



Animal Genetic Resources (AnGR) of India

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India is home to a rich and diverse array of **animal genetic resources (AnGR)**, and it plays a important role in improving the country's sustainable livestock production and rural economy. These animal genetic resources include different domesticated animals such as cattle, buffaloes, sheep, goats, and poultry. There are other livestock species also which are integral to food production, livelihoods, and the cultural heritage of various communities. India's unique geography, climate, and agricultural practices have contributed to the development of several distinct indigenous breeds that are well adapted to local environments in due course of time.

Animal Genetic Resources in India:

Cattle Breeds:

India has the largest population of cattle in the world, and its indigenous breeds are known for their adaptability, and productivity in the different agro-climatic conditions of the country. The recognized indigenous cattle breeds, are classified into milch (milk-producing), dual-purpose, and draught breeds.

- **Milch Breeds:** Known for high milk production, which include breeds like **Gir** (Gujarat), **Sahiwal** (Punjab), and **Red Sindhi** (Andhra Pradesh).
- **Dual-Purpose Breeds:** These are valued for both milk and draught purposes, such as **Hariana** (Haryana) and **Ongole** (Andhra Pradesh).
- **Draught Breeds:** Known for their strength and ability to work in the fields, these include **Nagori** (Rajasthan) and **Kangayam** (Tamil Nadu).

Buffalo Breeds:

India is the largest producer of buffalo milk in the world. Indian buffaloes are considered for their milk yield and adaptability to various environments. Some prominent buffalo breeds include:

- **Murrah** (Haryana): Known for high milk production and excellent milk quality.
- **Jaffarabadi** (Gujarat) and **Mehsana** (Gujarat): Valued for their dairy and draught potential.
- **Banni** (Gujarat): Adapted to arid environments and drought conditions.

Sheep Breeds:

Sheep breed of India include both wool-producing and meat-producing breeds. Indigenous sheep are adapted to local environments and are essential for pastoralists and farmers in marginal areas.

- **Wool-Producing Breeds:** Examples include **Rampur Bushair** (Himachal Pradesh) and **Nali** (Rajasthan).
- **Meat-Producing Breeds:** Include **Madgyal** (Maharashtra) and **Bellary** (Karnataka), which are raised primarily for their mutton.

Goat Breeds:

India has a variety of indigenous goat breeds, which are critical for meat, milk, and fiber production. Goats are an essential source of livelihood for small and marginal farmers, particularly in arid and semi-arid regions.

- **Beetal** (Punjab): Known for milk production.
- **Jamunapari** (Uttar Pradesh): A large breed known for high milk yield and dual-purpose utility.
- **Black Bengal** (West Bengal): This breed of goat is very famous for its good meat quality and its adaptability to hot, humid climates, it is distributed in large geographical areas.

Poultry Breeds:

India has several native poultry breeds that are known for their hardiness and adaptability to free-range conditions. Indigenous poultry are crucial for small-scale farmers and contribute to rural food security.

- **Aseel** (Andhra Pradesh): A hardy breed known for its fighting abilities and good meat quality.

- **Kadakhnath** (Madhya Pradesh): Known for its black meat, which is considered nutritious and medicinal.
- **Ghagus** (Karnataka): Adapted to local conditions and valued for both meat and egg production.

Camel Breeds:

Camels are important for desert areas, especially in Rajasthan and Gujarat, where they serve as a means of transport, milk production, and draught animals.

- **Bikaneri** (Rajasthan): Known for draught power and adaptability to desert conditions.
- **Kachchhi** (Gujarat): Valued for milk production and its ability to thrive in harsh conditions.

1. Equine Breeds:

India is home to a variety of horse and donkey breeds, used for transport, agriculture, and other work purposes.

- **Marwari** (Rajasthan): Known for its endurance, strength, and unique inward-turning ears.
- **Kathiawari** (Gujarat): Another famous horse breed valued for its stamina and speed.

1. Piggery Breeds:

Pig farming is an important livelihood for many tribal and rural areas in India. Indigenous pig breeds are well adapted to local conditions and provide an affordable source of meat.

- **Ghungroo** (West Bengal): A small pig breed valued for its prolificacy and adaptability.
- **Nicobari Pig** (Andaman and Nicobar Islands): Adapted to the tropical environment of the islands.

Conservation of Animal Genetic Resources:

Conserving its rich genetic diversity in livestock, India has taken different steps :

- **National Bureau of Animal Genetic Resources (NBAGR):** The NBAGR, a nodal agency, is responsible for documenting, evaluating, and conserving India's animal genetic resources. It also works to maintain and protect the Indigenous local population of livestock and poultry.
- **Breed Registration:** Indigenous populations are officially recognized and registered by NBAGR, a nodal agency, helping in their conservation and improvement.

- **Breed Improvement Programs:** Selective breeding programs are conducted to increase the productivity and resilience of indigenous breeds, ensuring they remain competitive and viable for farmers.
- **In-Situ and Ex-Situ Conservation:** The government promotes both **in-situ** conservation (preserving breeds in their natural habitats) and **ex-situ** conservation (gene banks, semen banks) to safeguard genetic diversity.

Challenges to Animal Genetic Resources in India:

- **Crossbreeding:** The indiscriminate use of exotic breeds for higher milk or meat production has led to the dilution of indigenous genetic traits.
- **Climate Change:** Changing climatic conditions pose a threat to livestock breeds that are not adaptable to new environmental stresses.
- **Loss of Grazing Land:** Rapid urbanization and industrialization are reducing grazing land, which is affecting pastoral communities and their livestock.

Conclusion:

Animal genetic resources of India are an asset and part of the country's cultural heritage. The diversity of these resources ensures sustainability in agriculture, livestock production and rural livelihoods. The conservation of our indigenous population, combined with scientific advancements in breeding and management, is essential for maintaining this rich genetic wealth for future generations.