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Lebenslauf

Education

- 1987 -1990 Ph.D. Course in Hohenheim University, graduation as Dr. sc. agr.
1979 - 1985 studies of Agricultural sciences, University of Göttingen,
graduation as Master of Science (Dipl. Ing. agr.) in Animal
Science
9/1979 final examination at the end of the practical year by the Chamber
of Agriculture

Employment record

- 6/2002 - Service Chief, Animal Production Service of Animal Production
and Health Division, Agricultural Department of Food and
Agriculture Organization of the United Nations leading the
Global Programme on the Preparation of the first Report on the
State of the World's Animal Genetic Resources and the Global
Strategy for the Management of Farm Animal Genetic Resources
7/2001- 5/2002 Co-ordinator of the subproject: "Socio-economic aspects of
changes in biodiversity in Southern Africa" of the project
Biodiversity Monitoring Transect analysis in Africa (BIOTA).
4/1994-7/2001 Assistant professor at the Institute of Animal Breeding and
Genetics, Dept. of Livestock Ecology, Justus-Liebig-University
Giessen JLU.
11/1993 - 4/1994 Editor at the German Institute for Technology in Agriculture
(DEULA), Westerstede.
5/1993 -10/1993 Freelance work for NGOs (development, animal welfare)
10/1992 - 4/1993 Freelance work at the German Institute of Distance Education
affiliated with the University of Tübingen (DIFF), scientific editor
of the radio course "Anthropology".

- 10/1990 - 9/1992 Member of the academic staff at DIFF, Tübingen; scientific editor of the radio course "Human Ecology".
- 5/1987 - 9/1990 Ph.D. training at Hohenheim University, sponsored by a scholarship of the "Studienstiftung des Deutschen Volkes".
- 5/1985 - 4/1987 Research associate of Hohenheim University at the GTZ-ONERA Rabbit Project, Bobo-Dioulasso, Burkina Faso.

List of publications

Monographs

- Hoffmann, I. (1985): Kaninchenhaltung in Burkina Faso. Diplomarbeit, Göttingen
- Hoffmann, I. (1990): Untersuchungen zur Kaninchenhaltung in Bobo-Dioulasso, Burkina Faso. Dissertation, Hohenheim

selected publications in international and national reviewed journals

- Hoffmann, I.: Access to land and water in the Zamfara Reserve. A case study for the management of common property resources in pastoral areas of West Africa. (in press, *Human Ecology*,)
- Hoffmann, I. (2003): Spatial distribution of cattle herds as a response to natural and social environments. A case study from the Zamfara Reserve, Northwest Nigeria. *Nomadic Peoples*, Vol. 6(2).
- Hoffmann, I., D. Gerling, U. B. Kyiogwom, A. Mané-Bielfeldt (2001): Farmers' management strategies to maintain soil fertility in a remote area in Northwest Nigeria. *Agriculture, Ecosystems and the Environment* Vol. 86 (3) 263-275.
- Hoffmann, I., C. Willeke-Wetstein, C. Schäfer (1998): Beschreibung eines Weideökosystems in Nordwest-Nigeria anhand von Umweltindikatoren. In: *Archiv für Tierzucht / Archives of Animal Breeding* 41 (1/2) 129-142
- Hoffmann, I., B. Eckert (1998): Local knowledge in transition: A case study on women and firewood utilisation in rural Nigeria. In: *The Land* 2.2, 101-114
- Hassan, W.A., I. Hoffmann, J. Steinbach (1998): Socio-economic importance of sheep and goat keeping in rural households. A case study of smallholder arable farming in Zamfara Grazing Reserve. *Nigerian Journal of Rural Sociology*, Vol 2, 1998, 33-41
- Schäfer, C., I. Hoffmann, J. Steinbach (1997): The role of traditional livestock husbandry in the supply of milk, meat and draught power in the Northwest of Nigeria. In: *Animal Research and Development* Vol. 46, 14-29

Vortrag: Loss of agrobiodiversity: plants and animals for food and agriculture

During the last 10.000 years, human civilizations have benefited greatly from the domestication, conservation and use of a group of animals and plants species used for agriculture and food production. The genetic diversity within these species, breeds and varieties, which have been largely exchanged through history and readapted to local conditions, have evolved adaptations that allow production in a wide range of situations, including some of the most stressful environments inhabited by man and that now provide a coherent basket of sustainable solutions to disease resistance, survival and efficient production. We all greatly depend on this diversity but especially the rural poorest, which depend on the intensive management of biodiversity to support their livelihoods. While the international community now acknowledges the very essential role of agricultural biodiversity, the loss of this biological treasure is still increasing around the world. The following facts and figures may bring some light to our discussion:

- 120 cultivated plant species provide 90 percent of human food supply from plants;
- 14 mammalian and bird species provide 90 percent of human food supply from animals;
- 12 plant species and 5 terrestrial animal species provide 70 percent of all human food supply;
- Potatoes, rice, maize and wheat together with cattle, swine and chicken provide over 50 percent of all human food supply;
- More than 1 300 aquatic species are farmed or collected from the wild; almost 80 percent of this production takes place in developing countries or countries in transition;
- Over the past 15 years, 300 of 6 000 animal breeds identified by FAO have become extinct;
- 1350 breeds currently face extinction, two breeds are lost each week.

Genetic erosion continues at an increasing rate. The most prominent threats to populations are

- Wars, pest and disease outbreaks (animal and human), and other natural disasters (drought, floods, earthquakes, etc.);
- Social and economic changes, urbanisation, market changes and intensification leading to "farmer extinction", "habitat extinction";
- Global marketing of breeding material;
- Breed/variety substitution or absorption, crossbreeding with exotic breeds/varieties;
- Short term goals, lack of recognition of current or future value of GRFA;
- Poor monitoring and management, lack of sustainable breeding programmes;

- Poor policies: development, re-stocking;
- Land-use policies that annex common grazing grounds displace pastoral societies and lead to loss of animal breeds.

Animals and plants genetically adapted to their environment need to be further developed and conserved because they will:

- form an insurance against unforeseen events and provide genetic resources for future generations;
- be most effective in achieving local food security objectives because they are more resilient to climatic stress and to local parasites and diseases;
- be more productive at lower costs and in low-input systems, and sustainable in the long term;
- support food, agriculture and cultural diversity, including supply of special products and cultural values;
- constitute an unique source of genes for improving health and performance of industrial breeds/varieties;
- may offer new business opportunities.

The international framework

International awareness of the essential role played by agricultural biodiversity in food and agriculture is gradually increasing. The intergovernmental discussions were started in the 1980's by the FAO, when an intergovernmental body was created to address the policy questions regarding the management and exchange of plant genetic resources for food and agriculture. The Commission on Genetic Resources for Food and Agriculture (CGRFA), hosted by the Food and Agriculture Organization of the United Nations (FAO), is still the most important permanent forum for governments to discuss and negotiate matters relevant to genetic resources for food and agriculture. In 1995, its mandate was broadened to cover all components of agro-biodiversity of relevance to food and agriculture, although the broadening has not yet been implemented for forestry and fisheries genetic resources. At present 164 countries and the European Community are members of the CGRFA.

Other forums have contributed to advanced awareness and international cooperation in this area. In 1992, the United Nations Conference on Environment and Development, the Convention on Biological Diversity (CBD) and the Agenda 21 started to provide a formal framework for dealing with global biodiversity. In 1996 and 2002 the FAO World Food Summits recognized the contribution of crop and animal genetic resources to food security, poverty alleviation and rural development. The Commission on Sustainable Development strongly emphasized the importance of promoting sustainable agriculture and rural development (SARD), and underlined the essential need to ensure the conservation and sustainable use of genetic resources in achieving sustainable agriculture. For this to happen, holistic value has to be re-evaluated and the cultural heritage appreciated. Ecosystem approaches to management, particularly of

agroecosystems, must be focused, however, not only on the biological organisation but also on the human interactions that shape and influence them.

The International Community has now recognized, through the CBD and the FAO governing bodies, the special nature of agricultural biodiversity as it has some distinctive features that include the following:

- Agricultural biodiversity is essential to satisfy basic human needs for food and livelihood security;
- Agricultural biodiversity is managed by farmers; many components of agricultural biodiversity depend on this human influence; indigenous knowledge and culture are integral parts of the management of agricultural biodiversity;
- There is a great interdependence between countries for the genetic resources for food and agriculture;
- For crops and domestic animals, diversity within species is at least as important as diversity between species and has been greatly expanded through agriculture;
- Because of the degree of human management of agricultural biodiversity, its conservation and development in production systems is inherently linked to sustainable use;
- Nonetheless, much biological diversity is now conserved *ex-situ* in gene banks or breeders' materials;
- The interaction between the environment, genetic resources and management practices that occurs *in-situ* within agro-ecosystems often contributes to maintaining a dynamic portfolio of agricultural biodiversity.

In recognizing the distinctive features and problems of agricultural biodiversity, the International Community also recognized that these need to be solved through distinctive solutions. The member countries of the CGRFA have therefore developed and continue to monitor the *Global Strategy for the Management of Farm Animal Genetic Resources*; and the *Global System for Plant Genetic Resources*. A brief introduction of these two instruments follows in the next sections. Furthermore, the CGRFA reviews and advises FAO on policy, sectorial and cross sectorial matters, programmes and activities related to the conservation, sustainable use and equitable sharing of benefits derived from the utilisation of genetic resources of relevance to food and agriculture, for present and future generations. The CGRFA facilitates and oversees cooperation between FAO and other relevant intergovernmental and non-governmental bodies, including, the Conference of Parties to the Convention of Biological Diversity (CBD) and its subsidiary bodies, and the institutes of the CGIAR.

The International Treaty for Plant Genetic Resources for Food and Agriculture

A major achievement in this area has been the adoption by the FAO Conference in November 2001, of the International Treaty on Plant Genetic Resources for Food and Agriculture. This new and unique international agreement underwrites the conservation and sustainable use of all plant genetic resources for food and agriculture, and the fair

and equitable sharing of the benefits arising out of their use. This is essential for agricultural development and for ensuring world food security, for this and future generations. The International Treaty will enter into force this year after 40 governments have ratified it.

Through the International Treaty, countries agree to establish a Multilateral System to facilitate access to plant genetic resources for food and agriculture, and to share the benefits in a fair and equitable way. The Multilateral System applies to a set of crops and forages selected according to criteria of food security and interdependence. Establishing an effective and transparent Multilateral System will be vital in ensuring the continued availability of plant genetic resources that countries need to feed their people.

An other unique element of the International Treaty is the article on Farmers' Rights, a recognition of the contribution that farmers and their communities have made and continue to make to the conservation and development of plant genetic resources.

Finally the International Treaty contains a series of supporting components, different instruments that along with the establishment of a funding strategy will hopefully facilitate the ultimate objective of the Treaty, to make diversity work for sustainable development and food security.

The Global System on Plant Genetic Resources

The objectives of the Global System are to ensure the safe conservation, and promote the availability and sustainable use of plant genetic resources by providing a flexible framework for sharing the benefits and burdens. The CGRFA, with its Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture, monitors and coordinates the development of the Global System. Two key elements of the Global System are:

- a) The Report on the State of the World's Plant Genetic Resources;
- b) The Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture.

The first **Report on the State of the World's Plant Genetic Resources** was prepared through a participatory, country-driven process. It assessed the state of plant genetic diversity, and capacities at the local and global levels for *in situ* and *ex situ* management, conservation and utilization of plant genetic resources. The Report was presented to the **Fourth International Technical Conference** held in Leipzig, Germany, in June 1996. A **Global Plan of Action (GPA)** was formally adopted by 150 countries through the **Leipzig Declaration**. The GPA comprises a set of activities covering capacity-building, and the *in situ* and *ex situ* conservation of plant genetic resources. It is a rolling plan that is monitored, reviewed and updated by the CGRFA. The second **Report on the State of the World's Plant Genetic Resources** is under preparation.

In addition to these two elements, the Global System comprises international agreements, a variety of codes of conduct, scientific standards, technical mechanisms and global instruments for plant genetic resources for food and agriculture.

The Global Strategy for the Management of Farm Animal Genetic Resources

The Global Strategy for the Management of Farm Animal Genetic Resources provides a technical and operational framework for assisting countries, comprising:

- an intergovernmental mechanism for direct government involvement and policy development,
- a country-based global infrastructure to help countries cost-effectively plan, implement and maintain national strategies for the management of animal genetic resources,
- a technical programme aimed at supporting effective action at the country level in the sustainable intensification, conservation, characterization and access to Animal Genetic Resources, and,
- a reporting and evaluation system to guide the Strategy's implementation, facilitate collaboration, coordination and policy development and maximize cost-effectiveness of activity.

The First **Report on the State of the World's Animal Genetic Resources** based on country reports and regional syntheses, and including a **Report on Strategic Priorities for Action**, is expected in 2006. The draft **Report on Strategic Priorities for Action** will be discussed by the CGRFA in its 10th session.

Documents of the Commission on Genetic Resources for Food and Agriculture
<http://www.fao.org/ag/cgrfa/docs.htm> and <http://dad.fao.org/en/Home.htm>