

Learning Programme on Animal Genetic Resource Management

Submitted to: The Development Fund, Norway

Submitted by: Regional Coordination Unit, CBM SA Programme, LI-BIRD



Photos: Sandesh Neupane/LI-BIRD

Pratima Rana and Rachana Devkota

Summary

The “Learning Programme on Animal Genetic Resources Management” was held from 28 November to 4 December 2012 in Hyderabad, India. The seven days long programme was jointly organized by ANTHRA and Local Initiatives for Biodiversity, Research and Development (LI-BIRD), with financial support from The Development Fund (DF), Norway. ANTHRA is one of the country partners of Community based Biodiversity Management South Asia (CBMSA) Programme in India. The learning programme was a part of the CBMSA regional programme to strengthen the country partners by organizing different capacity building programmes. This programme was hosted by ANTHRA at its office premises in Hyderabad.

This regional level learning programme was a part of South South exchange programme between DF country partners from Ethiopia, Guatemala, Malawi and CBMSA partners from Bangladesh, India, Nepal and Sri Lanka. There were altogether 17 participants representing eight different countries.

The main purpose of this learning programme was to strengthen the theoretical and practical skills of field workers and programme officers on participatory methods on Community based Management of Animal Genetic Resources. This learning programme was divided into two sections as I) theoretical concept understanding and II) practical skill development by visiting the field. Key learnings and output was briefly discussed below.

Theoretical Concept Understanding Sharing Experiences on AnGR

The first 3 days programme was held in ANTRHA’s office to acquire theoretical knowledge on management of AnGR. On the very first day, a series of presentations regarding country specific presentation on AnGR scenario and demonstrations of the stepwise intervention ongoing for conservation, applied participatory tools, management strategies, livestock production system, government policies and challenges were given by each country representative.

Then, group work was organized to compile the commonalities and challenges faced by community in each country.

Orientation on Participatory Approaches on AnGR
The second day started with the presentation of Dr. Sagari R. Ramdas on “The Global Scenario of Livestock Production, Small Farmers and Pastoralists and Indigenous Breeds”. Dr. Sagari emphasized on the global scenario of commercialization in livestock production system thereby displacing small farmers’ and indigenous peoples’ right on indigenous breeds. The presentation was followed by a documentary film produced by ANTHRA entitled with “Breeding Invasions: Livestock at Stake”. Through this documentary Dr. Sagari further highlighted the voices of small farmers, indigenous people and pastoralists from Andhra Pradesh and Maharashtra. The documentary succeeded to capture the current situation of threat to livestock livelihoods.

The participants received technical orientation and materials about an approach to mapping indigenous animal genetic resources, which was developed by ANTHRA. There was presentation and detail discussion on its four parts. The first part was about social and agro-ecological context, local production and cultural context. The second part was about identification of top breeders in the area, breed characteristics and data and population size and trends. The third part consisted of breeding mechanism and strategies, production performance and reproductive performance. The last part

explained about the chances for sustainable use and conservation, problem ranking, production losses analysis by analyzing specific areas of loss and interest in revival and conservation by local community. Presentations show the approach practiced in the field have worked quite well. On the third day the orientation on remaining LIFE tools and Animal Calendar Preparation was made by Dr. Sanyasi Rao (Sunny) followed by a discussion and practical work on the same. Just after that, a brief note about field was given by ANTHRA staff.

Practical Skill Development

As a part of practical skills development, participants went to field visit in two groups. The first group went to Chittoor district which is 600 km from Hyderabad while second group went to Medak district only 60 km from Hyderabad.

Observation from Field Visit to Medak District

We visited five different villages with the objective of learning about participatory approaches on animal genetic resource conservation in Deccani breed, which is being implemented by ANTHRA for over a decade. Key observations are briefly described below:

AnGR Mapping: We learned the theoretical and practical aspects of AnGR mapping techniques during this workshop. ANTHRA has developed this mapping technique, which includes the key characteristics of breeds, how they are managing the breeds at the local level, what is the fodder and water availability in community along with socio-cultural aspects of that community. It is somewhat similar to Community Biodiversity Register (CBR) but it doesn't have any specific form/format as that of CBR. We practiced these tools with Deccani sheep growers.

Animal Health Calendar: We also practiced the animal health calendar developed by ANTHRA in field. This is an annual calendar full of drawing which reflect the key parameters to be recorded to analyze the breed's performance like health status, population, reproduction parameters, etc. This can be recorded by village peoples even without formal education. In the village, communities are keeping record in their own level. ANTHRA compiles data from community level once a year and conduct analysis for monitoring the breed performance and its status in community level.
Open Nucleus Breeding Approaches: Deccani



Photo: Sandesh Neupane/LI-BIRD



Photo: Sandesh Neupane/LI-BIRD

breed population started dwindling due to being replaced by the government scheme of promoting Red Nellore breed. Deccani sheep is the native of that locality and stress tolerant. They flourish on semi arid area with less water and less green grasses as compared to other breed like Red Nellore sheep which needs more water and fodder as available in its native area. Thus, ANTHRA is promoting open nucleus breeding approaches (an approach and strategy for selection according to specific desired traits) in conservation of Deccani sheep. Under this participatory approach, ANTHRA started to organize pastoral communities whose livelihoods depend mainly on this breed. Communities are aware of its importance and encouraged to increase the number of pure Deccani breed in their flocks. Communities are supported to identify the pure Deccani ram and encouraged to distribute this among communities in order to increase the pure Deccani breed in village. We learned the process of how to identify the pure breed, how to increase the purity in herd through this visit. Improving Livestock Health: ANTHRA initiated its work with the community to address health problems of livestock which included accessing government health care services as also re-integrating indigenous and homeopathic practices to prevent and treat diseases. In this regard, local resource persons have been trained and mobilized to provide the vaccination and other basic treatments to livestock.

Initiation of Concept of National Breeding Centre for Deccani: ANTHRA supported communities to map the Deccani breed in depth in the district and identified that there is two villages with pure flock. Now ANTHRA is working to establish these two villages as national Deccani breeding centre as these have pure

Deccani rams. ANTHRA is also helping communities to raise the pure Deccani ram in separate herd and distributing them to separate flocks later on in order to have pure and good quality Deccani breed. We also held discussions with Sheppard to learn more about Deccani sheep as well.

Revitalizing The Gongadi (Blanket) And Linking To Market: ANTHRA is trying to revitalize the gongadi (local blanket made from wool of Deccani breed), which was on the verge of disappear from that village. This is one of the interesting things that we learned in the field. We met Sheppard communities who are involved in the gongadi production process. For carding (making wool more fine), communities used to do it by local way, which was more time consuming. Thus, ANTHRA supported communities with a carding machine, which is run by Sangham and now community's time is saved and also wastage of wool is reduced as compared to traditional way of carding. Local young people are trained on producing gongadi as there are just 2 people now in village who weave the gongadi. These locally produced gongadi have very high value as compared to other, thus ANTHRA is supporting for its promotion and sustainability.

Challenges On Local Breed Rearing: During the discussion with communities, we realized that there are some key challenges to rear Deccani breeds in community level due to introduction of new exotic or new breeds, fodder and water scarcity, less communal land for grazing due to increased rate of fragmentation and privatization of land and less interest of youth.

Observation from Field Visit to Chittoor District Animal Health and Fodder Calendar: We visited Mandamwaripalli and Pulusuguntalu village and practiced animal health calendar of Jodipi Nellore



Photo: Sandesh Neupane/LI-BIRD

Sheep and Natti goat to maintain annual health status of livestock. We also practiced annual fodder calendar to document the period of locally available fodder and period of fodder scarcity. Through this calendar, we can plan for the fodder enhancement activity. Besides, we drew out resource map to know the status of natural resources of the villages, which is useful to plan fodder management and natural resource management.

Visit to a Dairy Cooperative: About 20 years ago there were only local cattle of Hallikar breed in the village. Hallikar is the predominant breed of cattle in south India. The Hallikar is a draft breed. The bullocks are strong, spirited quick and steady in fields. Therefore, it specially reared for agricultural purpose. Since, it is native from South India, it flourish with less water, fodder and adapted to the climate of this area.

Gradually, the government introduced cross-breed cows through several programmes. The community has been gradually influenced through the programme and started buying them one by one and the Hallikar breed has gradually eroded. Since 1997 rains have become erratic and less in quantity, which has resulted in decline in agricultural production, so most of the farmers have turned towards other livelihood sources like dairying. Now, the main enterprise of community of Mandemwaripalli village is milk production and they sell the milk to private dairy at INR 16/litre. Cross bred cows give high yield but equally need more water, more feed and fodder than local breeds. The cost of production comes to INR.25/litre including the labour charges, so rearing cross bred cattle is not profitable. The community is under the pressure of loan so they are struggling to look for either alternative income generation or leave the enterprise. However, both alternatives are not in favour of them. Because most of the household work is done by women, if they leave rearing cows, even women could not go out for alternative enterprises. Thus, they are keeping cross bred cows. To improve the situation, ANTHRA facilitated community to form a dairy cooperative named sangham about three months ago to work collectively for the benefit of community through dairying.

The sangham with the support of ANTHRA succeeded for the intervention of marketing channel for the milk. Now, they collect milk from members at INR 21/litre and sell the milk in nearby school as well they started selling through sales outlet for remaining milk in nearby city in Rs. 28/litre. Farmers are getting

INR 21/litre, which is higher than the price they get from private dairy. So, the farmers are in benefit, equally Sangham is succeeded to get profit. They are utilizing the revenue for the administrative expenses of Sangham. The Sangham was started with only 6 members but by this achievement, gradually farmers are attracted to become member of the Sangham. Now it has 41 members.

Practicing Some Tools of AnGR Management: Main constraints and challenges for the conservation of livestock were identified through problem ranking exercise. This involved discussion with farmers. During the discussion it emerged that untimely change in weather caused severe drought and change in cropping pattern, thereby intensified fodder scarcity in turn threatening pastoralist community. They are compelled to rear cross breed cows for high milk production because it generates some cash income to pay their loan. Therefore, the major challenge is to influence the community towards conservation of Hallikar local breed, which gives comparatively less milk than cross breed cows.

Discussion on Policy Issues: The Sangham also succeeded in lobbying with government for securing farmers' right of access to the forest through Forest Right Act 2006, negotiating local stakeholders for its traditional grazing paths with the support from ANTHRA.

Reflection from Field and Session Closing: After field visit, there was a reflection from each group. Both the groups interacted with each other to share their learning. Action plan for AnGR was developed and shared in plenary and session was closed with cultural events.

Action Plans and Way Forward of CBM South Asia Programme

ANTHRA, India

Indigenous Hallikar Cattle Breed Conservation in Chittoor District: Strengthen Sanghams towards conservation of Hallikar breed; Integrate of Hallikar breeds into local agriculture system; Plan with community towards improving Hrrlikar breed; Make a strategic plan towards addressing fodder and health problems to conserve Hallikar.

Deccani Sheep Conservation In Medak District: Strengthen shepherds sangham through organizational development process; Closely work with pure Deccani sheep breeds towards development of future breeding rams; Adapt community knowledge on improving sheep breed; Share and exchange breed conservation strategies to other shepherds in the other parts of the district; Revive gongadi- through strengthening local market system.

UBINIG, Bangladesh:

- ◆ Sharing of documentation process with organization and discussion in use of tools
- ◆ Adaptation of the Flock dynamics calendar
- ◆ Mapping of Local cow breeds and poultry in AnGR working sites
- ◆ Strengthening the local cow breeds in CBM sites

Green Foundation, India

- ◆ Incorporating livestock conservation tools and methodologies
- ◆ Strengthening work with Malnadgidda cow breed
- ◆ Community sensitization towards the indigenous breeds

Green Movement of Sri Lanka, Sri Lanka:

- ◆ Sharing learning of workshop in organization and field staff
- ◆ Piloting health calendar and mapping in CBM sites in local poultry
- ◆ Developing long term plan on AnGR with the support from ANTHRA and RCU

LI-BIRD, Nepal

- ◆ Learning outcomes and sharing to all staffs and relevant persons
- ◆ Breed Mapping of Khari goat, Sakini poultry, Hurrah pig in working sites of CBM
- ◆ Animal Calendar preparation by highlighting major problems in AnGR working site
- ◆ Publications such as leaflets, brochure and other relevant materials on AnGR production
- ◆ Continue working with the linkage of conservation with livelihood.

Regional coordination unit, CBM SA

- ◆ Facilitating partners to develop country level work plan on AnGR especially for Bangladesh and Sri Lanka
- ◆ Working with ANTHRA to finalize the plan and initiate the AnGR work in partner's country
- ◆ Organize a country specific capacity building and monitoring visit in collaboration with ANTHRA
- ◆ Frequent follow up and will provide necessary support to strengthen AnGR activities

Recommendations

- ◆ CBMSA partners can apply the mapping approaches and animal health calendar techniques in field to document the record on breeds.
- ◆ Partners can collaborate with local government for vaccination and train some village people in the same way as ANTHRA is doing.
- ◆ Regarding the learning, overall it was good, but it would be good if there was more time for reflection on field visit and developing action plan for each country.

Annexure:

Annex I: list of participants from CBM SA

S.N	Last name	Country	Gender	E-mail
1	Chaminda Lal Kumara Wakkumbure Gedara	Sri Lanka	M	clkumara@gmail.com
2	Dhammika Priyadarshani weerakoneWeerakone Mudiyansele	Sri Lanka	F	clkumara@gmail.com
3	Ramesh Hegde	India	M	rameshkanagod@gmail.com
4	Shrikant S. Ravalogi	India	M	ssrmnpm@gmail.com
5	Linga Sunyasi Rao Makavarapu	India	M	sunnyrao@gmail.com
6	JainalAbedin Khan	Bangladesh	M	arshinagar.ubinig@gmail.com
7	Rafiqul Hoque Tito	Bangladesh	M	paddaboti.ubinig@gmail.com
8	Sandesh Neupane	Nepal	M	sandesh@libird.org
9	Birendra Chaudhary	Nepal	M	Mr.birendra@yahoo.com
10	Pratima Rana	Nepal	F	prana@libird.org
11	Rachana Devkota	Nepali	F	rdevkota@libird.org

Annex II : List of participants from DF partner country

S.N	Last name	Country	Gender	E-mail
1	MasreshaYazew Andarge	Ethiopia	M	mareshay@gmail.com
2	Sergio Romeo Alonzo Recinos	Guatemala	M	alonzo.sergio@gmail.com
3	Andres Vicente Sica	Guatemala	M	alonzo.sergio@gmail.com
4	Sahid Khalid	Somaliland	M	khalidSahid@hotmail.com
5	Winfred Chanza	Malawi	M	chanzawinfred@gmail.com

Annex III: Programme Schedule

Learning Programme on Animal Genetic Resources Management,
28th November to 4th December 2012, Hyderabad, India

Time	Activity
Day – 1 : 28th November 2012	
9:00- 11:00 am	Welcome and Introductions Expectations of the participants Overview of the 7 days programme
11.30 am to 1.30 pm	Country wise presentation on Livestock Production systems, role of livestock in peoples Livelihoods and factors threatening the local livestock breeds Presentations by 4 Countries (20 min + 10 min discussions)
1.30-2.30	Lunch
2.30-4.30 pm	Country wise presentations continued4 countries
4.30- 5	Tea Break

5 – 6 pm	Flagging the key points and issues from all the country presentations, discussions and summarization
Day 2: 29th November 2012	
9.0-10 am	The Global Scenario of Livestock Production, Small Farmers and Pastoralists and Indigenous Breeds –Session facilitated by Dr Sagari R Ramdas
10 – 11. 15am	Screening of a movie – Breeding Invasions Followed by discussion
11.15 - 11.30 am	Tea Break
11:30 -1:30 pm	Breed Conservation- What do we Mean Overview of breed documentation – Adapting the Life Method. Part I - Socio cultural-agro-ecologic context, local production context of the Breed Part II- Breed characteristics, population trends of indigenous breeds
1:30-2:30 pm	Lunch
2:30-4:30 pm	Sharing by farmers who rear different breeds to illustrate the above processes: Deccani Sheep, Osmanabadi goat, Pandharpuri Buffalo, Local cattle, Local swine, Aseel Poultry
4:30-4:45 pm	Tea Break
4:45 -6:30 pm	Group discussions with farmers as resource persons - Informing the participants about the field visits-
Day 3: 30th November 2012	
9 – 11.15 am	Part III- Breeding mechanisms, Productive performance, reproductive performance Presentation by farmers involved in Conservation of Indigenous Breeds
11.15- 11.30 am	Tea Break
11.30 – 1.30 pm	Part IV- Threats faced and strategies for conservation of the breed Presentation by farmers Followed by Group discussions
1:00-2:30 pm	Lunch
2:30-4 pm	Orientation about the field visits, travel and stay logistics in the field Participants leave for Two districts Medak district – 60kms away (sheep, goat, buffalo, cattle) Chittoor district - Overnight train journey (sheep, cattle)
Day 4,5&6 :1st to 3rd December, 2012 – Field visits	
	Field visits, learning in the field through practical interactions with the community and using the participatory tools, getting exposed to interventions towards conservation of local livestock breeds, using breed documentation format. Understanding Community Conservation Strategies Medak: Chennapur, Nagulapalli, Badampet, Nastipur, Saipet Chittoor: Mandyamvaripalle, Pulusugunthalu,
Day 7 :4th December, 2012	
10am - 1.30 pm	All the participants return to Hyderabad Recapping and consolidation of the field experiences, Way forward - Preparing Action Plans for future interventions by each organization Presentation of action plans
2:30- 4:00	Feedback and conclusion
7:30-9:30	Farewell Dinner

Annex IV: An Approach to Mapping Indigenous Animal Genetic Resources, Anthra

- Name of recorder
- Date of recording
- No of villages included in survey
- Type of animal – (cow / buffalo / sheep /goat / donkey / pig, duck, poultry etc)

Part I:

1) Social and Agro-ecological context

- a) Location of the enquiry – Physical features, climate (rainfall / humidity, altitude etc – secondary data collection), vegetation characteristics, geographical distribution.
- b) Main breeding area (Breeding area is the region in which both female and male are kept and breeding is done)
- c) Which community/communities are associated with the breed?

2) Local Production context

- a) Local(Agriculture and livestock) farming system : *What are the main land use strategies (agriculture, grazing etc.) Soil type? Crops cultivated? Crop residues used to feed the animals*
- b) Feed and fodder availability
- c) Preferred fodder species for the breed

Methods: Seasonal calendar of feeds and fodder-PRA

Fodder varieties palatability matrix-PRA

3) Cultural context

- a) Local perception about the origin of the breed (Stories /songs)

Methods – Informal conversations and unstructured interviews. Look for traditional storytellers and bards, ask community elders

Part II Phenotypic Characterization of the Breed

Identification of top breeders in the area

An effort should be made to identify and meet with dedicated breeders that are known for the high quality of their animals.

a) Breed characteristics

- Distinguishing and key characteristics of the breed
(What distinguishes this particular breed from others kept in adjoining areas or from high performance breeds?)
- Key characteristics - how does one determine if the animal belongs to the breed or not?
(Coat (skin) color, Horn shapes, color of eyes, shape of face, color and length of tail etc.)
- Local terminologies – describing various types, colours etc.

Methods – Interviews with knowledgeable people, Participatory observation, Listening

- b) **Physical description** - withers height, body length, chest girth, abdominal girth, weight etc.

c) Production performance

➤ *Dairy cattle*

Daily Milk yield at onset, peak lactation, Fat percentage, Dry period (the time between halting of milk removal (milk stasis) and the subsequent calving)

➤ *Sheep /goat*

Birth weight (male and female)

6 month body weight (male and female)

Market age and weight at market (male and female)

Wool weight (number of shearing / year, weight of wool per shearing)

Wool length/ Wool

➤ *Poultry*

3 months/ 6 months/ 1 year weight of male/ female bird

Market age and weight

Eggs produced / clutch, number of clutches /

d) Flock / Herd level Reproductive performance

Age of First calving / kidding/lambing/farrowing

Calving interval/ kidding interval

How many times in one year does it kid/ lamb

➤ *Sheep /goat*

Age of first lambing

Twinning percentage

Weaning age and weight at weaning

Pre-weaning survival rate

II) Baseline data of breed

How many people (families / individuals) are rearing the breed?

II) Population size and trends

Population estimate – what is the approximate number of animals of that breed in that area?

After determining the breeding area, establish the population size of that species in the respective region from official records

a) *Population trends*

- i. No of farmers who own the pure herds/flocks of the particular breed/ecotype (trend over the last 10 years)
- ii. No of pure herds/ flocks in a village (trend over the last 10 years)
- iii. Total no of animals of that breed in the village (trend)
- iv. Whether the population of the breed has increased or decreased?

Based on the survey and statistical data for the past few years

Village wise- PRA can be conducted for trend changes

Part III: Breeding goals, mechanism and strategies used to shape a breed according to local preferences and priorities

At the level of the Flock Production goals – what is the purpose of rearing the breed? – ploughing, milk, manure, meat / live animal sale, skin, wool etc.

- 1) Methods of selection for female and males
 - a) Which animals do they keep and why (male / female /both)
 - b) Which do they sell and why etc
- 2) Characteristics for selection of breeding male
- 3) Characteristics for selection of female
- 4) Offspring testing – (Ask the owner to bring out the best young male / female (kid/ lamb/chick)
- 5) Maintaining genealogies (*Method: ask the owner to identify the oldest female in his / her flock. Ask him/ herto select out her daughter, and the daughters daughter etc till the most recent offspring.*)
- 6) Methods of removing/culling male animals/female animals from the flock
- 7) Methods of changing breeding males in the flock (how do they get new breeding males?), after how many years do they change it? Exchange? Buy? How many years did they keep the breeding male?
- 8) Numbers of breeding males kept in a herd/ flock
- 9) How frequently do they change the breeding male What methods are used to exchange the breeding male?
- 10) Are breeding males reared from their own herd/flock or acquired from outside?*Often the systems they use are social and cultural (eg festivals, taboos etc)*

Method: group discussions, interviews of local experts, consultation of anthropological Studies

Part IV: Chances for sustainable use and conservation

Pressures

What pressures does the breed face that threatens its survival / sustainable use? These may include

- *Loss of grazing opportunities*
- *Change in agricultural production systems*
- *Loss of traditional institutions*
- *Lack of health care*

- *Lack of market demand*
- *Lack of interest of young generation*
- *Drought, flood, or other natural catastrophes*
- *Conflicts*

Problem Ranking- (Bank on Hooves- pg 29-34) – This facilitates an approach to explore

Production Losses Analysis (Bank on Hooves- pg 37-48)

Analysing specific areas of loss

- **Cattle**
- **Sheep/goat**
- **Poultry**

IV) Interest in revival and conservation by local community

- *Are local people interested in maintaining the breed for livelihood, identity, culture?*
- *What existing local institutions could be mobilized to help in maintaining the breed?*
- *What are the constraints?*
- *What type of action do the local people and other community member suggest?*

For further information

Local Initiatives for Biodiversity, Research and Development (LI-BIRD)

P.O. Box 324, Pokhara, Kaski, Nepal
 Tel (+977)-61-535357/526834
 Fax (+977)-61-539956
 E-mail info@libird.org
 Web www.libird.org

