# BREED IN A DOMESTICATED ANIMAL-AN APPRAISAL OF CONFLICTS AND CONTROVERSIES VIS-À-VIS CONSERVATION

#### \*Veena Sahai

Department of Zoology, G.N Khalsa College Kings Circle, Mumbai 400019 \*Author for Correspondence

### ABSTRACT

The domestication of certain species of animals which were considered useful commenced in unknown antiquity. Over forty species of mammals have been domesticated with varying degree of success. The process of domestication presumably involved taming, selection and breeding of animals having most desirable traits and adaptations to native ecology. This eventually culminated in emergence of a population with unique and defined genetic and production traits called breed. There are no standard bench marks which can form true basis for deciding the endangerments of breed. Due to indiscriminate breeding and mixing of farm animals in India, many breeds are facing decline, degeneration and loss of genetic distinctiveness. The situation is already grave and warrants attention. This paper analyses these issues including resultant implications.

*Key Words:* Domestication, Selection, Breeding, Breed, Endangerment, Degeneration, Characterization, *Technology, Scenario* 

## INTRODUCTION

Human societies in their endeavor of taming and domestication resorted to selection and breeding of animals which exhibited favorable adaptive, behavioral and production traits. This process of selection resulted in the emergence of populations recognizable by certain well defined characteristics which were called breeds. Thus within a species, individual breeds are distinguished by notable differences in their morphological, physiological characteristics and their performance or production potential.

In the taxonomic classification, breed is not included. Therefore animals of different breeds of a species have the same binomial nomenclature. (Brem *et al.*, 1989)

Although, a breed is an important entity in animal production and use, yet considerable difference exists in the understanding of the breed. According to Mariante (1992) a breed is a group of animals of the same species which are clustered because they have the same origin, share certain physical, Physiological characteristics and are of commercial value. KrauBlich (1981) stated that breeds are genetic entities developed over a period a long period of time by either following certain mating schemes or by selection for a certain characteristics. KrauBlich (1981) contented that even the presence or absence of a single gene in a particular population may result in the development of new genetically defined group and given a unique breed name. Alderson (1985) held that a bred may be taken as a group of animals of similar characteristics which when mated together produce progeny of the same type, within the standard published by the registration organization.

Further a Breed is a group of animals related by descent from common ancestors and visibly similar in most characteristics. A breed may come about as a result of planned mating, or as has been most frequently the case, it could be a pure happenstance.

Sponenberg (1991) proposed simple definitions of breed. According to Sponenberg (1991) breed is a uniform population that when interbred reproduces itself. However, giving a new dimension to breed concept, Brem *et al.*, (1989) stated that in a breeds animals of same species are clubbed together due to their common origin and certain objective physiological and physical attributes. With the intention of giving certain parameters it was stressed that breeds of livestock must be defined by herd book entries which should be subject to strict breeding programs and constantly monitored for performance.

International Journal of Food, Agriculture and Veterinary Sciences ISSN: 2277-209X (Online) An Online International Journal Available at http://www.cibtech.org/jfav.htm 2013 Vol. 3 (1) January-April, pp. 258-261/Sahai

## **Review** Article

According to Acharya (1990), the population of livestock and poultry in a given location with certain well defined physical confirmation, distinct local names and distinguished from other breeds in the vicinity is generally considered as a breed. There is likelihood that a large number of these animals may be genetically distinguishable. The breeds of cattle in India can be grouping into 4 to 5 basic types. The case of sheep is also not very different. Earlier in Rajasthan all the breeds of sheep were grouped as Bikaneri but they have now been distinguished as 8 distinct breeds. These sheep however, can be grouped under three distinct types on the basis of their fleece types.

The pastoral societies of Africa have created umpteen breeds of camel. Virtually each pastoral group can claim to have created breed. This is a consequence of the fact that in traditional pastoral societies, breeding stock was rarely if ever sold and changed ownership. The changes occurred only within circumscribed social network. With the transfer of genetic stock from one pastoral group to another, the breed names were also changed. Thus the breed concept in Africa was neither related to the traits nor on the performance capacity of animals.

### Situation in India

Majority of Indian indigenous breeds of farm animals and poultry were given some sort of official recognition by imperial civil and military officials. Important characteristics of breed were recorded in the Gazettes of British India published in the early part of the last century. However, the descriptions were not based on extensive surveys. These records do not describe the extent of variability present in the animals of the breeds. A close look at the breed situation in India would show that several types of domesticated animals with distinctive attributes and forming a part of the production system still remain omitted. Apart from these descriptions, numerous other breed names have been mentioned in the report of State Animal Husbandry Departments and from other quarters. The situation is further complicated by the fact that in some cases different breed names were given, but the differences in phenotype were not clear. Demands for recognition of certain regional animals as new breeds too have come from time to time. The so called new breeds often lack documentation from the stand point of physical and production attributes. Thus breed situation in respect to farm animals is still in a state of flux.

The disparity in the number of breeds reported by Food & Agriculture Organization (FAO) in India and that of Indian publications is glaring. It appears that FAO inventories have included all possible local names which accounts for the increase in the number of breeds. Unlike several European countries, it is not mandatory to have a herd book for each breed in India.

### **Emerging FAO Perspectives on Animal Breeds**

A working was constituted by FAO in 1993 to develop an integrated global program to establish genetic relationships amongst the breeds of each domestic animal species. According to FAO global data bank, the number of breeds or strains of domesticated animals in the world exceeds 3500. The true magnitude of diversity between and within each breed is not well known. The genetic variation both, between and within the breeds is described as diversity.

The primary unit in FAO animal genetic resources manuals is a breed, strain or geographically defined population. This too is confusing. In the developed world, breeds are well defined and recognized as intranspecific groups, the members of which share particular morphological characteristics which distinguish them from other such groups.

However breeds may not clearly be defined in this way, as there may exist strains or geographically separated populations. Local populations may have different names, but without apparent change in phenotype. A change in phenotype may occur without change in name, or all populations may have just one name and be phenotypically similar. Thus FAO perspective too remains vague and fails to resolve the issue of breed.

### Breed Societies, Breed Trusts etc.

In Europe and America livestock Breed Societies have played a notable role in the maintenance of purity and development of breeds. Majority of the breed societies reflect the concern and interest of the people for a particular breed. These organizations extend patronage to the breed and sponsor programs for the International Journal of Food, Agriculture and Veterinary Sciences ISSN: 2277-209X (Online) An Online International Journal Available at http://www.cibtech.org/jfav.htm 2013 Vol. 3 (1) January-April, pp. 258-261/Sahai

## **Review** Article

upgradation. A breed society strives to maintain the interests of the people or the farming community in particular on a breed. These organizations maintain herd books, organize competitive shows and even publish sire and dam directories to promote the cause of the breed. The government agencies invariably offer recognition to the breed societies or may even partially fund their program. In India despite the presence of large number of breeds, breed survival societies or trusts do not exist. Some initiative in the recent past were taken to establish breed societies on Murrah Buffalo, Hariana,kankrej, Ongole and Gir cattle; Katiawari horse etc. However, such efforts are still on weak footing.

## Breed Status According to the Level of Risk for Conservation

An important step in the conservation program is to define the status of a particular breed in terms of level of risk; it is exposed from the point of endangerment. It is, therefore, necessary to have system of classification which may reflect the level of risk. Several terminologies are used to describe the level of endangerment or risk in livestock.

Some of these are given below:

1. Brook and Ryder (1987) categorized animals taken into consideration their actual number and decreasing rate into five categories- a)Endangered b)Vulnerable c)rare d)out of danger and e)indeterminate

2. The International Union for Conservation of Nature (IUCN) in accordance with the international Red Data Book classifies animals on their survival chances. The IUCN classification contains seven categories- a)Extinct b)Endangered c)Vulnerable d)Rare e) Indeterminate f) Insufficient Known and g) Out of danger.

3. Bodo (1990) suggested a system of classification in which there are six categories-

a)Normal Status b)Vulnerable Status c) Insecure status d)Endangered Status e)Critical Status and f) Extinct Status

4. The American livestock Breed conservancy uses three groups a) Critical b)Rare and

c) Under watch

In addition to the above classifications, grouping of breeds from the stand point of conservation has few other terminologies such as major and minor breeds; relic breeds; vintage breeds etc.

From the foregone account it is obvious that a critical and in dept examination of each

Breed to assess their status is necessary. There should be some uniformity or standardization in terminologies used to describe the level of risk vis-à-vis conservation. The breed concept also needs a clearer explanation. It is very relevant for India.

### REFERENCES

Acharya RM (1990). Endangered livestock breeds of South Asia. Animal Genetic Resources - A global program for sustainable development (Greald Wiener, G Editor). FAO Animal Production and Health Paper No. 80.

Alderson L (1980). The conservation of animal genetic resources in Great Britain. FAO- Rome Animal Genetic Resources Information 4 26-31.

**Bodo I** (1990). Methods and experiences with in situ preservation of farm animals. In Animal Genetic Resource. A global program for sustainable development (Weiner, G-Editor) FAO Animal production and heath Paper No-80

Brem G, Brenig B, Miller M and Springman K (1989). Ex situ conservation of genomes and genes of endangered cattle breeds by means of modern biotechnological methods. FAO Rome Animal Production and Heath Paper No.76.

**Brooke CH and Ryder ML (1987).** Declining Breeds of Mediterranean sheep. FAO Animal Production and Health Paper No-8.

International Journal of Food, Agriculture and Veterinary Sciences ISSN: 2277-209X (Online) An Online International Journal Available at http://www.cibtech.org/jfav.htm 2013 Vol. 3 (1) January-April, pp. 258-261/Sahai

## **Review** Article

**Majala K** (1990). Establishment of a world list of endangered livestock breeds. In Animal Genetic Resources a Global Program for Sustainable development (Weiner, G-Editor) FAO Animal Production and Health Paper No.80.

Mariante A (1992). Breed concept: In Training Manual for Animal Gene Bank in Asia held at Nanging, China (Editor Chupin D. Yaochum, C. and Zhihua, J.), FAO publication.

**Sponenberg OP** (1991). The American Minor breed conservancy experiences in conserving animal population with and without breed associations. In World Conference on Gene conservation and Rare Breed Survival Budapest.