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Attitude and constraints of the Bargur cattle farmers towards conservation of the breed

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Abstract
The present study was undertaken to assess the attitude and constraints of Bargur cattle farmers towards conservation of the breed. An *Ex-post-facto* research design was followed in the present study. Bargur village Panchayat at Anthiyur Block of Erode District in Tamil Nadu was purposively selected as the locale for the research work since this place is considered as the breeding tract of Bargur cattle. Purposive sampling method was used for selection of respondents. With the help of the Key informants, *viz.,* local Veterinarian, faculties in Bargur Cattle Research station, TANUVAS and Village Panchayat officials 30 farmers having Bargur cattle herd were randomly selected as respondents of this study. The data were collected with the help of well-structured pre- tested interview schedule through personal interviews. The attitude of farmers towards conservation of Bargur cattle was assessed by adopting scaling technique followed by Sreelakshmi (2013) with suitable modifications. Garrett ranking technique was employed to find out the constraints faced by the farmers in rearing Bargur cattle. The data thus collected was tabulated, analysed and interpreted with suitable statistical tools. It could be observed from the study that majority of the respondents (80.00 per cent) had high degree of favourable attitude towards conservation of Bargur cattle followed by moderate level (13.33 per cent) and low level of attitude. With regards to constraints faced by the farmers in rearing Bargur cattle, the major constraints faced by the farmers were non-availability of grazing land (Garrett mean score 67.23) followed by distant location of the grazing land (Garrett mean score 64.68), cost of feed (Garrett mean score 59.82), middleman involvement (Garrett mean score 55.63) and non-availability of bulls (Garrett mean score 54.57). The result of the study will help the extension agencies and government organizations to design suitable conservation programmes for indigenous cattle breeds and to prepare strategic long-term plans for the stakeholders to accommodate the challenges of limited resources such as land, feed, labour and capital.

Keywords: Attitude, constraints, conservation programmes and challenges

Introduction
The conservation of biodiversity, particularly animal genetic resources has now became, national as well as global concern. Earlier, several efforts were made to conserve the species of plants and animals especially wild animals while domestic animal genetic resources received attention for conservation very late (Verma and Lal, 2014) [10]. Conservation of genetic diversity is essential to the long-term survival of any species, particularly in light of changing environmental conditions and is essential for management of threatened and endangered species for sustainable use. The conservation efforts had shortcomings of political instability and/or inconsistency of development policies, limited stakeholder participation, and limitation of interventions in scope and scale that underestimates the conservation efforts (Alemayehu *et al*., 2003) [1]. Most of the breeds developed in India are either draught type or dual purpose. Despite mechanization of agriculture, draught animal power (DAP) continues to be used on Indian farms due to smallholdings and less availability of recourses. More than 55% of total cultivated area is still being managed by draught animals against about 20% by tractors (Phaniraja and Panchasara, 2009) [6].
The Bargur cattle was the only Indian cattle breed as well as Bos Indicus subspecies that had the occurrence of recent genetic bottle neck in their population (Ganapathi *et al.,* 2012) [4]. Studies conducted by Pundir *et al.,* (2009) [7] revealed that Bargur cattle were mostly maintained for dung and draft in the breeding tract.
Very few studies have been made in the past to study this elite breed that too on the genetic properties of this privileged breed and their conservation through *in- vitro* methods. There is a growing recognition that local people have to be involved, in order to achieve sustainable conservation. These trends have been forwarded and have led to the development of a new conservation paradigm 'community based conservation' emphasizing management of

biodiversity by, for and with the local communities. Hence the present study was taken up with the objective to assess the attitude and constraints of Bargur cattle keepers towards conservation of the breed.

Methodology

An *Ex-post-facto* research design was followed in the present study. Bargur village Panchayat at Anthiyur Block of Erode District in Tamil Nadu was purposively selected as the locale for the research work since this place is considered as the breeding tract of Bargur cattle. Bargur panchayat is situated in western ghats (1000 msl) in Erode District of Tamil Nadu, South India and there are about 30,000 families living in 36 hamlets.

Purposive sampling method was used for selection of respondents. With the help of the Key informants, *viz.*, local Veterinarian, faculties in Bargur Cattle Research station, TANUVAS and Village Panchayat officials 30 farmers having Bargur cattle herd were randomly selected as respondents of this study. The attitude of farmers towards conservation of Bargur cattle was assessed by adopting scaling technique followed by Sreelakshmi (2013) [8].

To find out the constraints faced by the farmers in rearing Bargur cattle, they were asked to rank the constraints. The order of the constraints that were given by the respondents was converted into ranks by the following formula (Garret and Woodworth, 1971) [3].

$$\text{Per cent position} = \frac{100(R_{ij} - 0.50)}{N_j}$$

Where,

Rij - Rank given for ith factor by jth individual

Nj - Number of factors ranked by jth individual

The primary data thus collected was tabulated, analysed and interpreted with suitable statistical tools.

Results and Discussion

1. Attitude towards Conservation of Bargur cattle

To measure the attitude of the farmers towards conservation of Bargur cattle, an instrument followed by Sreelakshmi (2013) [8] to determine the farmers attitude in conserving Kasargod cattle was adopted in this study. The instrument consist of 20 attitude statements, out of which, 17 were positive and three were negative in the sense towards conservation attitude. The respondents were asked to give their point of view on a three point continuum *viz.*, Agree, Undecided and Disagree and scores were two, one and zero respectively and the scores were reverse for negative statements. The maximum possible score a respondent can obtain was 20 and the minimum score was 0. Based on the scores obtained by the respondents, they were grouped into three categories based on the mean and standard deviation and presented in the following table.

Table 1: Classification of farmers according to their attitude toward conservation of Bargur cattle

Attitude category	Frequency	Percentage	Cumulative Percentage
Low	2	6.67	6.67
Moderate	4	13.33	20.0
High	24	80.0	100.0

It could be observed from the Table 1, that majority of the respondents (80.00 per cent) had high degree of favourable attitude towards conservation of Bargur cattle followed by moderate level (13.33 per cent) and low level of attitude. The farmers of Bargur village panchayat were rearing this breed of animal from generation to generation and because of that they might have had a high level of positive attitude in conserving this elite breed. The findings goes along with Bhatia and Arora (2005) [2] and Sreelakshmi (2013) [8]. Bhatia and Arora (2005) [2] in their study reported that under Indian farming systems quite a number of indigenous breeds were in to stay for the long run due to a number of reasons among which zero input requirements and disease resistance were of paramount importance.

2. Constraints in Bargur cattle rearing

Table 2: Constraints faced by bargur cattle farmers

(n=30)

S. No	Constraints	Mean Garrett score	Rank
1.	Non-availability of grazing land – since Bargur is in forest area.	67.23	I
2.	Distant location of grazing land	64.68	II
3.	Cost of feed	59.82	III
4.	Middle man	55.63	IV
5.	Bull non-availability	54.57	V
6.	High transportation cost	47.90	VI
7.	Labour shortage	44.27	VII
8.	Straw availability	41.77	VIII
9.	Theft	38.30	XI
10	Un-availability of Veterinary service during emergency	32.77	X

The data in Table - 2 shows that the major constraints faced by the farmers were non-availability of grazing land, distant location of the grazing land, cost of feed, middleman involvement and non-availability of bulls (since they are living in forest zone), High transportation cost, labour shortage, less straw availability, and theft were ranked as low constraint. In the correct condition of diminishing agricultural activity in villages, expanding construction activity, mechanization, etc. has led to the treat of disappearance of native breeds. This is in line with the findings of Thombre *et al*., (2010) [9] and Kumar *et al*., (2017) [5].

3. Other constraints - Grazing Issue

The cattle from farmers are pooled temporarily and herds are formed and grazed during Aadi-Margali (July–January) when crop is sown all over the area after the harvest of crops i.e., during summer (Feb–June) the animals will be sent to respective farmers. Now the closure of forests also resulted in spreading the growth of poisonous weed plant locally called as **"**Unnichedi" (*Lantana camara*). This weed is also taking

away grazing area of not only of cattle but also of the wild ruminants.

Over the last 20 years, almost all the forest area is covered with the Lantana bushes. The local villagers have sound knowledge about the type of grass species and their importance to cattle as well as wild elephants. The important vegetation include *Manjampul, Nanalpul, Udugapul, Paggamanjilpul, Kanangupul, Kurinjimaram,* etc.

Due to encroachment of Lantana, the local species are almost suppressed or have vanished. The simple concept of uprooting the Lantana bushes and planting bamboo/grass slips will not allow rejuvenation of Lantana bushes as suggested by local communities is a good idea to be tested. Nowadays the restriction of animal grazers into forests has considerably reduced the population of Bargur cattle.

Conclusion

The main threatening problems that lower both the productivity and population are non-availability of grazing land, distant location of the grazing land, cost of feed, middleman involvement and non-availability of bulls. The extension agencies and government organizations should identify the grassroots problems and design suitable Community-based in situ conservation programmes for indigenous cattle breeds and to prepare strategic long-term plans for the stakeholders to accommodate the challenges of limited resources such as land, feed, labour and capital.

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