that do not have an impact on the protected areas while reconciling legitimate interests of development of the habitants with the conservation objectives of the park.

The project thus includes support for strengthening agricultural production for consumption and commercialisation as well as environmental communication activities (information, awareness raising, capacity building).

Important goals of the programme are

- the conservation of the park
- the systematisation of the activities to create a culture of sustainable

### **Statement of the local park management, Dominican Republic Ing. Leonardo Zacarías Liriano García, Director Parque Nacional Armando Bermúdez:**

*"The project offers a high level of community participation and important commitment to coordinate different institutions, with which an empowerment of both communities and authorities can be achieved. The realisation of a socio-biological analysis in the park's buffer zone with the participation of the communities and the execution of training activities on sustainable management of the area are appropriate actions to integrate the leaders and the local inhabitants in the valorisation, protection and defence of their natural resources."*

Leonardo Zacarías  
Liriano García.



Photo: Elke Mannigel

development for the 8,000 habitants of the 23 communities linked to the different sectors of the park. These activities are planned within the strategy for the conservation, protection and sustainable management of the natural resources. Two hundred local community leaders are organised in 21 activist groups participating with their initiatives in the programmes.

- The execution of the project is an important contribution to the elaboration and implementation of the management plan for the conservation of the park in the next years."

### **Statement of the local park management, Cuba**

*"Many farmers living in the park depend on its natural resources for food, water, firewood, income, etc. To meet their food requirements, they are often forced to commercialise natural resources illegally. With a programme that can help to improve the living conditions of these farmers in the most direct way, the negative impact they have on the natural resources we protect will decrease notably. The most important is a programme aspect where the benefits go directly to the local population."*

## **Zusammenfassung**

Der Schutz der biologischen Vielfalt und Ernährungssicherung hängen eng zusammen. Die Halbierung der Anzahl der Menschen, die weltweit unter Hunger leiden, ist eines der wichtigen Ziele, das sich die Menschheit bis 2015 gesetzt hat. Gerade im Hinblick auf den Klimawandel, die steigende Nachfrage nach Land für die Produktion von Biokraftstoffen und den immer stärkeren Rückgang der biologischen Vielfalt kommt der Verbindung zwischen Naturschutz und lokaler Entwicklung eine immer höhere Bedeutung zu. Ein neues regionales Ko-

operationsprojekt der Welthungerhilfe und der Tropenwaldstiftung OroVerde hilft, diese Verbindung zu schaffen und entwickelt gemeinsam mit den Partnern neue Ansätze zur Verbindung von Naturschutz und Ernährungssicherung.

## **Resumen**

La protección de la diversidad biológica y la seguridad alimentaria están estrechamente relacionadas. El reducir a la mitad el número de personas que padecen hambre en todo el mundo es uno de los objetivos importantes que la humanidad se ha fijado para 2015. Precisamente en

un contexto donde se imponen el cambio climático, el auge en la demanda de terrenos agrícolas para la producción de biocombustibles y la creciente disminución de la diversidad biológica, la relación entre la protección de la naturaleza y el desarrollo local adquiere una importancia cada vez mayor. Un nuevo proyecto regional de cooperación de Agroacción Alemana y la fundación pro-conservación de los bosques tropicales Oro Verde ayuda a crear este vínculo, y desarrolla nuevos enfoques junto con las contrapartes para conectar la protección de la naturaleza con la seguridad alimentaria.