

Breeding Policy for Cattle and Buffaloes

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Livestock sector plays an important role in Indian economy. It is an important sub sector of Indian Agriculture forming a backbone of income for majority rural people. The contribution of livestock to Gross Domestic Product was 4.70 percent in 2004-05 at 1999-2000 prices. This is the sector where the rural poor contribute to growth directly instead of getting benefit from growth generated elsewhere. The overall growth rate in livestock sector is steady and is around 4-5% and this has been achieved despite the fact that investment in this sector was not substantial. The ownership of the livestock is more evenly distributed with landless labourers and marginal farmers owning bulk of livestock. The progress in the sector results in balanced development of the rural economy particularly in reducing the poverty amongst the weaker sections. The rural women play a conspicuous role in Animal Husbandry sector. They are directly involved in most of the operations relating to feeding, breeding, management and health-care of the livestock, self help groups specially have aroused significantly since a decade or so in this sector.

The foregoing back-ground gives a statewide call to review the existing Livestock Breeding Policy in a certain and decisive manner for the present times.

Brief about Previous Breeding Policy:

The first Livestock Breeding Policy was approved in the year 1981, which was later on revised in 2004. It is further revised after a National Workshop on State's Livestock Policy held at NITIE, Mumbai on 27th and 28th October 2004.

Breeding Policy aims at:

1. Livestock development for increased production of animal-products for attaining self-sufficiency at higher level of consumption, by means of increased productivity of livestock of the State. For example- per capita, per day milk availability in the State in the year 2003-04 is reported to be only 174 grams whereas desired level is 220 grams.
2. Achieving goal of social justice, balanced regional development and increased opportunity for self-employment for rural youth.
3. Conservation of valuable animal genetic resources of the State.
4. Involving Breeder-farmers and Breeders' Association for optimizing the benefit to the owners of the livestock.
5. Setting up strict quality control mechanism for critical inputs in genetic improvement programme and increased private sector investment in the sector of livestock development.
6. To make the production system economically viable and market competitive in a well planned regime.

State's Livestock Policy 2006, is resolved as below;

Government Resolution:-

A. Breeding Policy for Livestock-

1. Breeding Policy for Cattle

Target for Genetic Up-gradation-

- a. Breeding Policy for cattle is **in consonance** with National Project for Cattle & Buffalo Breeding (**NPCBB**).
- b. It **aims at increased productivity** of cows by genetic improvement. However, it also aims at conservation of native breeds and ensuring adequate supply of quality bullocks for animal draught power in rural areas.
- c. In order to **achieve self sufficiency in milk production** it is aimed to achieve a level of 60% genetic improvement from present

level of 28% by end of year 2015 and to further improve it to 80% by the end of year 2025 through the consolidated and **collective efforts** of all the agencies engaged in cattle breeding activity viz. State Animal Husbandry Department, Co-operative Milk Unions, NGOs, Private Sector Agencies and unorganized Artificial Insemination (AI) workers in the state.

Proposed Revision:

A legislation needs to be issued to the agencies providing A.I. services in order to make them more **responsible and accountable** for implementation of breeding policy. So as to orchestrate the presently observed disarrayed efforts in a desired way as per revised livestock policy. Regular KFAs (quarterly and annual reports) from Co-operative Milk Unions, NGOs, Private Sector Agencies and unorganized Artificial Insemination (AI) workers in the state should be made available for department of Animal Husbandry.

Strategy for Genetic Up-gradation of cattle–

- i) **Cross-breeding** program for genetic up-gradation of targeted **non-descript** cattle population, in targeted herd / areas where cross-breeding program is suitable and desirable but excluding the home / breeding tracts of identified indigenous breeds of the state.
- ii) **Natural service** by 'true to type' bulls of selected native breeds, by introduction of such bulls after ensuring minimum chances of natural service by non-descript bulls by means of castration, in the areas where cross-breeding for genetic up-gradation of non-descript cattle population is not suitable, such as tribal, hilly and non-accessible areas with prevalent practice of free grazing. Selection of bulls for natural service will be on the basis of Dam's milk-yield and draft ability of the bull itself.
- iii) **Conservation of native breeds** by genetic up-gradation using semen of proven / 'true to type' bulls of the same breed and also by appropriate advanced means of bio-technology such as semen preservation, embryo preservation etc. It is envisaged that Breeder-farmers and Breeder's Associations will play important role in breed conservation.

Proposed Revision:

Presently MLDB provides Frozen Semen Doses of Khillar, Dangi, Gaulao, Red Khandhari and Deoni breeds. Based on the deliberations in the brain storming session, the decision needs to be taken whether to stick to the conventional improvement programme for genetic up gradation. Original breeding tracts and additional breeding tracts if any of indigenous breeds to be finalized with the help of breeders associations or Regional Joint Commissioner of Animal Husbandry.

Germplasm for Cross-breeding –

Germplasm of **Jersey and Holstein-Friesian** will continue to be two germplasm, which will be used for crossbreeding program in cattle. Any triple-cross-breed such as Phule Triveni of MPKV Rahuri is not included keeping in view technical difficulties in breed stabilization and also experience of other States such as Kerala in this regard.

Proposed Revision:

The discussion could be initiated on effect of anticipated Global warming issue and preferred indigenous trait of heat tolerance, use of high pedigree Sahiwal or Gir Semen for genetic up gradation of non descript cattle in low input management systems. Also think of Deoni & Red Kandhari breeds in this regard (through selective breeding) The experts from NBAGR & ICAR should comment on introduction of breed such as triple cross (Phule Triveni, Sunandini) especially in view of the issue of breed stabilization.

As per GR of 2004, the Jersey Breed is recommended all throughout the state in all districts for upgrading the ND cattle. The Holstein-Friesian breed is recommended only in areas where Irrigation facilities, thereby good quality fodder available all throughout the year. The dairy farmer is expected to follow Good Dairy Management Practices. Hf Breed is allowed to be used in irrigated parts of Pune, Satara, Sangli, Solapur, Kolhapur, Sindhudurg, Ahmednagar, Dhule, Nandurbar, Akola, Nagpur, Bhandara and Gondia districts. However it has been noted that HF Frozen Semen Doses are demanded more and Jersey Breed is seldom preferred for upgrading ND cattle in most of the above mentioned districts mainly in Western Maharashtra (although

excellent quality and high pedigreed Frozen Semen Doses of Jersey 100% breed doses are made available, they remain unutilized).

The irrigation available in Maharashtra in various regions is given as under

Region	Irrigation Potential	Kharip 000' H	Rabi 000' H	All seasons 000' H	% Irrigation
Konkan	78.98	0.00	15.19	0.92	1.16
Nasik	668.42	51.63	132.75	19.55	2.92
Pune	1515.24	112.85	272.24	205.27	13.55
Aurangabad	878.97	0.26	117.77	94.07	10.70
Amraoti	381.83	0.06	53.11	6.22	1.63
Nagpur	483.00	205.73	74.67	1.01	0.21
MS	4006.44	370.53	665.73	327.04	8.16

Inheritance Levels:-

Considering the management level with common farmers, normally the exotic inheritance / blood level in cross-bred cattle should be maintained at 50%. However, in favorable environments with farmers having better resources and management level, and also in cases the cattle it-self has inheritance level higher than 50%, the exotic blood level may be increased up to and maintained at 75% on demand of cattle-owner. However, in-charge of artificial insemination centre should, in such cases, explain to the cattle **owner the possibility of increase in cost of rearing of cattle by increase in inheritance level and possibility of achieving higher milk production at 50% inheritance level by insemination by semen of bull of higher pedigree.**

Proposed Revision:

This issue needs to be updated. The decision needs to be taken whether to stick to the conventional improvement programme for genetic up gradation throughout the state.

It appears practically impossible to assess the exotic inheritance blood level of cows presented for insemination in the field. Farmers too are confused on such a query. Therefore veterinarian *loc.sit* finds it difficult and clumsy to select a particular Semen Straw denoting particular blood level. Secondly inseminators are provided with only one biological (daughter) container, which has only six canisters. Presently, 13 types of Frozen Semen Doses are available for insemination. Therefore, it is felt that the F S doses produced should have a **simple** mention of breed type viz. HF, -CB/ Jy,-CB, instead of details such as 50%, 62.5% or 75%. This will eliminate the unnecessary inventory in the LN containers of field vets, also the ambiguity which is adherent to that of the Minimum Standard Protocol of CMU.

Ensuring Quality of Cross-breeding Program-

Sustenance and elevation in improved genetic make-up: For achieving the objective of increased milk production per lactation at any stabilized level of exotic inheritance, it is necessary to use semen of bulls of higher pedigree or progeny tested bulls with daughter's performance better than the cow to be inseminated. At present, this is not being generally observed in crossbreeding program resulting into adoption of easier solution of increasing exotic blood level for attaining increased milk production per lactation.

- a. Progeny testing program has been re-established fully and it will be ensured that within shortest possible time, proven bulls are used for genetic up-gradation by all the agencies involved in crossbreeding program.
- b. Keeping Pedigree Record of bulls and informing cattle owner accordingly at the time of insemination will be made compulsory. It will be made compulsory for the inseminators / agency producing and supplying frozen semen doses to make Bull Catalogues that contains pedigree details of breeding bulls, available to the cattle-owner, buyers of semen doses and breeders for ensuring quality standards.
- c. Artificial Insemination (AI) Cards will be made mandatory: - No proper cattle-wise record such as AI card is maintained resulting into chaotic situation in cross-breeding program. All agencies engaged in cross-breeding program will be put under statutory obligation to issue AI cards, maintain proper record for AI program

executed by it and keep record regarding source of semen doses used & pedigree record of bull whose semen is used.

Introduction of Elite Bulls for Natural Service:-

As far as possible efforts will be made to castrate all non-descript bulls, before introducing elite breeding bulls for natural service in herds / villages.

Breeding Policy for Indigenous Breeds:-

- I. The home / breed tracts of Deoni(latur), Dangi (Nasik & Thane), Khillar, (Satara, Sangli, Solapur and Kolhapur), Gaulao (Wardha) and Red Kandhari (Nanded) have been identified as indigenous breeds of cattle, which need to be protected and propagated. Suitable technology shall be introduced for evaluating draught power of indigenous breeds.
- II. Suitable technology for breed identification shall be introduced and a team of properly trained man-power will be made available for this purpose with the help of National Bureau of Animal Genetic Resources (NBAGR) Karnal, Haryana.
- III. Three pronged strategy for genetic up-gradation / conservation of native breeds will be adopted as follows;
 - a) Introduction of selected breeding bulls in herds / villages for natural service in the home tracts of these breeds.
 - b) Supply of frozen semen of proven / true to type indigenous breed for carrying out AI work in home tract of these breeds and also for cows of any of such breeds elsewhere.
 - c) Native breed shall not be allowed to get destroyed by the process of cross-breeding.
- IV. The Breeder's Association will not only be encouraged to get involved in conservation of indigenous breeds but also will be allowed to function on principles of management under its articles of association.

V. System of herd registration, suitably designed milk competition etc will be introduced to identify the high-milk yielder animals of indigenous breed and putting in place suitable system of buy-back of pedigreed male-calves for rearing them for getting quality breeding bulls.

III Program of castration of scrub bulls will take care that breeding bulls of indigenous breeds do not get castrated. However, as per owner's wish and for agricultural purposes, where docility is required, castration of such bulls will be allowed.

Proposed Revision:

Breeding tracts of indigenous breeds to be finalized with the help of breeders associations or Regional Joint Commissioner Animal Husbandry. Contrary to the dairy traits it is difficult to arrive at or to even out the draft ability of the indigenous bullocks. Therefore it is the dire need of the hour to standardize the parameters, which will be a ready reference, to denote the draft-ability. MAFSU is needed to undertake this exercise immediately.

Field Performance Recording programme in the needs to be strengthened with the help of department a MLDB, Breeders Associations & NGOs

2. Breeding Policy for Buffaloes:-

2.1 Target for Genetic Up-gradation

- a. Breeding Policy for buffalo is in consonance with National Project for Cattle & Buffalo Breeding (NPCBB).
- b. It aims at increased productivity of buffaloes by genetic improvement. However, it also aims at conservation of native breeds.
- c. In order to achieve self sufficiency in milk production it is aimed to achieve a level of 60% in respect of genetically improved buffaloes by end of year 2015 and to further improve it to 80% by the end of year 2025.
- d. This is expected to be achieved through the consolidated and collective efforts of all the agencies engaged in buffalo breeding activity viz. State Animal Husbandry Department, Co-operative Milk

Unions, NGOs, Private Sector Agencies and unorganized AI workers in the state.

2.2 Germplasm :-

Semen of Surati, Murrah , Mehsana, Zafarabadi, Pandharpuri and Nagpuri buffaloes will be used for genetic up-gradation of non-descript Buffaloes and also for performance- enhancement of descript buffalo-breeds.

2.3 Strategy:-

- a. Buffaloes of descript breeds (viz. Surati, Murrah , Mehsana, Zafarabadi, Pandharpuri & Nagpuri) should be bred only with semen of bulls of respective breed.
- b. Non-descript buffaloes should be bred with germplasm of any one of the identified breeds except Mehsana & Jafarabadi. However, subsequent selective breeding will be aimed at increasing inheritance level of the first selected breed. For this, superior germplasm of respective breed of higher pedigreed bulls will be used. The Irrigation is correlated to the availability of the fodder. The Murrah breeds need better management and fodder compared to the Surati breed. Still AI workers demand more of Murrah FS Doses than Surati breed.
- c. Conservation of Pandharpuri and Nagpuri buffaloes will be practiced especially in their home tracts and in other areas having similar geo-climatic conditions. These breeds will be used for up-grading non-descript buffaloes if demanded by owners. Frozen Semen Doses of Pandharpuri & Nagpuri breeds are being supplied by MLDB.

2.4 Conservation of Indigenous Breeds of Buffaloes-

- a. Pandharpuri and Nagpuri have been identified as two indigenous breeds of buffalo, which need to be protected and propagated.
- b. Suitable technology for breed identification shall be introduced and a team of properly trained man-power will be made available for this purpose with the help of National Bureau of Animal Genetic Resources (NBAGR), Karnal, Haryana.

- c. The Breeder's Association will not only be encouraged to get involved in conservation of indigenous breeds but also will be allowed to function on principles of management under its articles of association.
- d. System of herd registration, suitably designed milk competition etc will be introduced to identify the high-yielder animals of indigenous breed and putting in place a suitable system of buy-back of pedigreed male-calves for developing them in to breeding bulls.

Proposed Revision:

Buffaloes are bestowed with the wide range of adaptability for the diurnal variation in temperature. They are the animals that can convert carotene into vit A, also native people have developed a psychological affinity for their milk. All these things warrant a deep consideration while devising extension schemes. Legislation needs to be in place for agencies providing A.I. services in order to make them more responsible and accountable for implementation of breeding policy. Regular KFAs (quarterly and annual reports) from Co-operative Milk Unions, NGOs, Private Sector Agencies and unorganized Artificial Insemination (AI) workers in the state should be made available for department of Animal Husbandry. The Decision about use of Mehsana, and Jafarabadi breeds needs foundation, based on deliberation in the brain storming/ seminar. Using Pandharpuri / Nagpuri high pedigreed semen for upgradation of ND buffaloes in low input management systems or on farmers request. Also there is a need to evolve a suitable buffalo breed for beef production.