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MAINSTREAMING BIODIVERSITY ISSUES INTO FORESTRY AND AGRICULTURE



**Abstracts of Poster Presentations
at the 13th Meeting of the
Subsidiary Body on Scientific,
Technical and Technological
Advice of the Convention
on Biological Diversity
18-22 February 2008, Rome, Italy**



Convention on
Biological Diversity



28. LIVESTOCK FARMING WITH NATURE

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Keywords: Global Plan of Action for Animal Genetic Resources, LIFE-Network, Pastoralism, Value Addition

INTRODUCTION

Pastoralists and other small-scale and indigenous livestock keeping groups and communities play a crucial role in the in-situ conservation of farm animal genetic resources. This is recognized in the Global Plan of Action on Animal Genetic Resources (GPA) which states in its Strategic Priority Action No. 6 that the “*adaptive animal genetic resource management strategies of these communities continue to have economic, cultural and social significance and to be highly relevant to food security in many rural subsistence societies, particularly though not exclusively in dry lands and mountainous regions*” and suggests various actions to support indigenous and local communities, such as (1) *provision of veterinary and extension services, delivery of micro-credit for women in rural areas, appropriate access to natural resources and to the market, resolving land tenure issues, the recognition of cultural practices and values, and adding value to their specialist products*, (2) *the promotion and facilitation of relevant exchange, interaction and dialogue among indigenous and rural communities and scientists and government officials in order to integrate traditional knowledge with scientific approaches*, and (3) *the development of niche markets for products derived from indigenous and local species and breeds*.

THE LIFE-NETWORK

LIFE stands for Local Livestock For Empowerment of Rural People. The LIFE Network originated from the participants of a workshop held in Rajasthan (India) in 2000 that was the first effort to link conservation of local breeds with rural livelihoods (Lokhit Pashu-Palak Sansthan, 2002). It is a learning and advocacy network of non-government organizations (NGOs) and individuals that support collective and community-based conservation of animal genetic resources and endeavour to strengthen rural livelihoods through the development and valorisation of indigenous livestock breeds and species. The main approaches of the LIFE-Network so far have been (1) documentation of indigenous livestock breeds, (2) lobbying and advocacy for Livestock Keepers' Rights, and (3) exploration of value-addition and niche-marketing as sources of additional income for rural livestock keepers (www.lifeinitiative.net).

LOCAL BREEDS AS FOUNDATION FOR RURAL DEVELOPMENT

Local breeds should not just be saved for the sake of conserving biodiversity per se, but instead form a much better basis for livestock development than introduced or cross-bred animals, because of their many ecological and social advantages.

- They are part of the local agro-ecosystems, representing important links in the web of wild and domestic biodiversity. These eco-systems **depend** on the continued presence of the availability of these breeds, and collapse if they are removed (Köhler-Rollefson and LIFE-Network, 2007).
- Being able to exploit the natural vegetation of their environment and low-grade crop by-products that are high in roughage, local breeds are not dependent on expensive concentrate feed. By contrast, high performance breeds require commercially produced animal feeds that are usually imported and have been transported over long distances, sometimes from other continents, carrying a huge carbon footprint.
- Indigenous breeds have co-evolved with, and adapted to, local disease causing micro-organisms and are thus much less likely to fall prey to sicknesses, thereby reducing the need for veterinary inputs as well as the risk of catastrophic losses.

Local breeds have been developed and owned by local people over many generations and are the product of local knowledge about animal breeding. In stark contrast to the situation with hybrid chicken and hybrid pigs — where farmers have lost their breeding function and have to continuously buy new replacement stock —, the control over the breeding and reproductive processes remains under the control of local people.

The products of local breeds (be it eggs of indigenous chickens, meat of local pigs, or milk of adapted cattle breeds) are often much more popular with consumers than those of industrial livestock because of their better taste. The number of examples of high-value niche-market products developed from local breeds is increasing.

EXAMPLE FOR THE LIFE-APPROACH: SAVING THE CAMEL IN RAJASTHAN THROUGH HERDERS' CAPACITY-BUILDING AND VALUE-ADDITION

Camel husbandry is an ingenious way of converting the scattered and seasonally varying vegetation of the Thar Desert into animal protein and energy. But with the emphasis given by the government on irrigation agriculture, and the availability of motorized transport, camels came to be seen as backwards, and even as a threat by farmers. As a consequence, the camel population of Rajasthan dwindled by almost 50% and this important component of Indian biodiversity appeared threatened.

But camels can also provide a huge range of products that fill modern consumer needs. Examples include ethnic rugs from camel hair, chairs from camel leather, jewellery and inlaid furniture from camel bone, as well as camel safaris to experience desert romance. With the help of the Rajasthan based NGO Lokhit Pashu-Palak Sansthan (LPPS), the camel breeders of the Thar Desert are now seeking to realise this economic potential. Current efforts are focusing on value-addition to camel milk. Camel milk is different from cow's and buffalo milk, in a very healthy way: it contains enzymes with anti-bacterial and anti-viral properties, which help to fight diseases. It has been used traditionally to cure tuberculosis and typhoid, and also contains an insulin-like substance that reduces blood sugar levels in diabetes patients.

Awareness-raising and education of consumers about the beneficial effects of camel milk has established demand for fresh camel milk by 35 Diabetes patients in Jaisalmer. Low calorie ice cream is also made from camel milk and in demand by both Indian and foreign tourists.

CONCLUSIONS

Local breeds have the potential to serve as foundation for socially sustainable livestock development that is attuned to local environmental conditions and has beneficial linkages with local ecologies and cultures. In order to utilize this potential, there needs to be a paradigm shift in livestock development towards organisational strengthening of livestock keepers and support for value-addition and niche-marketing. Besides invigorating regional economies and reducing rural-urban migration, such an approach would contribute to the sustainable use of both domestic and wild biodiversity, reduce problems of desertification, and have positive impact on climate change by reducing the need for transporting animal feeds around the globe.

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