

National Biodiversity Strategy and Action Plan

Sub Theme:

Pastoral Communities and Biodiversity Conservation

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1. Introduction

Pastoral communities depend upon rearing of domestic animals for their livelihood and survival. There are roughly 40 million pastoralists in our country and particularly 2,00,000 Raikas families and majority of them are pastoralists in Rajasthan (Kohler - Rollefson , 2000) . Due to their higher dependence on animals, pastoralists are successful in developing breeding practices that help to protect and enhance animal resources. Farmers often consider their breeds superior. Pastoralists raise animals under conditions close to those obtaining in the wild therefore the breeds kept by them are most likely to retain those traits that are of greatest interest from the genetic resource angle (Kohler - Rollefson , 2000). Therefore, due to being directly responsible for the well-being of their animals, pastoralists seem to be predisposed for a crucial role in the conservation of domestic animal biodiversity.

The Union Ministry of Environment and Forests has initiated the process of formulating a National Biodiversity Strategy and Action Plan in collaboration with Kalpavriksh and for which one of the sub thematic review papers commissioned is on "Pastoral Nomads and Biodiversity". SEVA (Sustainable-agriculture&Environmental Voluntary Action), a member of LIFE (Local Livestock For Empowerment of Rural Poor) network was commissioned this review paper. SEVA has conducted case studies based on field level group discussions and workshops with the pastoral communities, NGOs, Govt.officials and academics during May 2001-December 2001 for the purpose of preparing sub thematic paper on ' Pastoral Communities and Biodiversity'.

This paper is based mostly on actual field information (for details of workshop at different locations refer annexure) recorded rather than collection of secondary information or data.

2. Methodology

SEVA conducted workshops and discussion meetings with traditional communities, pastoral nomads, tribals and farmers who are directly responsible for conserving native animal breeds. The outcomes of the

discussions at these workshops and meetings have been incorporated into this paper.

The details of workshops / meetings held

Place where meetings organized	Date
1. Brain storming session with representatives of herders groups & scientists - Madurai.	23.5.2001
2. Workshop with herders, tribals and village forest committee representatives - Pilavukkal Dam, Srivilliputhur	12.7.2001 & 13.7.2001
3. Discussion meeting with herders groups Vembur village, Thoothukudi District.	14.7.2001
4. Workshop with cattle herders, University Scientists & Govt officials at Umbalacherry village, Nagapattinam District.	18.7.2001
5. Discussion with pastoralists in Gholiya village Banaskantha District, Gujarat.	28.8.2001
6. Discussion meetings with representatives of tribals, Forest officials and NGOs at Thalavadi.	7.9.2001
7. Workshop with Toda tribals and Scientists at Sandynella, The Nilgiris.	10.9.2001
8. Discussion meeting with LIFE Network Members, Pune (LPPS, ANTHRA, SEVA)	15.10.2001
9. Documentation of Indigenous knowledge Practiced by Raika Pastoralists, Sadri, Rajasthan.	26/02/2002 27/02/2002
10. All India Pastoralists and Herders meet, Sadri, Rajasthan.	23.03.2002

Secondary information or data has been obtained from proceedings of NBSAP workshops / All India Meeting of pastoralists and herders organisations / International workshop on Local Livestock for Sustainable Livelihoods organized by NGOs and other organizations.

3. Pastoral Communities & Biodiversity Conservation

Pastoralists are devoting their life in the upkeep and maintenance of native breeds of animals. These animals adapt to the region or environmental situation and provide livelihood support to the local communities. Such local breeds are the result of many hundreds of years of natural selection and selective breeding practices followed by the traditional pastoral communities. The breeding goal was not primarily to increase the productivity in terms of meat and milk but according to the local requirements viz., survival under high environmental risks, draftability, good mothering instincts, herd ability, loyalty to the owner, ability to walk long distances or climb steep slopes, aesthetic or cultural preferences etc.

Some examples of pastoral groups responsible for conservation of breeds or species are listed below:

Pastoral Communities	Local Breeds Conserved
Todas of Nilgiris	Toda buffalo
Irulas of Thalavadis	Toda buffalo
Van Gujjars of Himalayas	Local buffalo
Raikas in Rajasthan	Naricattle, Marwadi camel, Merwadi camel (one humped), Bagalisheep, Sonadi sheep, Boti sheep, Tepli sheep, Kali goat, Majjetti goat
Rabaris / Maldharis in Gujarat	Gir and Kankrej cattle
Rath Muslims in Rajasthan	Rathi cattle, Sahiwal cattle
Ethnic communities of Tamil Nadu (Naicker, Udayar, Pallar, Konar, Mooppar, Reddiyar, Thevar)	Umbalacherry cattle breed, Vembur sheep, Meicherry sheep, Sandynella sheep, Kachakatty karuppu sheep.
Dhangar Gowli in Maharastra & Karnataka	Buffalo, Angar cattle breed
Dhangar / Kuruma / Kuruba of Maharashtra, Karnataka and Andhra	Deccani Sheep / Osmanabadi, Sanganneri goat breed
Gaddis in Shiwalik hills	Gaddi sheep / goat breed

4.Pastoralism and Holistic Resource management

Pastoralists under different environmental conditions often migrate from place to place. They usually follow rotational grazing system that is congenial to the local situation. (For example: after the harvest of wetland paddy when the season is dry i.e. Jan 15 – July 30, Umbalacherry herders in Tamil Nadu promote “*Kedai*” (temporary herd pooling from farmers) for community grazing for a period of 6 months; when the south west monsoon begins coinciding with the cropping season the Raikas in Rajasthan migrate along with their animal herds for distant pasture land .

The nomadic Maru Raikas in Pali District of Rajasthan take camel herds (2-5 families form herding groups with 11-20 camels per herd). The herds are grazed on various types of lands, including fallow or harvested fields, *gocher* (village grazing grounds), *oran* (pasture land devoted to a deity), so-called “wastelands” (uncultivated land under the jurisdiction of the state) and, during the rainy season, the forests of the Aravalli Hills.

The majority of the pasture lands which have been existing for many centuries were very recently converted into monoculture plantations planted with introduced plant species (Eucalyptus in Nilgiris, Pines in Siwalik Hills and *Prosopis juliflora* in Kutch region are typical examples), thereby threatening pastoralism. Pastoralists contribute to grazing which is important tool to manage ecosystem viz. watershed, cropland and forests.

In some forest zones, too much growth of grass leads to wildfire or pasturelands without animals are poorly maintained ecologically compared to those with animals. Dunging, urinating, salivating and trampling of animals play a complimentary role in managing the ecosystem (Allan Savory 1990). The interplay between domestic animals versus wild animals, domestic animals and forests, domestic animals and cropping lands, domestic animals and local cultural richness are reviewed based on ground realities :

4.1. Domestic Animals, Wild Life and Natural Ecosystems

Local breeds often have a history of interaction with wildlife and habitats have evolved through grazing pressure from both wild life and livestock. Local breeds and species may therefore even be necessary to maintain an ecological balance and to conserve the specific ecosystem (Kohler - Rollefson 2000). In the Bharatpur bird sanctuary in Rajasthan, buffaloes were initially evicted from the park area. However without their grazing

pressure, certain types of vegetation started to over grow bird-nesting habitats. This led to readmission of buffaloes (Kohler - Rollefson 2000). With regard to Kumbalgarh sanctuary (Rajasthan) pastoralists maintain that browsing by camels actually increases the tree growth rates (Kohler - Rollefson 2000). Forest fires caused greater damage in ungrazed areas covered with tall grasses in Giant squirrel sanctuary areas from where 'Malaimadu ' cattle are being evicted from forests. (Paulraj 2000)

The increase in population of wild animals occasionally makes use of domestic animals (calves of Malaimadu cattle preyed upon by panthers) in their wild habitat for their survival. In Nilgiris annually 100-150 Toda wild animals like tigers prey upon buffaloes. In Kutch area pasture land and nomadic Rabaris are responsible for conservation of carnivore biodiversity (Indian wolf, striped hyena, caracals, desert cats, jungle cats and leopards) which survives basically the traditional land use practices and sheep herding evolved and preserved by cultures and traditions over thousand of years (Jhala - 2002). A proper understanding the survival pressure for keeping a balance rather than exclusion of domestic animals from forest grazing is necessary looked and experimentation on a co-existence policy needed. Joint conservation of both wild life, local breeds through people participation needs to be promoted.

4.2 Pastoralism and Agro ecosystem.

Pastoralists follow rotational grazing system, which is congenial to the local ecosystem. For example farmers send ' Malaimadu ' cattle sent for forest grazing when crop is cultivated in the plain lands by farmers. After the harvest of crops cattle are allowed to graze the left over stubbles on the harvested field. During that time cattle are used for penning which in turn increases the fertility of the soil. In Cumbum valley without the large quantity of dung supplied by ' Malaimadu ' cattle, the land may not sustain its productivity, which produces cash crops such as paddy, grapes and banana. The sustainability is a matter of land and cattle existing together and depends upon each other for their mutual up keep. Herders derive income through sale of dung and it sustains their activities in the long run. There is a symbiotic relationship between sedentary farmers and transhumant pastoralists, which promote ecological agriculture and survival securities.

4.3. Pastoralism and Joint Forest Management

Joint Forest Management, which is supposed to be participatory resource management, is actually threatening the conservation tradition of the pastoralists. For example all places where village forest committees (VFCs) have been promoted in Tamil Nadu, watershed work is carried out by planting of saplings without consulting the local pastoralists / herders. With total closing of traditional grazing area as well as pathways for passing over the planted site is totally blocked. All of a sudden grazing permit is stopped and herders are fined if their animals enter the traditional pasture land (now converted into planted area). In all the VFCs the forest range officer and District Forest officer carry out the watershed work directly without channelising the funds through VFC account. Therefore in the large-scale afforestation work local people especially pastoralists and herders are alienated, neglected and threatened.

A population of 12,000 cattle of ' Malaimadu ' breed is on the verge of extinction mainly due to this type of attitude and conflict in Srivilliputhur, Rajapalayam Taluks of Virudhunagar District and Peraiyur Taluk of Madurai District. Similarly ' Dhangar Gowlis ' tribals in north Karnataka are considered as enemies of forest due to the local cattle owned by them. Raika pastoralists owning camels are facing problems in Kumbhalgarh Reserve Forests in Rajasthan(According to Kohler - Rollefson (2000) camel population of in India is 9,06,000 during 1997 compared to 9,56,000 in 1992; the number of young camels is decreased by more than 50 % signaling dramatic decline in breeding activities attributed to problems in access to pasture land).Since 1993 Gaddi shepherds and Van Gujars got excluded by the Governments of Punjab and Himachal Pradesh when they set up Joint Forest Management; their traditional role as partners in participatory use in grazing has been nullified and as a consequence their commitment to managing biodiversity and sustaining tree and grass cover has eroded (Minoti Chakravarty- Kaul 2002).

4.4. Pastoralism and Common Property Resource Management.

Poor management of common property resources affects the access to grassing and quality drinking water. This happens with encroachment and also due to less attention by concerned Government Department.

(Examples : In kutch area of Gujarat introduction of Prosopis juliflora spread the entire area about 20 years back which affected the grazing land. In addition entry of pastoral groups from other region increased competition and put pressure on the already reduced pastureland and water. In Rajasthan, the allotment of **gochar** land for private use at the discretion of District collectors is undercutting their resource base of grazing land. In Toda tribal settlement areas viz. Mandus of Nilgiris the drinking water reservoirs are polluted by Industries viz., Rallis India, Hindustan Photo Chemicals Ltd.).

The Savanna grazing land which occupied an area of rolling down 60 km length and 40 km wide in The Nilgiris is on the verge of disappearance due to the wrong afforestation policy of the Forest Department by introducing species like eucalyptus, pine tree and wattles. About 85 percent of the original pasture ecosystem has been converted into planted area (the current area of grassland is reduced from 29,875 ha to 4700 ha) depriving the traditional grazing rights enjoyed by the Toda tribe over centuries (The Toda lands covering an area of 2948.67 acres is encroached by Forest Dept. through eucalyptus plantation). Very recently a dialogue initiated with the District Forest Officer (Ooty – North), the Forest Dept. is likely to consider to cut down eucalyptus plantation and return the Toda lands for reverting to original pastureland (Acharya 2002). In Umbalacherry village pasture land over an area of 105 acres is encroached upon by local vested interests which is crucial in the breeding tract of Umbalachery breed in Nagapatinam District of Tamil Nadu.

Construction of dams affects the pasture land and a typical example is construction of Ranjit Sagar reservoir across the river Ravi inundated large part of *Shamilat van* which excluded the Gaddi shepherds and graziers who had used these forest pastures as common property resources since time immemorial (Minoti – 2002).

4.5 Pastoralism and cultural links

Pastoralism, culture and biodiversity are closely linked. Therefore conservation of biodiversity needs to recognize traditional life styles, their values, attitudes and social institutions imbibed in the life of ethnic communities. Many pastoral societies have instituted restrictions, even taboos on selling female breeding stock to somebody outside the community because they consider it their capital (Male breeding bulls are maintained at Village level by the community in many villages of Rajasthan or maintained

as temple bull in some villages of Tamil Nadu; Toda buffalo bulls are considered as sacred and freely let in the forest. Male camels are gifted as dowry among Raika pastoralists ; when somebody lose their animals due to out break of disease or any other reason other members of the community contribute female animals as free donation or at very reduced price).

Herders owning small number of animals are pooled together for the purpose of sharing a common bull and ' Kedai ' (bigger size of migratory herd ranging from 200-500 animals) is promoted as breeding institution. Buffalo cult is prevalent among Toda tribes who consider their buffalo as sacred creature more valuable than gold ; buffaloes are given as gift during the time of marriage, child birth or during funeral (1 buffalo is sacrificed during the death of the tribal members) etc. The Raikas have a strong cultural association with the camel; according to the Raika myth of origin their forefather was created by Lord Shiva for the purpose of looking after the first camel. Camels form an integral part of their wedding ceremony and continue to be given as part of the dowry. The Kuruma pastoral community in Andhra Pradesh are specialized in dance and story telling known as *Ogu Katha* (Sagari 2002).

Documentation of indigenous knowledge, social institution and cultural affairs of pastoralists and by recognising and incorporating them in development work will strengthen conservation tradition. Undermining these aspects lead to hollowness of our approach without rooting in the very base of development.

5. Factors threatening Pastoralism and Biodiversity

Pastoral nomads or animal stock herders who depend upon animal rearing as their traditional life style are facing problems. Such problems if unresolved will certainly lead to erosion of their culture and loss of biodiversity. The factors responsible for causing erosion of their culture and biodiversity can be examined under the following heads:

- i. Official perceptions of Common Property Resources as 'wasteland'
- ii. Change in Cropping Pattern.
- iii. Existing Breeding Policy.
- iv. Role of Government Actors and Policy.
- v. Bilateral Funding Programme
- vi. Present Education System.
- vii. Poor Animal Health Care Services to Herders

5.1. Official Perception of Common Property Resources

Pasturelands have officially been viewed as either degraded lands or wastelands. Therefore Forest Department has introduced new exotic species under the false perception of greening the 'wasteland'. Instead of conserving the local grass species of that ecosystem, totally different species have been introduced leading to loss of valuable silvipastoral systems prevalent in that locality. Before undertaking such conversions local people were not consulted. Lack of proper land use planning both at state level and national level poses a serious threat to the traditional resource rights of indigenous communities and livestock keepers as well as to conservation of local biodiversity. There is no understanding of the use of grazing by animals as a tool for ecosystem management.

5.2. Change in Cropping Pattern

Introduction of Irrigation channels in some parts of the country especially in Rajasthan and in other region resulted in change in cropping pattern (from dryland millets / pulses to irrigated cash crops), intensive cropping which affects fallow land grazing by herds maintained by pastoralists. The introduction of hybrid crops have also brought with them rapidly multiplying exotic weeds such as parthenium, which have replaced local grasses in many places rendering grazing lands useless (ANTHRA Report – 2002).

5.3. Existing Breeding Policy:

Existing breeding policies of many states are only designed for maximizing milk and meat production. Official breeding policy aggressively promotes cross breeding of local genetic stock with exotic breeds is destroying our gene pool of local breeds preserved by pastoralists. Government subsidies and soft loans are directed at improving crossbred animals while neglecting local breeds. Conservation of indigenous breeds was not at all reflected in the policy for many decades. While evolving such policy all stakeholders were not involved due to which some of the indigenous breeds have already disappeared. (Example: under the subsidized "Calf rearing Scheme" of Tamil Nadu Animal Husbandry programme only exotic breeds are included). Govt. is not taking steps for providing quality bulls in the breeding tract of local breeds viz. camels in Rajasthan , Umbalachery cattle in Tamil Nadu etc.

5.4. Role of Actors of Conservation- Government Functionaries

Herders and pastoralists have always been viewed as enemies of forests by forest officials at field level. The role played by pastoralists and herders are not properly understood by many functionaries of Government Department. In order to protect the forest ecosystem there is always a tendency to exclude the animal conservers by threatening, implicating and penalizing them instead of initiating a process of dialogue and resolution of conflicts. The Animal Husbandry Department, which is supposed to address the problems or difficulties faced by conservers, confines its activities only to the provision of veterinary and insemination services. When real problems faced by pastoralists are not addressed the secondary services extended by Government Department become unwanted and superficial.

The role of facilitator in encouraging co-existence, holistic resource management is not at all understood by the hierarchy oriented Govt. functionaries. They lack participatory skills. The existing social institutions and knowledge of local breeding practices were not documented by the Govt.actors. This has led to the implementation of a blue print model perceived to be superior instead of facilitating a process approach in all developmental work.

5.5. Bilateral Funding Programmes

Conservation Projects or Joint Forest Management projects attract a lot of donor funding. When the work is implemented by the existing Govt. structure, which is not, transformed from its conventional attitude this is dangerous. Govt. bureaucracy is often inflexible in not allowing participation by NGOs and self initiated community organisations. Lack of training and orientation of forest officials lead to professional ego, selfishness and redtapism. For example in the Rs. 500 crore JFM project of Tamil Nadu even 1 percent money has not been given to expert NGOs for facilitating participatory approaches; external evaluators / NGOs have not been included for evaluation of this programme over the last 5 years of implementations (1997 – 2002); youth are officially designated as NGOs for monitoring Village Forest Committees instead of NGOs (Vivekanandan – 2002).

In each VFC village Govt. is spending Rs. 30 lakhs for watershed development directly by Forest Range Officer and District Forest Officer without channelising through VFC account. Massive funding programme without any human face only alienate local people and the very survival of their local breeds instead of integrating them for holistic approach. These programmes eventually snap the traditional resource rights (land use rights / wateruse rights) of pastoralists and forcing them to change their life style.

5.6. Failure of Education System

Govt's policy of bringing literacy at grassroots is laudable. However because of good education most educated youth are consciously or unconsciously oriented towards seeking jobs outside or even prefer to work as unskilled labour in cities. The educated youth are not interested in continuing with the traditional style of life and only interested in migrating to cities. Labour is therefore becoming costly and pastoral families are finding it difficult to maintain their stocks economically. Globalisation of market is also affecting educational policy and leading to speedier deterioration.

In the educational system the curriculum (at school level as well as in the syllabus of agriculture / veterinary / forestry colleges) does not have content on biodiversity / conservation of indigenous animal breeds or indigenous veterinary medicine practiced by local healers. Fresh veterinary graduates are not at all motivated to work in remote areas by providing primary health care delivery for animal herds maintained by pastoralists.

5.7. Poor Animal Health Care Services

Present veterinary services are designed to suit the needs of sedentary livestock keepers and neglect the pastoral communities. There is hardly community animal health care workers in remote areas to attend primary health care or vaccinating the migratory herds to prevent the mortality and morbidity of animals and also against transmission of disease. For example abortions and Trypanosomiasis in camels can be prevented by proper epidemiological diagnosis and preventive treatment.

6. The Proposed Action

The Proposed action plan for preserving pastoralism, holistic resource management and biodiversity conservation is summarized below:

Goal : To recognize and enhance the role of pastoralists, tribals and livestock keepers in conserving local livestock breeds of animals.

Strategies and Action Proposed:

i) Providing Access to resources (pasture land and drinking water)

Restoring traditional resource rights of communities (gochar lands in Rajasthan, 'Meichal' purambokku land in Tamil Nadu, British / Jameen recognised pasture lands allotted for traditional pastoralists such as Raikas, Toda tribals, etc.,) Natural ecosystem restoration programme by removing some of the exotic tree species and returning the land for original pasture land with local species of grasses will help pastoralists in restoring their traditional rights. (In Nilgiris Tamil Nadu Forest Dept. should expedite removal of eucalyptus and return the Toda land for their using as original pasture land ensuring social and livelihood securities for Toda pastoralists ; the District Collector of Nagapattinam District – Tamil Nadu State, shall implement Nagapattinam District Court order (Rights appeal No. 10/2001, dt. 14.12.2001) for getting back 107 acres of pasture land (at present encroached by vested interest) meant for cattle grassing in Umbalacherry

Village. This will give moral support for the cattle herders who are depending upon Umbalacherry cattle breed for their livelihood).

- Participatory management of common property resources, ensuring that nomadic pastoralists , sedentary herders,local users are also involved. For this mapping of existing rights and use patterns must precede the development of any new plan for an area.
- Joint conservation management emphasizing co-existence of wildlife, domestic animals and local people through process approach rather than top down approach.(Task for Chief Wild Life Warden in respective States)
- Conflict management between nomadic groups and local people through participatory process and networking. (Task for NGOs)

ii) Reviewing existing breeding policy through consultative process involving all stake holders.

- Promotion and development of local institutions and breeders associations (Tasks for the NGOs, Animal Husbandry Dept., National Bureau of Animal Genetic Resources, Karnal, NDDDB, Anand).
- Undertaking impact study of breeding policy implemented for the last 5 decades. (Tasks for NGOs, State Level Biodiversity Forum).
- Documenting local institutions conserving livestock breeds (Tasks for NGOs / volunteers of communities, ICAR and Agricultural Universities)
- Recognizing livestock keepers conserving local breeds, supplying good quality bulls and involving them in future plans.(Ministry of Agriculture, Central Herd Registration Scheme)

iii) Role model facilitation for Govt. Functionaries

- Training, orientation and exposure visit for Govt. functionaries for purpose of initiating participatory approaches in development work. (For officials of Forest Dept. and Animal Husbandry Dept.)
- Implementation of watershed or conservation work through CBOs (Community Based Organisations) and peoples organisations instead of direct implementation by Forest Department (linking PRIs, SHGs , CBOs and Herders groups).
- Involving NGOs for social mobilisation and training.
- Documentation of indigenous knowledge and grass roots innovation for delearning and shedding of professional ego (Tasks for NGO's, Faculties of University and Animal Husbandry Dept and Junior officers of DRDA)
- Enhancing and strengthening the capacity of local institutions and herders / pastoralists groups (Tasks for NGOs and DRDA).

v) Providing Intellectual Property Rights and Rewards for Conservers of local breeds

- Recognition and rewards for individuals or groups conserving outstanding local breeds by establishing a national register of local breeds by recognizing the intellectual property rights of conservers.
- Documentation of case studies on improvement of local animals by using local breed bulls over decades

- Revitalizing social institutions responsible for conservation
- Improving economic situation of local livestock conservers (developing niche markets for the special products of pastoral communities viz. camel milk marketing for Godwar Raikas ; developing infrastructure like office & telephone facilities for promotion of “camel rides” for self employment of local youth to attract tourists during festival occasion)
- Awareness and support for marketing the products of indigenous animal breeds.
- Supporting animal health delivery in favour of pastoral communities .
- Simplifying procedures for registering the outstanding breeds maintained by herders which in turn will protect IPR in favour of animal conservers.
- Simplifying procedures for quick compensation to herders for the loss due to predation by wild animals (task for Chief Wild Life Warden of respective states).

vi) Bringing Changes in the Educational system

- Incorporating indigenous knowledge (indigenous veterinary medicine) and biodiversity conservation in the curriculum of schools , agricultural universities and veterinary educational institutions.
- Promotion of value based education instead job oriented at school level. School education should impart right motivation so that educated youth will return to their villages and contribute towards holistic development.
- Mobile schools / flexible curriculum for children of pastoral communities.
- Providing fellowship or flexible credit facilities for fresh veterinary graduates interested in private practice in rural areas for extending primary animal

health care in remote areas / pastoral region enabling conservation of domesticated biodiversity.

vii) Improving Primary Animal Health Care in Pastoral Areas

Livestock extension services shall aim to prevent the mortality of animals and improve primary animal health delivery in remote areas especially where pastoral communities are keeping their herds. . (Dept of Animal Husbandry in Rajasthan shall extend proper epidemiological diagnosis and treatment against abortions and Trypanosomiasis in camels).

The model of Community Animal Health Care Workers or Animal Link Workers experimented by Tamil Nadu Animal Husbandry Department under DANIDA Scheme or the model developed by NGOs like ANTHRA, BAIF ,AFPRO can be followed by Dept.of Animal Husbandry.

viii). Networking, Documentation and Dissemination

- Networking with NGOs, CBOs(Herders groups), and Scientific Institutions for awareness raising and dissemination of information (including description and characterization of local breeds) about preservation of local livestock breeds.
- Economic empowerment of poor livestock keepers through linkage with various actors and identified niche markets. Capacity building of the pastoral groups to develop their own self-governing associations which will involve in decision making and also add value to their produce prior to marketing.
- CENSUS of animal population shall include separate figures for local breeds . Census figures of livestock population are to be released quickly to enable to undertake field level research on population trends. (Directorate of Economics and Statistics / Ministry of Agriculture and Animal Husbandry).

Summary

Pastoralism is the traditional life style still existing among many communities. Pastoral communities are preserving domestic animal biodiversity through their way of life in tune with local ecological situations.

In marginal environments local livestock breeds are crucial for sustaining rural livelihoods. These breeds provide a wide range of products or value to local people. These animals require relatively low inputs in terms of fodder, management and health care compared to cross breed animals. However wrong perception of resources, political backing for cross breeding with exotic breeds for the wide diversity of ecosystems, lack of awareness on domestic animal biodiversity and poor animal health care delivery have already resulted in the disappearance of some of these breeds and many more are threatened.

Understanding holistic resource management will require learning from indigenous knowledge and social institutions responsible for conservation of local livestock breeds. Rotational grazing, herding and impact of domestic animals is one of the tools of ecosystem management and domestic animals contribute to the well being of human, wildlife and forests.

A viable action plan for revitalization of pastoralism and biodiversity conservation shall take into account providing access to pasture land and animal drinking water, restoring traditional resource rights, joint conservation management, participatory planning, involving local stake holders while framing location specific breeding policies, recognition, rewards and compensation for conservers / herders, ensuring delivery of primary animal health care in remote areas, marketing linkage for animal products and networking for documentation and dissemination of indigenous knowledge based sustainable animal production .

Ultimately there is a need for integrating the rights and needs of pastoral communities in JFM / CFM / State Land Use Planning. This will also ensure treating the natural grasslands as components of ecosystem and regulated /rotational grazing system as an important tool for sustainable management of resources. . Therefore the natural ecosystem restoration programme undoing some of the past insensitive policies should be given attention on priority basis (such as deforestation of exotics in the Nilgiris, Siwaliks, Kutch should be considered for conservation of traditional land use practices) .

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