



- Cultural values
- Genetic uniqueness



Reasons to conserve farm animal genetic resources

- To meet present socio-economic demand. (FAnGR are a source of income for poor rural communities, losing them will be detrimental to their livelihoods).
- Insurance against future changes in production circumstances.
- Cultural and historical reasons. (Cultural and historical values of most communities are reflected by the type of breeds they keep, therefore, conserving them is necessary to maintain their identity.)
- Opportunities to meet future demands.
- Regenerating population after disease outbreaks.
- Rescuing rare or endangered species or breeds.
- Providing a source of genetic material for research purposes.
- Supplying germplasm for the development of new breeds.
- Maintaining indigenous livestock gene pool diversity.



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Conservation of farm animal genetic resources



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Introduction

Nearly two billion people rely on livestock to supply all of their economic, social, cultural and dietary needs. Animal genetic resources provide meat, milk, eggs, skins and hides to the rural communities which keep livestock; animals haul carts and ploughs; they power wells and mills; bring cash and prestige; act as savings and insurance and their wastes are used as fertiliser and fuel.

The role and contribution of Farm Animal Genetic Resources (FAnGR) have often been overlooked, as they had to compete against high input and output breeds. However, indigenous FAnGR carry genes that enable them to tolerate harsh environments, cope with thorny vegetation in drought-prone areas, walk long distances and repel attacks by diseases and pests.

In general, indigenous breeds provide the necessary genetic diversity needed by modern agriculture as a means to ensure stability and are vital building blocks for future livestock breeding programmes. As such, conserving them is important, not only for the communities who keep the animals but also for the future of modern agriculture.

However, these animal resources are constantly being eroded and are nearing extinction, (according to FAO, one third of AnGR contributing to rural livelihood are endangered) as a result of various types of threats including, but not limited to, the following:

- indiscriminate cross-breeding practices
- expansion of intensive agriculture
- change in the economy
- establishment of protective areas,
- lack of market demand
- disappearance of traditional livelihoods
- loss of indigenous knowledge institutions.



What are farm animal genetic resources?

The acronym refers to those animals that are used, or may be used, for production of food and agriculture. Cattle, sheep, goats, pigs, chickens and horses, for example, form the raw material that farmers depend on, to adapt to production conditions and cope with the disease outbreaks.



What is conservation?

Conservation is an action undertaken to ensure that the diversity of farm animal genetic material is being maintained for contribution to food production, agricultural production and productivity through planning, strategies and policies for future purposes. Effective conservation of genetic resources is possible only if the breeds are identified and documented adequately, and there is a full participation towards conservation efforts of communities keeping the animals.

There are basically two ways to conserve Animal Genetic Diversity *viz. in situ* and *ex situ*.

In-situ conservation

This is the preservation of animal genetic diversity in the original production environment. This can be done in two ways: *viz.* on-farm or community-based conservation. Community-based conservation combines the sustainable use of a breed with the empowerment of rural people who keep it.

Ex-situ conservation

This means preservation of genetic material outside its original production context. This is done in two ways: cryopreservation (dip-freezing) of genetic material, e.g. semen, oocytes, embryo and DNA, or as live populations where animals are kept in zoos and experimental or show farms.



Criteria for selecting breeds for conservation

In view of a number of breeds that are considered endangered and the financial implication that comes with the programme to conserve Animal Genetic Diversity, it is imperative that strict selection pertaining to AnGR to be conserved be made. Selection criteria should include the following:

- Degree of endangeredness
- Adaptation traits
- Traits of economic importance
- Unique traits

