

Review

Status of AnGR of Maharashtra in 19th century: A reviewP.S. Bankar^{1*}, Snehal Patil², S.V. Kuralkar¹, M.M. Chopade¹ and P.V. Jadhav¹¹Department of Animal Genetics and Breeding, PGIVAS, Akola, Maharashtra, India²Panchayat Samiti, Akola, Maharashtra, India**ABSTRACT**

Maharashtra, India's second-most populous and third-largest state, is rich in domestic animal biodiversity, contributing significantly to the country's agricultural economy. With a population of 112 million and diverse geographical features, ranging from the Konkan coast to the Sahyadri mountains and the Deccan Plateau, the state supports varied agroclimatic zones. Approximately 25% of its population is engaged in farming, with livestock contributing around 7% to the national total. Key breeds include Dangi and Deoni cattle, Nagpuri buffaloes, Osmanabadi goats, and Deccani sheep, showcasing a wide genetic diversity. The state's history of animal husbandry dates back to the British colonial era, when various cattle breeds were categorized based on their regions, and many were imported for agricultural purposes. Despite facing challenges such as climate variability and fodder scarcity, efforts like the Indian government's "Mission Zero Non Descript" aim to document and enhance non-descript genetic resources. Historical records reveal extensive livestock diversity and highlight the importance of understanding past practices to inform current animal breeding strategies. This review underscores the need for a comprehensive understanding of Maharashtra's livestock heritage to promote sustainable agriculture and biodiversity conservation.

Key words: Agricultural economy, Domestic animal biodiversity, Livestock breeds***Corresponding author:** pravinbankar@mfsu.in**INTRODUCTION**

Maharashtra is one of the leading state in India, harboring diverse population of domestic animal biodiversity since long time. Geographically, Maharashtra is 3rd largest state by area after Rajasthan and Madhya Pradesh and 2nd most populous state (112 million). The state has rich physiography characterized by three natural divisions viz. the Konkan coastal strip with 720 km coastline, the Sahyadri or Western Ghats (biological hotspot), and the Deccan Plateau. Maharashtra shares its boundaries with 6 adjoining states (Gujarat, MP, Chhattisgarh, Telangana, Karnataka, and Goa) and 2 union territories (Dadara & Nagar Haveli) with 20.13% forest cover. Rivers like Krishna, Bhima, Godavari, Tapi-Purna and Wardha-Wainganga have made compartmentalization due to their fluvial action, into broad, open river valleys, alternating with plateau interflaves leading to formation of six agroclimatic zones varying in temperature, soil type, flora and livestock. The state enjoys a tropical monsoon climate; the hot scorching summer (40 to 48 degrees Celsius) from March onwards yields to the rainy monsoon in early June. The highly pulsatory character of the monsoon, with its short spells of rainy weather and long dry breaks, floods, as well as droughts add much to the discomfort of the rural economy (Jaidi, 2023).

Considering the present scenario of this state having agriculture based economy, about 25% population belongs to farming community and 27% population

is engaged as agriculture laborers. Rich domestic animal diversity of state contributes to 7% livestock and 10% poultry and 12.9% to total income to the nation (Anonymous, 2023). Maharashtra state has rich domestic animal diversity viz. Cattle (Dangi, Deoni, Gaolao, Kathani, Khillar, Konkan Kapila, Red Kandhari); Buffalo (Nagpuri, Pandharpuri, Marathwadi, Purnathadi); Goat (Osmanabadi, Sangamneri, Berari, Konkan Kanyal); Sheep (Deccani); Horse (Bhimthadi), respectively. These recognized breeds also exhibit different colour variants as strains/sub-populations indicating wide genetic variation viz. Deoni (Shevera, Balankya and Wanera); Dangi (Bahala, Para, kala Bahala, Maneri, Lal bahala); Khillar (Atpadi, Mhasvad, Nakali, Kosa, Brahmani, Dafalya, Dhangari, Pandharpuri, Harnya); Nagpuri (Elichpuri, Shahi, Chanda); Deccani (Lonand, Solapuri, Kolhapuri, Sangamneri) etc. respectively.

Animal husbandry and dairying activities, along with agriculture, continue to be an integral part of human life since the process of civilization started. These activities have contributed not only to the food basket and draught animal power but also by maintaining ecological balance. There are about 303.76 million bovines (cattle, buffalo, mithun and yak), 74.26 million sheep, 148.88 million goats, 9.06 million pigs and about 851.81 million poultry as per 20th Livestock Census in the country. In Maharashtra, the last livestock census indicated -8.10 % change i.e. cattle: -10.07% and Buffalo:

0.17, respectively (Anonymous, 2012 and Anonymous, 2019). Besides the registered breeds of livestock, a sizable population, which is generally considered as non-descript awaits proper documentation regarding phenometrical attributes and uniqueness. The government of India's "Mission Zero Non Descript" is working as boon for identification of such non-descript AnGR. While studying a newer germplasm, its historical roots can be useful for authentication as well as knowing the present scenario. However, very meager documentations have been made with special attention towards domestic animal biodiversity. In 19th century, the British Rulers have systematically documented various details of agriculture sector, which also covers the scenario of then livestock diversity.

In view of this, status of animal genetic resources in Maharashtra state during 19th century has been reviewed with the advent of official British gazetteers (1874-1924) and contemporary literatures, which will showcase a century ago picture of livestock breeds. Considering the challenges before the existing germplasm viz. lack of awareness amongst farmers and technocrats, unpredictable environmental conditions, poor availability of fodder and sire (elite male) etc, there is need to consider the past glimpses. This paper will facilitate the researchers with compiled information to draw valid conclusions and strategic planning to a certain level.

Cattle genetic resources

During British rule, various regions of Maharashtra state were categorised under different provinces or states viz. Bombay presidency (Mumbai islands); Malva (North Maharashtra); Central provinces and Berar state (Vidarbha region) and Hyderabad state (Marathwada region) etc. In Mumbai (then Bombay), cattle were chief domestic animals and were brought principally from the Deccan and Berar regions. The "Deccan cow" was undersized, vicious and a poor milker, and was therefore rarely found in Bombay dairies. About 5000 cattle from Khandesh, Gujarat and Mysore states were imported per year for draught purposes (Anonymous, 1909). In Kolaba district (presently Raigad district), almost all the oxen (local cattle) were hardy, active and neatly made, however, small and weak compared with Deccan and Gujarat bullocks. A few traders and large landowners were having Gujarat bullocks (Anonymous, 1883a). In Khandesh area (Presently, North Maharashtra), somewhat small but strong and hardy, fast trotting and very teachable cattle named "Thilari" have been reported. Injudicious crossing and fodder scarcity in the hot dry weather was noted (Anonymous, 1880). In Nashik region, local small cattle which were fit for most kinds of field work have been reported along with

other cattle breeds like Surti, Varhadi, Kilhari or Thilari, Gavrani, Malvi, and Bahali. These breeds have been described by editors as: Surti bullock were tall wild looking animals, usually white, Varhadi bullocks were large and fine looking, white, red in colour and did not thrive on hill grazing, Kilhari bullocks brought from Indore were active and lively, with long upright horns, usually white or brindled, fast in carts, but not useful for field work, Malvi bullocks were usually white, and Gavrani bullock were of various colours, had crooked horns. The pair of Bahali bullock chiefly found in Igatpuri and much esteemed, black mottled with white, fetched somewhat higher prices than the Malvi and Gavrani (Anonymous, 1883b). Bahala is a strain of Dangi cattle, which confirms its roots a century ago. The reports also indicated the exchange of bovine germplasm to Nashik region from Gujrat, Madhya Pradesh, Varhad regions. In Satara region, two bovine populations viz. local and the Khillari cattle occurred. The Khillari, though the larger and more muscular animal, had less longevity as compared to local. Surat cows were imported in 18th century (Anonymous, 1884b). In Solapur district, Dhangari Khillari, Deshi (or local), Lamani (or Laman's cattle), Maivi (from Malwa), Surti (from Gujarat) and Gokaki (from Gokak in Belgaum) have been reported. It was also mentioned that the Lamani was valued for its size and appearance, the Malvi was a larger species of Lamani, and the Surti and Gokaki were admired for their heads. The Gokaki bullocks were better suited for carting than ploughing (Anonymous, 1884c). In Kolhapur district, three types of cattle used for field and draught purposes have been reported viz. the Hanam or half-Maisur breed, the Surati or half-Gujarat breed, and the Khadki or local breed. The hanam or half-Maisur bullock was described as a straight horned middle size animal, strong, and hardy, but bad-tempered and hard to tame. It was also noted that in 1881-82, a total of about 149,762 bullocks were there and improvement through introduction of Gujrat bulls was practiced during 1850-1880 (Anonymous, 1886). In Pune district, occurrence of ten kinds of cattle viz. Khilari, Malvi, Ghir, Dangi, Deshi, Arabi, Naghoris, Varhadi, Akulkhashi, and Hanams has been reported. It was also mentioned that Malvi cattle came from the extensive grazing grounds of Malva and brought by Vanjaris and Lamanis; Ghir or Sorthi was the South Kathiawar breed (Presently, Gir cattle); Dangi or Kolvan brought from North Thana region; Varhadis or Berar cattle brought from Berar; Arabi or Aden cattle were the best cattle and Hanams cattle were brought from Nomad and the Mahadev hills south of Phaltan. The district had no class of professional cattle-breeders but Kunbis who form the bulk of the husbandmen owned large numbers of cattle, rearing them with care, and sometimes dealing in cattle

(Anonymous, 1885). Looking towards the Vidarbha region, in Buldhana district, Khamgaon cattle, a medium sized breed was reported. It was also mentioned that colour variants of this cattle were most probably the product of unrestricted crossing of the local Ghat cattle with breeds of the plains i.e. Umardas and Khamgaon (Anonymous, 1910b). In Akola district, it was reported that, small and not fast enough for travelling but strong and good for field work, Banjara bullocks having very large horns as distinguishing feature came from the Melghat region. Occurrence of Shingaji cattle from Malwa region (northern Maharashtra), having long body, very large ears and hooves and well adapted for field work was also reported (Anonymous, 1910a). In Amravati district, three different cattle breeds were reported viz. Umarda or Gaorani, Khamgaon and Ghat or Pahari breed. The Umarda bullocks were of medium size and white or red in colour, observed in Amravati, Achalpur (then Ellichpur), Daryapur and Chandur talukas. However, Khamgaon cattle, the largest and strongest of the Berar breeds, were seen mostly in Daryapur taluka and well suited for heavy work on black cotton soil. Melghat or Pahari breed was the smallest breed. Melghat bullock was a hardy, active animal particularly well suited for the conditions of that hilly tract. In addition to these, Arvi cattle from Wardha (Present day Gaolao) and Malvi cattle from the Hoshangabad (MP) were also observed with noting of much inter-breeding between the Arvi cattle and the Umarda breed (Anonymous, 1911). In Yavatmal district, cattle breeds viz. Ghat and Ganga bullocks, those bred in a Mahur Pargana, hill bullocks with big, strong, heavy buildup, especially useful in ploughing, named Ghatode or Ghatache (from Ghat region) have been mentioned. Similarly, smaller but sometimes faster true Berari bullock named Warhadche (from Varhad region); Gawala (presently Gaolao) breed, Darwha breed and Khandeshi bullocks brought from the Murtazapur taluka of Akola district etc. have been mentioned (Anonymous, 1908c). Neighboring Wardha district had the best breed of cattle in the province known as Gaolao. Eventually, import of Berar bullock, Mahurpatti cattle (Hyderabad pargana), Telangpatti (Chanda, presently Chandrapur district) has been reported. It was mentioned that cattle from Berar were stronger than local Gaolao as well as the Mahur cattle were red, black, speckled and very strong (Anonymous, 1906). In Nagpur district, Gaolao breed were extensively used, especially in the cotton tracts and were usually imported from Arvi (Wardha) and Khamarpani in Sausar. Local 'Nagpuri cattle', from north region of Ramtek tahsil, with white or different colours, medium sized horns and flat forehead, legs longer than Gaolao cattle were noted. Alongwith these cattle, the inferior, small and badly shaped, with thin and short horns cattle

named 'Gondi' was also reported (Anonymous, 1908b). In Chanda district (Presently Chandrapur district), two types of cattle were recorded viz. Mahurpatti cattle, which came from Mahur, Jungaon and Khamona in the Nizam's dominions and were sold in large numbers at the annual cattle fair at Wun in Berar and other Telangpatti cattle, hailing from Ahiri, Dabha, Sironcha and the Ghatkul pargana. These cattle were usually white and reddish or speckled red and white. The cattle with red colour were called Lakha and those red with white stripe on forehead were called Lakha bhonda. A bull speckled black and white all over was termed as Dhamnd (Anonymous, 1908a).

Buffalo genetic resources

In Bombay islands, buffaloes were imported for milch-purposes from Gujarat, Delhi and Punjab (Anonymous, 1909). The male buffaloes were commonly used for ploughing, dragging timber, drawing heavy carts, and sometimes for carrying water bags (Anonymous, 1883b). In Kolhapur district, buffaloes were improved by introduction of Maisur buffalo bulls for three decades (Anonymous, 1886). In Poona district (Presently Pune district), eleven kinds of buffaloes were reported viz. Shindan or Sindh buffaloes; Kachhan or from Cutch; Jafari or from Jafarabad in Kathiawar; Bhesri; Surti from Surat, Varhadi from Berar; Nemadi from Nemad; Gavthi or local; Gavlan or Gavli; Mahuri from Mahur; and Dhangari or Dhangar buffaloes (Anonymous, 1885). In Amravati district, Gaorani or Nagpuri breed and the Malwa breed were reported (Anonymous, 1911). In Aurangabad district (Presently Chhatrapati Sambhajinagar district), a superior variety of buffalo having remarkably large size, great breadth of back, and enormous horns was reported towards Jalna area. The milk yield of these buffalo ranged from 8 to 10 seers (presently 8-10 liters) and highly priced (Anonymous, 1884a).

Goat genetic resources

In Bombay islands, few goats of common breed were privately kept in the city (Anonymous, 1909). In Kolaba district (presently Raigad district), goats were kept in small numbers, chiefly by Musalmans, Marathas, Kumbhars, Kathkaris, Chambhars, and Mhars, who were too poor to have cows. It is also noted that, goat's milk was sometimes given to children suffering from enlarged livers or spleens. It was also rubbed on the hands and feet as a cure for sleeplessness (Anonymous, 1883a). In Nashik, tall goats called Nemad, with distorted hooked nosed and long twisted horns as well as small goats with short snouts and horns called Deshi or local goats, were reported (Anonymous, 1883b). Similarly, in Kolhapur district, Kui or white and Khadki or local

goats were seen. In Poona (presently Pune district), Khuri, Ghodsheli, Koi or Surti, and Savti goats were reported. It was described that, the Khuri were small goats with short ears, from Karnatak. The Ghodsheli was a large goat. The Koi or Surti goats were well known for the largest supply of milk and were kept and fed at home; their flesh was said to be hard and coarse. The Savti goats were taller, larger, less milk yielding and were sent into the forests for grazing. Their flesh was said to be tender and they were generally kept for food. There were no special goat-breeders (Anonymous, 1885).

Sheep genetic resources

In Bombay islands, most of the sheep were imported for slaughter from Marwar, Ahmedabad and the Deccan (Anonymous, 1909). In Nashik district, Gavrani and Harani were two kinds of sheep observed. The Harani sheep were distinguished by short snouts. The Dhangars and Hatkars, the professional herdsmen who reared sheep, weaved coarse blankets of the wool, and used it for stuffing saddles and making rope (Anonymous, 1883b). In 1849, Sir Bartle Frere, Commissioner, Satara district attempted to introduce sheep from Khandesh region, which exhibited too delicate cross breed, that had died out and never became popular. Eventually, in Poona district (Presently Pune district), local or Desalu and long broad-tailed Dumba (from duma tail) sheep were recorded. The long-tailed sheep included three varieties viz. Yaipuri, long-tailed and white with a black patch or two; Kabuli, broad-tailed, short-legged, and white or white and black; and Yelga from the Bombay Karnatak, tall, broad-tailed, and of many colours (Anonymous, 1885). In Amravati district, three types of sheep were reported viz. Taperkane (long ears and generally jet black in colour); Batkane (small ears and generally mixed black and white) and the Fulkane (cross between Taparkane and Batkane) (Anonymous, 1911). However, in Chanda (Presently Chandrapur) district, Dhor Mundi or the Godavari sheep was reported in Sironcha (Anonymous, 1908a).

Equine genetic resources

Though the local breed was poor and small, Khandesh horses were once esteemed the best and strongest in the Deccan. The small but hardy breed of ponies was raised by Thilaris, a tribe of wandering herdsmen, chiefly inhabiting the west of Khandesh (Anonymous, 1880). The valley of the Man taluka used to be famous for its horses in Satara district; however, meager interest in horse-breeding was noted (Anonymous, 1884b). Efforts to promote horse breeding were given by Chhatrapati Shahu Maharaj, during horse and cattle show held at Chinchli, Kolhapur (Anonymous, 1896).

Canine genetic resources

Except the thin long-haired Charan dog, a sturdy brave animal sometimes brought by Charan salt-dealers in Kolaba district (Presently Raigad district) was seen (Anonymous, 1883a).

CONCLUSION

The review of British literature gives idea about the vast diversity of AnGR in Maharashtra during 19th century. The livestock populations or strains were called by different nomenclature, on the basis of geographical region (eg. Varhadi, Malvi, Gokaki cattle), phenotype (eg. Bahala, Ghodsheli), and community (eg. Lamani, Gondi). The review not only suggests traditional practices of rearing as well as import of external germplasm (eg. Gir cattle, Murrah/ Punjab buffalo) but also reveals the migratory route of livestock stakeholders during 19th century. Few of the nomenclature noted phonetically by then enumerators can be correlated with the correct dialect viz. Sorti means Surti; Yarahdi instead of Varhadi; Charan dogs may be Karvan dogs. Few germplasm noted are still found in existence, confirming the validity of studied records. Therefore, historical perspectives while deciphering the lesser known germplasm should be considered with concern.

REFERENCES

- Anonymous. 1880. Khandesh Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1883a. Kolaba Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1883b. Nashik Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1884a. Aurangabad district-Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1884b. Satara district Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1884c. Solapur district, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1885. Poona district Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1886 Kolhapur district Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1896. Times of India Report on "Horse and Cattle Show at Chinchli" Shivaji University Records, Kolhapur.
- Anonymous. 1906. Wardha district Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1908a. Chanda district- Maharashtra state Gazetteer, Government of Maharashtra.

- Anonymous. 1908b. Nagpur district Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1908c. Yavatmal district Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1909. Bombay islands Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1910a. Akola district Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1910b. Buldhana district Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 1911. Amravati district Gazetteer, Maharashtra state Gazetteer, Government of Maharashtra.
- Anonymous. 2012. 19th Livestock census- All India Report, Ministry Of Agriculture, Department Of Animal Husbandry, Dairying And Fisheries, Krishi Bhawan, New Delhi.
- Anonymous. 2019. 20th Livestock census, All India Report, Ministry Of Agriculture, Department Of Animal Husbandry, Dairying And Fisheries, Krishi Bhawan, New Delhi.
- Anonymous. 2023. Economic Survey of Maharashtra, 2022-23, Directorate of Economics and Statistics, Government of Maharashtra.
- Jaidi Tasvvur Hussain. 2023. Geography of India, McGraw Hill Education (India) Pvt. Ltd, 10th Edition.