

*Original Research***A Social Assay on Bargur Cattle Farming System in Tamil Nadu****N. V. Kavithaa<sup>1\*</sup>, N. Vimal Rajkumar<sup>2</sup> and P. Mathialagan<sup>2</sup>**<sup>1</sup>Kangayam Cattle Research Station, Sathyamangalam, Erode – 638 402, Chennai, Tamil Nadu, INDIA<sup>2</sup>Department of Veterinary and Animal Husbandry Extension Education Madras Veterinary College, Chennai-600 007, Tamil Nadu, INDIA**\*Corresponding author:** [kavikulandai1979@gmail.com](mailto:kavikulandai1979@gmail.com)

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**Abstract**

A study was carried out in Bargur village Panchayat at Anthiyur Block of Erode District in Tamil Nadu to assess the socio personal profile, Bargur cattle rearing system and to ascertain the socio- cultural, economic and psychological impact of Bargur cattle on the herder's life. Thirty farmers owning Bargur cattle herd were purposively selected as respondents. A well-structured pre tested interview schedule was used to collect the data on profile of the sample respondents and data were collected during June 2018. Focused group discussions, personal interviews and RRA techniques were employed to document the traditional as well as scientific management practices followed by the Bargur cattle farmers. The findings indicate that majority of the respondents belonged to middle to old age group (86.70 %) with primary level of education (46.0 %). Majority of the respondents were marginal to small farmers with an average annual income of less than Rs. One lakh. Majority of the animal houses were of mud flooring with no roof and the animals were grazed for 8 to 10 hours along with additional green fodder during dry season. Almost all the respondents expressed that rearing of Bargur cattle has created a substantial increase in their economic status and 83.33 per cent of the respondents stated that their self-confidence was increased to some extent as they are engaged in traditional farming which is well known to them and also, they are conserving the valuable breed. It was found that majority of the farmers maintain this breed as a traditional practice for livelihood, agriculture and draught purpose. Hence, programmes should be made in such a way that by involving the local community for conservation of the breed and also to get more returns from the existing system of livestock farming thereby enhancing the livelihood of the farmers.

**Key words:** Conservation, Economic Status, Scientific Management, Traditional Management**How to cite:** Kavithaa, N. V., Vimalrajkumar, N., & Mathialagan, P. (2019). A Social Assay on Bargur Cattle Farming System in Tamil Nadu. International Journal of Livestock Research, 9(8), 154-163. doi: 10.5455/ijlr.20190530090550**Introduction**

The cattle breeds have evolved over generations by selective breeding to adapt to the agro-climatic and socio-economic needs of the people. In agrarian countries like India, draught cattle breeds of indigenous

origin play a vital role in the social, cultural, emotional and ecological perspectives in addition to economic and livelihood contribution. Especially in marginal environments, local livestock breeds are crucial for sustaining rural livelihoods while requiring relatively low levels of input with regard to fodder, management and health care.

One such popular and well-known excellent draught breed is Bargur Cattle or “*Semmarai*” dual-purpose cattle, found around the Bargur hills at Anthiyur Taluk of Erode district in Western Tamil Nadu. The Bargur breed of cattle is primarily a hilly draught breed of Tamil Nadu. Bargur cattle are medium-sized animals. They are red coloured with varying extent of white markings. They are semi-wild and hardy to handle. Population of the Bargur cattle in the native tract was estimated to be 95,400 in 1977, which got reduced to 46,600 in 1982 and 10,102 in 2003. Recent enumeration of purebred Bargur cattle in its entire native tract in the year 2007 revealed that the presence of about 2500 heads with only 1100 breedable females. Thus, there has been decline of more than 93 % in the breedable female population size of Bargur cattle from 1977 to 2009. The population size falls under endangered category as per prescribed standards for conservation (<http://www.tanuvas.ac.in/bcrs.html>).

The Bargur cattle was the only Indian cattle breed as well as *Bos indicus* sub species that had the occurrence of recent genetic bottleneck in their population. Ganapathi *et al.* (2012) revealed that the qualitative test of allele frequency distribution in Bargur cattle population revealed a strong mode shift from the normal L-shaped form suggesting that the population had experienced genetic bottleneck in the recent past. The occurrence of genetic bottleneck might have led to the loss of several rare alleles in the population, which point towards the need for efforts to conserve this important cattle germplasm. Studies conducted by Pundir *et al.* (2009) revealed that the Bargur breed of cattle is primarily a hilly draught breed of Tamil Nadu. Bargur cattle are medium-sized animals. They are red coloured with varying extent of white markings. They are semi-wild and hardy to handle. Cows are poor milkers and produce about 0.5 to 3.0 litres milk per day after suckling by calf (Ponnusamy *et al.*, 2019). However, bullocks are famous for their endurance and speed in trotting. Animal are mostly maintained for dung and draft in the breeding tract.

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 following objectives-

- 1) To study the socio personal profile of the Bargur cattle farmers.
- 2) To explore the Bargur cattle rearing system (both traditional as well as scientific management practices).
- 3) To study the socio- cultural, economic and psychological impact of Bargur cattle on the herders.

## Materials and Methods

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. This panchayat situated in western ghats (1000 MSL) in Erode District of Tamil Nadu, South India. About 30,000 families are living in 36 hamlets of Bargur panchayat.

Purposive sampling method was used for selection of respondents. Since, this study had completed as a part of doctoral course work and having the restrictions of time, man power and money, it was decided to select a minimum of 30 respondents so as to make the sample size as a minimum possible large sample. With the help of the key informants, *viz.* local veterinarian, faculties specialised in animal genetics, livestock production management and veterinary and animal husbandry extension education in Bargur Cattle Research Station, TANUVAS and village panchayat officials, a total of 30 farmers having Bargur cattle herd were randomly selected as respondents of this study. The data on the profile of the sample respondents were collected with the help of well-structured pre tested interview schedule through personal interviews. Focused group discussions, personal interviews and RRA techniques were employed to find out the traditional as well as scientific management practices followed by the Bargur cattle farmers. The primary data thus collected was tabulated, analysed and interpreted with suitable statistical tools like frequency and percentage analysis.

## Results and Discussion

Bargur “Lingayat” an indigenous Kannada speaking community live in the midst of Bargur forest zone situated in Western Ghats (1000 MSL) in Erode District of Tamil Nadu, South India. There are about 30,000 families living in 36 hamlets situated in Bargur Panchayat. They are living in the region for more than 400 years rearing unique livestock and acting as custodians of the local forests. Their community deity is Matheswara Swami Temple in Kollegal Taluk of Chamrajanagar District, Karnataka. When they came to Bargur (Tamil Nadu) and settled in the forests, they came along with cattle and buffalo. The Bargur cattle have been usually reared in herds exclusively by this Kannada-speaking Lingayats of the Bargur region. Their animals are accustomed for climbing the hills for grazing and become compact in body with more stamina and strong legs. Such animals have been kept by them for ploughing operation. They are keeping animals as a gift of God and extend love and affinity with them.

Every month they offer grains of minor millet - “*Varagu*” in Tamil, “*Bargu*” in Kannada (*Paspalum scrobiculatum*) to Matheswara Swami temple. As they are offering *Bargu* they have been called as Bargur community and cattle are also named as Bargur cattle. It is locally termed as “*Semmarai*”. The Buffalo species maintained by them are called as *Malai Erumai* or Bargur buffaloes. They developed indigenous

knowledge in management of animal herds, selection of bulls, medicinal and grass species for animal nutrition and treatment, etc. These breeds are intrinsically migratory and cannot be stall fed. These animals do not survive or retain their vigour if they are forced to stall feeding and therefore adopted with forest ecosystem.

### Socio- Personal Profile of the Bargur Cattle Farmers

The socio personal details of the farmers were collected and presented in Table 1.

**Table 1:** Socio personal profile of the Bargur cattle farmers (n=30)

| S. No. | Profile Characteristics       | Categories                     | Frequency | Per cent |
|--------|-------------------------------|--------------------------------|-----------|----------|
| 1      | Age                           | Upto 35 years                  | 4         | 13.3     |
|        |                               | 36 to 45 years                 | 18        | 60       |
|        |                               | Above 45 years                 | 8         | 26.7     |
| 2      | Education                     | Illiterate                     | 7         | 23.3     |
|        |                               | Primary                        | 14        | 46.7     |
|        |                               | High school                    | 9         | 30       |
| 3      | Income/annum                  | 50,000-1 lakh                  | 10        | 33.3     |
|        |                               | 1.1 – 2 lakhs                  | 18        | 60       |
|        |                               | Above 2 lakhs                  | 2         | 6.7      |
| 4      | Land Holding                  | Marginal (upto 1 ha)           | 22        | 73.3     |
|        |                               | Small (1-2 ha)                 | 7         | 23.4     |
|        |                               | Large (more than 2 ha)         | 1         | 3.3      |
| 5      | Community                     | Backward Class - Lingayath     | 28        | 93.3     |
|        |                               | Scheduled Tribes -Malayalee    | 2         | 6.7      |
| 6      | Occupation                    | Agriculture + Animal Husbandry | 30        | 100      |
| 7      | Farming experience            | Low (0-5 years)                | 3         | 10       |
|        |                               | Medium (6-10 years)            | 19        | 63.3     |
|        |                               | High (more than ten years)     | 8         | 26.7     |
| 8      | Herd size (Numbers)           | Upto 10                        | 6         | 20       |
|        |                               | 11 to 20                       | 16        | 53.3     |
|        |                               | Above 20                       | 8         | 26.7     |
| 9      | Other livestock possession*   | Buffaloes                      | 16        | 53.3     |
|        |                               | Goat                           | 17        | 56.7     |
|        |                               | Sheep                          | 12        | 40       |
|        |                               | Horse                          | 1         | 3.3      |
| 10     | Information seeking behaviour | Low (0-25 %)                   | 5         | 16.7     |
|        |                               | Medium (26-75 %)               | 16        | 53.3     |
|        |                               | High (more than 75 %)          | 9         | 30       |

\*Multiple response

It could be observed from Table 1 that majority of the respondents belonged to middle to old age group (86.70 %) with primary level of education (46.70 %). The results also revealed that majority of the respondents (96.70%) were marginal to small farmers with an average annual income of less than Rs.1 lakh.

All the members had agriculture as the main occupation and animal husbandry as the secondary occupation. The finding of the study is in accordance with Somagond *et al.* (2019); Jain *et al.* (2017); Chandran *et al.* (2014) and Ngowi *et al.* (2008). Vast majority of the respondents (93.3 %) belonged to Lingayath community. Majority of the respondents maintained the herd size of 10 to 20 numbers of Bargur cattle (Ponnusamy *et al.*, 2019). More than half of the respondents reared buffalo and goats, and a meagre number of farmers had sheep and one respondent was rearing horse. Majority of the respondents had medium level of information seeking behaviour. The profile of the farmers clearly indicates that rearing Bargur cattle was considered as a traditional practice and became an essential or integral attribute of their livelihood. Livestock are raised as a part of mixed farming systems and are closely associated with socio-economic and cultural ethos of the farming community (Jain *et al.*, 2017). Livestock are also sold during the period of food shortage to buy cereal grains (finger millet, sorghum and maize), thus contributing directly to food security (Ngowi *et al.*, 2008)

### **Bargur Cattle Rearing System**

#### **Traditional Rearing System of Bargur Cattle**

Bargur cattle are second recognized cattle of Tamilnadu next to Kangayam cattle. It is maintained as semi-wild cattle reared in the Bargur forest. Its home tract is confined to the 33 hamlets in Bargur village and few hamlets in the foot hills of Bargur forests. It is maintained in the zero-input condition by grazing and kept penned in forest for most part of the year.

Bargur cattle are of medium size in red colour with white markings and with red eye, horn and hooves. It is reared for draft purpose and the bullocks are known for their sturdiness and there is no need to shoe the bullocks. Traditionally, the herd will be taken to the forest in the month of July/August (Aadi month in Tamil) and will be grazed and penned inside the forest, usually they will be taken to “Garke kandy” a place 30 kilometers away, where their ancestors used to go. The places will be shifted according to the availability of fodder and water. Then in the month of January/February (Thai month in Tamil) the herd will be taken back to the agricultural fields where the harvesting will be over and crop residues will be allowed to be grazed. In the event of non-availability of grazing site, the herd will be again taken to forest. During prolonged dry season the herd moves to ‘Boli’ a place near water source. This has been recognized by the British government and annually they were issued grazing permits and penning permits. But for the past 20 years the penning permits were denied by the forest department and grazing permits were issued with restrictions (Lingayat Bio – Cultural Protocol, 2009).

#### **Management Practices**

The data on management practices were analysed and presented in Table 2. Majority of the animal houses were of mud flooring with no roof.

**Table 2:** Management practices of Bargur breed (n = 30)

| S. No. | Management Practices   |  | Frequency | Percentage |
|--------|--|--|-----------|------------|
| 1      | Type of house  | Thatched   | 7         | 23.3       |
|        |  | Open area  | 23        | 76.7       |
| 2      | Type of flooring   | Mud flooring   | 24        | 71.7       |
|        |  | Cement flooring  | 6         | 28.3       |
| 3      | Type of roofing  | Under the straw lot                                    | 22        | 73.33      |
|        |  | Open   | 8         | 26.67      |
| 4      | Feeding  | Green fodder (grazing)                                 | 26        | 80         |
|        |  | Concentrate  | 3         | 20         |
| 5      | Breeding   | Natural service  | 28        | 93.3       |
|        |  | Artificial Insemination                                | 2         | 6.7        |
| 6      | Restraints   | Ground peg   | 3         | 10         |
|        |  | Not restrained   | 27        | 90         |
| 7      | Manure*  | Own farm use*  | 26        | 86.67      |
|        |  | Sale*  | 7         | 23.33      |
|        |  | Both*  | 30        | 100        |
| 8      | Marketing at the annual festival of GurunathaSwamy Temple at Pudupalayam in Anthiyur | Bullocks (1-2 years of age) *<br>Rs.30,000 to 40,000/- | 30        | 100        |
|        |  | Female cattle * Rs.40,000 to 50,000/-                  | 10        | 33.33      |

\*Multiple response

The animals were grazed for 8 to 10 hours along with additional green fodder during dry season. Only 20 per cent of the farmers provided concentrate ration. Majority of them sold their male calves for additional income and also due to less space availability. One of the family members was employed to graze the animals on payment basis. The bulls present in the herd called as ‘Guli’ were utilized for serving the females in the herd that was grazed together. Selection of breeding bull is based on the activeness, dam milk, well-built body, good bone density, white markings on all sides, good legs, red eye and horn. No charges were paid for the natural service done by the bulls.

About 6.7 per cent of the respondents follow Artificial Insemination for their cows using Kangayam bull semen by taking them to the nearest dispensary. Majority of the farmers (86.67 %) of the respondents utilised the manure for their own farm use where the main crop was ‘finger millet’ (Ragi in Tamil) intercropped with “Avarai” (field beans) which is a staple food grain in the study area and about 23.33 per cent of the respondents sold the manure to others for additional income. All the respondents sold bullocks and only 30 per cent of the respondents sold female cattle during emergency. The age at marketing was 1 to 2 years for utility purpose and 14 years for culling purpose. The animals were sold locally through brokers. The finding goes along with Singh *et al.* (2008) and Chandran *et al.* (2014). According to

Thangaraju *et al.* (2001), Steinfeld *et al.* (2006) and Ponnusamy *et al.* (2009), the conservation of livestock biodiversity is strongly dependent on agricultural practices and management systems.

### Socio- Cultural, Economic and Psychological Impact of Bargur Cattle on the Herders

The data on economic impact of Bargur cattle rearing on the livelihood of the farmers were collected and presented in the Table 3.

**Table 3:** Economic impact of Bargur cattle rearing on the livelihood of the farmers (n = 30)

| S. No.   | Impact   | Response Category                   | Frequency | Percentage |
|----------|--|-------------------------------------|-----------|------------|
| <b>A</b> | <b>Economic Impact</b>   |                                     |           |            |
| 1        | Income   | Increased substantially             | 30        | 100        |
|          |  | Increased to some extent            | --        | --         |
|          |  | Not increased                       | --        | --         |
| 2        | Standard of living   | Increased substantially             | 30        | 100        |
|          |  | Increased to some extent            | --        | --         |
|          |  | Not increased                       | --        | --         |
| 4        | Assets   | Increased substantially             | 20        | 66.67      |
|          |  | Increased to some extent            | 10        | 33.33      |
|          |  | Not increased                       | --        | --         |
| 5        | Utilization of money on social occasions (such as marriage, festivals, ceremonies) | Increased substantially             | 30        | 100        |
|          |  | Increased to some extent            | --        | --         |
|          |  | Not increased                       | --        | --         |
| 6        | Spending on emergency needs (sickness and accident)                                | Increased substantially             | 30        | 100        |
|          |  | Increased to some extent            | --        | --         |
|          |  | Not increased                       | --        | --         |
| 7        | Utilization of local resources   | Increased substantially             | 30        | 100        |
|          |  | Increased to some extent            | --        | --         |
|          |  | Not increased                       | --        | --         |
| 8        | Purchase of essential goods (sugar, rice, oil etc)                                 | Could be made timely                | 30        | 100        |
|          |  | Could be made timely to some extent | --        | --         |
|          |  | Not increased                       | --        | --         |

It could be observed from the Table 3 that, almost all the respondents were expressed that rearing of Bargur cattle has created a substantial increase in their economic status of the respondents as majority of the respondents are rearing 11 to 20 cattle and they are getting a considerable return from them. They have stated that their income, standard of living has increased considerably. About 66.67 per cent of the respondents conveyed that they have created assets from the farming income. They have also stated that spending money on social occasions such as marriage, festivals, ceremonies and spending on emergency needs like sickness and accident were met out from the farm income. It was found from the above fact that

rearing Bargur cattle economically supports the livelihood of the farmers. The findings go along with findings of Rege and Gibson (2003), Ngowi *et al.* (2008), Maousami *et al.* (2017) Ponnusamy *et al.* (2017) and Kannadasan *et al.* (2018) who reported that indigenous cattle produce milk and meat for subsistence, supply draught power and manure for cropping and provide fibre, skin and transport and sales of livestock provide farmers with cash to purchase household necessities and farm inputs. Hoffmann *et al.* (2014) in their study reported that the non-material benefits generated by local breeds, such as their socio-cultural importance and educational and recreational contributions, have gained recognition in recent decades.

### Socio-Psychological Impact

The data on economic impact of Bargur cattle rearing on the livelihood of the farmers was collected and presented in the Table 4.

**Table 4:** Socio- psychological impact of Bargur cattle rearing on the livelihood of the farmers

| S. No. | Socio- psychological impact             | Response category        | Frequency | Percentage |
|--------|---|--------------------------|-----------|------------|
| 1      | Perceived Self confidence               | Increased substantially  | 5         | 16.67      |
|        |   | Increased to some extent | 25        | 83.33      |
|        |   | Not increased            | --        | --         |
| 2      | Ideas on livestock breed conservation   | Increased substantially  | --        | --         |
|        |   | Increased to some extent | 30        | 100        |
|        |   | Not Increased            | --        | --         |
| 3      | Prestige                                | Increased substantially  | 30        | 100        |
|        |   | Increased to some extent | --        | --         |
|        |   | Not increased            | --        | --         |
| 4      | Emotional bondage towards native breeds | Increased substantially  | 30        | 100        |
|        |   | Increased to some extent | --        | --         |
|        |   | Not increased            | --        | --         |

It could be inferred from the Table 4 that, most of the respondents opined that that rearing of Bargur cattle has moderately contributed for the socio psychological attributes in their day to day life. Majority of the respondents (83.33 %) stated that their self-confidence was increased to some extent. They learned the ways and means of conservation of native breeds like Bargur noticeably. All the respondents articulated that they feel proud about rearing Bargur cattle and they are emotionally acquaintance with this native breed. The finding is in agreement with Mbwambo (2000) who reported that local institutions constitute an essential component of any attempt to facilitate community engagement in conservation and management of biological diversity and Köhler-Rollefson (2000) who reported that it is difficult, if not impossible, to implement *In-situ* conservation without understanding and invigorating local institutions and embedded knowledge systems. Public private partnership approach (Ponnusamy, 2013) involving breeder association

and government agencies, decentralized grass root extension approach like Pashu Sakhi model of Rajasthan (Ponnusamy *et al.*, 2017) could also pave the way for conservation and sustainability of Bargur cattle breed.

### Conclusion

The findings of the study conclude that Bargur cattle farmers follows natural breeding with no proper housing management and shortage of grazing land, because they were not allowed to graze their animals inside the forest areas which had led to fodder shortage thereby affecting the productivity of the animals. For additional income and less space availability, most of the male calves were sold locally in an unorganised market. Brokers were involved in this market. Majority of the farmers maintain this breed as a traditional practice for livelihood, agriculture and draught purpose. Hence, Programmes should be made for conservation of the breed as indigenous breeds are more resistant to diseases and withstand inclement weather conditions and farmers should be given training on scientific feeding and management practices. Government organization should take steps for the establishment of co-operative market for sale of animals which will reduce the involvement of middlemen.

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