



RASHTRIYA GOKUL MISSION



Government of India
Ministry of Agriculture
Department of Animal Husbandry, Dairying & Fisheries

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“Rashtriya Gokul Mission”

Introduction

Cattle rearing has been a traditional livelihood in India and is closely linked to agricultural economy. India with about 199 million cattle (as per 18th Livestock Census 2007) has 14.5% of the world cattle population. Of this, 83% i.e. 166 million are indigenous. Most of the indigenous cattle (about 80%) are non- descript and only 20% belong to Indigenous Breeds recognized by National Bureau of Genetic Resources.

The cattle genetic resource of India is represented by 37 well recognized Indigenous Breeds. Indigenous cattle, in India, are robust and resilient and are particularly suited to the climate and environment of their respective breeding tracts. They are endowed with qualities of heat tolerance, resistance to diseases and the ability to thrive under extreme climatic stress and less than optimal nutrition.

The potential to enhance the productivity of the indigenous breeds of India through professional farm management and superior nutrition is immense. For this it is essential to promote conservation and development of indigenous breeds. The Rashtriya Gokul Mission aims to conserve and develop Indigenous Breeds in a focused and scientific manner.

Importance of indigenous breeds:

During 2012-2013, about 45 million cattle were “in milk”: and contributed around 59 million tonnes of milk. Cattle not only contribute substantially to milk production but are also used as draught animals for agricultural operations and transport in rural areas. Most of the agricultural operations by small farmers are performed by bullocks. Indigenous cattle are categorized as Zebu and are suited for draught power because of the presence of a hump.

Indigenous cattle are well known for their quality of heat tolerance and ability to withstand extreme climatic conditions. ¹Studies of impact of Climate Change and effect of temperature rise on milk production of dairy animals indicate that temperature rise due to global warming will negatively impact milk production. The annual loss in milk production of cattle and buffaloes due to thermal stress in 2020 will be about 3.2 million tonnes of milk costing more than Rs 5000 Crore at current price rates¹. The decline in milk production and reproductive efficiency will be highest in crossbred cattle followed by buffaloes. Indigenous Breeds will be least affected by climate change as they are more hardy and robust.

Due to their unique characteristics of heat tolerance, tick and pest resistance, resistance to diseases and the ability to thrive under extreme climatic conditions, these

¹ As reported by NDRI Karnal

animals have been imported by several countries including USA, Brazil and Australia for development of heat tolerant disease resistant stock.

Most of the Indigenous Breeds possess A2 allele of Beta Casein as compared to Exotic Cattle, known to possess higher frequency of A1 type allele². Reportedly that A1 milk is possibly associated with some metabolic disorders like diabetes, heart diseases etc. and A2 milk produced by Indigenous Breeds does not have any such association².

Need for Protection and Conservation of Indigenous Breeds:

Indigenous animals playing crucial role in the national economy through supply of draught animal power, milk, cow dung (organic manure) and cow urine (medicinal value). Crossbreds are more productive but their tendency to wilt under Indian conditions of low input and harsh climate, susceptibility to tropical diseases warrants the conservation and development of indigenous breeds.

Some of the indigenous breeds have enormous potential to become high yielding commercial milch animals under optimal farm management. The pre-requisites for the development of a breed are: a) the presence of a minimum base population and b) a wide selection differential for economic traits.

The indigenous dairy breeds with potential for development as commercially viable milch cattle in a shorter time frame are: Sahiwal in Punjab; Rathi and Tharparkar in Rajasthan; and Gir and Kankrej in Gujarat. If these breeds are selectively crossed with bulls selected through sibling and progeny testing the F-1 offsprings would be commercially viable. In this manner the entire population of the breed can be upgraded in a few generations.

The urgency for protection and conservation of indigenous breeds cannot be over emphasised. For instance breeds like Punganur, Vechur and Krishna Valley are rapidly declining warranting immediate attention.

Objectives of the Scheme:

- a) To undertake breed improvement programme for indigenous cattle breeds so as to improve the genetic makeup and increase the stock.
- b) To enhance milk production and productivity of indigenous bovines.
- c) To upgrade nondescript cattle using elite indigenous breeds like Gir, Sahiwal, Rathi, Deoni, Tharparkar, Red Sindhi.

² As reported by NDRI Karnal

- d) To distribute disease free high genetic merit bulls of indigenous breeds for natural service.

Pattern of Assistance and funds required during remaining period of 12th Plan:

Scheme is proposed to be implemented on 100% grant-in-aid basis with an amount of Rs 500 crore during the 12th Five Year Plan for implementation of mission namely 'Rashtriya Gokul Mission'. Mission will be implemented with an allocation of Rs 150.00 Crores during 2014-15.

Implementing Agency:

Rashtriya Gokul Mission will be implemented through the "State Implementing Agency (SIA viz Livestock Development Boards). State Gauseva Ayogs will be given the mandate to sponsor proposals to the SIA's (LDB's) and monitor implementation of the sponsored proposal. All Agencies having a role in indigenous cattle development will be the "Participating Agencies" like CFSPTI, CCBFs, ICAR, Universities, Colleges, NGO's and Gaushalas with best germplasm .

Components of the Scheme:

'Rashtriya Gokul Mission' will have the following components:

- a) Establishment of Village level Integrated Indigenous Cattle Centres viz **"Gokul Gram"**: i) in the breeding tracts and ii) near metropolitan cities for housing the urban cattle.
- b) Strengthening of bull mother farms to conserve high genetic merit Indigenous Breeds.
- c) Establishment of Field Performance Recording (FPR) in the breeding tract.
- d) Assistance to Institutions/Institutes which are repositories of best germplasm.
- e) Implementation of Pedigree Selection Programme for the Indigenous Breeds with large population.
- f) **"Gopalan Sangh"**: Establishment of Breeder's Societies: Gopalan Sangh.
- g) Distribution of disease free high genetic merit bulls for natural service.
- h) Incentive to farmers maintaining elite animals of indigenous breeds.

- i) Heifer rearing programme.
- j) Award to Farmers (**“Gopal Ratna”**) and Breeders’ Societies (**“Kamadhenu”**)
- k) Organization of Milk Yield Competitions for indigenous breeds.
- l) Organization of Training Programme for technical and non technical personnel working at the Institute/Institutions engaged in cattle development

1. Gokul Gram:

Under this component it is proposed to establish Integrated Indigenous Cattle Centres or *Gokul Grams* in the breeding tracts of indigenous breeds. *Gokul Grams* will be established in: i) the native breeding tracts and ii) near metropolitan cities for housing the urban cattle. Gokul Gram will act as Centres for development of Indigenous Breeds and a dependable source for supply of high genetic breeding stock to the farmers in the breeding tract. The Gokul Gram will be self sustaining and will generate economic resources from sale of A2 milk, organic manure, vermi-composting, urine distillates, and production of electricity from bio gas for in house consumption and sale of animal products. The Gokul Gram will also function as state of the art *in situ* training centre for Farmers, Breeders and MAITRI's.

Each Gokul Gram will be set up by and function under the auspices of the SIA/ EIA or in a PPP mode. The Gokul Gram will maintain milch and unproductive animals in the ratio of 60:40 and will have the capacity to maintain about 1000 animals. Nutritional requirements of the animals will be provided in the Gokul Gram through in house fodder production. Disease free status of Gokul Gram will be maintained through regular screening of animals for important diseases like brucellosis, TB and JD. An inbuilt dispensary and AI centre will be an integral part of the Gokul Gram. Gokul Gram will also be set up near to metropolitan cities for managing urban cattle. Metropolitan Gokul Gram will focus on genetic upgradation of urban cattle.

2. Strengthening of bull mother farms to conserve high genetic merit Indigenous Cattle Breeds

Under the component it is propose to identify 50 bull mother farms having good infrastructure for management of animals of indigenous breeds. Breeding farms will be identified in such a way that the identified farm is located in the breeding tract of a particular indigenous breed. These farms will be the source of indigenous breeds and supply high genetic merit disease free bulls for natural service. Funds under the component will be made available for strengthening existing infrastructure, purchase of elite breeding stock, biogas plant, urine distillation plant and other equipments as per

requirement of the farm. Bull mother farm will be made self sustainable through sale of breeding stock, milk & milk products, organic manure, urine distillate, electricity, root slips, stem slips and fodder seeds. Disease free status of the farm will be maintained through regular screening of animals against diseases.

3. Field Performance Recording (FPR) in the breeding tract:

Field Performance Recording Programme (FPR) is the initial activity for taking up development of dairy animals. Under FPR milk and other important traits are recorded to identify animal with high genetic potential. Elite animal is then propagated in the breeding and outside the breeding tract in order to prevent deterioration in the performance of the breed and to take up further development of breed. Under the component it is propose to initiate FPR in the breeding tract of the indigenous breeds recognised by NBAGR. Funds under the component will be made available to implementing agency for establishment of private AI centre, establishment of milk recorders, supervisors, computers at strategic locations, MIS for data recording, milko-tester, identification & recording of animals as per ICAR (International Committee on Animal Recording) method, disease testing of animals brought under recording, incentives to farmers participating under the programme and calf rearing centres. FPR will be established in the breeding tract of indigenous breeds. Each FPR programme will cover minimum of 50 villages and 5000 animals will be brought under recording. Farmers maintaining animals above standards and specifications set under the programme will be felicitated and given Prize Money either in cash or kind.

4. Assistance to Institutes which are repositories of Best Germplasm

Some of the Trusts, NGOs and Gaushalas are repositories of best germplasm of indigenous breeds. There is a need to involve and support such Trusts, NGOs and Gaushalas in the development and conservation of indigenous breeds. Funds under the component will be made available for MAITRI training and establishment, identification of animals using UID, disease testing and vaccination, biogas plant and organic manure. Disease free high genetic merit animals from these Trusts, NGOs and Gaushalas will be ploughed back into the breeding programme.

5. Implementation of Pedigree Selection Programme for the Indigenous Breeds having large population.

Selection of bulls can be done through methods like pedigree selection and progeny testing. Among the indigenous breeds, efforts will be made to select bulls through pedigree selection, since lack of extensive AI coverage and smaller population of indigenous breeds makes Progeny Testing unfeasible. Selecting the best bulls based on the performance of their parents (milk production of dams in case of milk production traits) forms the basis of pedigree selection. Under the component funds will be made available for establishment of calf rearing centre, AI centre, milk recording centre milk recording kits, animal identification using UID, recording of AI, incentive to farmers under the programme and rearing of male calves. For making disease free status of the Pedigree selection programme animals will be screened at regular interval for TB JD and Brucellosis.

6. GOPALAN SANGH : Establishment of Breeder's Societies in the breeding tract:

Breeders Societies plays crucial role in development and conservation of indigenous breeds. Most of the breeds in the world are developed by Breeders Associations or societies. At present only few breeders associations are available and functioning in the country-Gir Kankrej Breeders Association in Gujarat. Under the Gokul Mission attempts will made to constitute Breeders Associations on self sustainable basis. The association will take up recording of animals in the breeding tract, recommendation of bulls to be used for AI and NS in the area, standardize phenotypic character of the breed in consultation with farmer members and collection of reports on genetic disorders. Association will play role in sale and purchase of animals and collect cess from the purchaser. Breeders association will collect fee from the members on management of data of that particular indigenous breed. Under the component funds will be made available for establishment of breeders society (office, computers and other equipments) and revolving funds to meet recurring expenditure during the initial periods. 10 breeders societies will be established during the remaining period of 12th Plan. Responsibility on registration of bulls either for natural service or AI will be taken up by breeders societies so that true to breed type bulls are maintained by semen stations and true to breed type bulls are distributed for natural service.

7. Distribution of disease free high genetic merit bulls for natural service

Under the component implementing agency will be assisted to procure and distribute high genetic merit bulls for natural service in the breeding tract of indigenous breeds. Assistance will also be made available for registration of bulls for natural service and regular screening of bulls for diseases like TB, JD and Brucellosis.

8. Incentive to farmers maintaining elite animals of indigenous breeds.

Recognition of farmers maintaining indigenous breeds play an important role in attracting more number of farmers to rear indigenous animals. Elite animals available with the farmers can be ploughed back into the breeding programme. Under the component funds will be made available to implementing agency to assist farmers maintaining indigenous breeds by providing free AI services, de-worming, mineral mixture, vaccination and disease testing. Agency will maintain list of farmers maintaining elite animals of indigenous breeds and assist them in sale of their breeding stock.

9. Heifer rearing programme on 25% subsidy basis

Under the various schemes farmers are assisted for rearing crossbred calves but farmers maintaining indigenous animals are not assisted. Looking towards the importance of indigenous breeds farmers maintaining indigenous animals are proposed to be assisted. Under the component funds will be made available to the agency for identification and recording of indigenous calves born in the area, distribution of cattle feed on monthly weight gain basis, de-worming of calves and vaccination. Agency will also make arrangement for breeding of heifers using elite bulls either by AI or natural service.

10. Award to farmers, and Breeders' societies

Under the component it is proposed that the following Awards will be instituted:

- **“Gopal Ratna”** Awards: to Farmers maintaining the best herd of Indigenous Breed(s) and practicing best management practices.
- **“Kamadhenu”** Awards:
- Best managed Indigenous Herd by Institutions/Trusts/ NGOs/ Gaushalas
- Breeders' Societies

Application for the awards will be called from all dairy sector agencies in the country engaged in Indigenous Breed Development and a committee constituted at the centre will finalize award.

11. Organization of Milk Yield Competitions for indigenous breeds.

Under the component funds will be released to implementing agencies to organize state level milk yield competitions. Records of the animals participating in the milk yield competition will be maintained properly. Elite animals identified during the competition will be ploughed back by the implementing agency in to the breeding programme.

12. Organization of training programme for technical and non technical personnel working at the institutes engaged in cattle development

Under the component training programme will be organised for technical and non technical personnel working at the institutes engaged in cattle development. During 12th Plan period 14,000 personnel will be trained at State Department of Animal Husbandry training institutes, Universities, Veterinary Colleges, CCBFs, CFSP&TI, reputed NGO's and NDRI. Curriculum for the training programme will be developed in consultation with ICAR.

CENTRAL ADVISORY BOARD:

A National Level Body for supervising and giving direction to the Mission will be constituted under the Chairmanship of Hon'ble AM.

GOKUL GRAM PROJECT



RASHTRIYA GOKUL MISSION

“GOKUL GRAM PROJECT”

Concept Paper

OBJECTIVES:

Integrated Indigenous Cattle Centres – “Gokul Grams”- will be established under the Rashtriya Gokul Gram Mission with the objective of conservation and development of indigenous bovine breeds in the country. Gokul Grams will be set up in a) the Native Breeding Tract of an indigenous bovine breed and b) on the suburbs of Metropolitan and large cities (for urban cattle) with the following aims:

- i) To promote indigenous cattle rearing and conservation in a scientific manner.
- ii) To enhance productivity of indigenous breeds and increase economic returns from animal products in a sustainable manner.
- iii) To propagate high genetic merit bulls of indigenous breeds.
- iv) To encourage appropriate technology for use of Draught Animal Power.
- v) To provide balanced nutrition and integrated animal health care.
- vi) To optimize modern Farm Management practices and promote Common Resource Management.
- vii) To promote Green Power and Eco technology.

STRATEGY:

Gokul Grams will be established as an Integrated Cattle Breeding Centre for development of indigenous breeds and a source for supply of quality breeding stock to the farmers in the breeding tract. Some Gokul Grams will also be established in the vicinity of Metropolitan and large cities to house urban indigenous cattle.

- Herds of indigenous cattle will be set up with a viable composition of economic and unproductive animals in the ratio of milch: unproductive: : 60:40.
- Gokul Grams will be established by the State Implementing Agency/End Implementing Agency or under a Public Private Partnership.

- Productive animals of high genetic merit may be purchased by State Implementing Agency/ End Implementing Agency and managed along with 40% unproductive stray animal.
- In the case of PPP model the productive animals belonging to farmers in the area would be housed along with unproductive/dry animals.
- Gokul Grams will be established in the Native Breeding Tract to house indigenous cattle in the rural areas; while Gokul Grams established in the urban areas will house Urban Cattle.
- **Nutrition:** Balanced nutrition will be made available to animals. Green fodder and dry fodder will be produced at the Gokul Gram. Gokul Gram will also have block making units to produce balanced dry fodder blocks. Area specific mineral mixtures will be given to the cattle for improving growth and reproductive performance.
- **Health Care:** Animal health care and fertility will be taken care of by Veterinary Dispensary. The dispensary will have the facility for first aid, vaccination, artificial insemination, de-worming etc. Gokul Gram will have facility for practical training of MAITRIs, farmers and also to carry out extension activities.
- **Draught Animal Power (DAP):** DAP will be used in all on farm agricultural operations like ploughing, sowing, harvesting etc. with appropriate technological interventions. DAP run turbines will be used to generate electricity at the Gokul Gram. Promotion of usage and advancement of animal drawn tractors, harvesters developed through research will be done. DAP will also be promoted for drawing water for irrigation and transportation of products Gokul Gram. DAP Research and on farm Innovations promotion, training and extension will also be made part of Gokul Gram.
- **Economic importance of Cattle at every stage of their life span** – productive/ non productive and even after death is recognised and forms an integral part of the Project. The same is essential for the viability of the Project, its sustainence and its replicability.
- **Sustainability:**
 - Economic returns will be ensured through appropriate farm size:

- The Herd size (proposed at 1000 for general areas), along with the size of other operations to be large enough to ensure that the Project is viable and sustainable.
 - Use of Common facilities and resources at the Gokul Gram to ensure returns.
- Scientific Resource Management and Professional Farm Management.
- Economic returns from milch, dry and dead cattle as well as the monetary value of animal products at every stage- of both productive and non productive cattle – is central to the success of the Gaugram and its sustainability.
- Sale of basic and value added animal products like: quality A2 Milk, Milk products, variable uses of animal dung like mosquito repellents, heat resistant tiles etc.; cow urine distillate products and post death animal products like leather, hide etc.
- Sale of high genetic merit livestock produced in Gokul Gram in the form of bulls, heifers and calves will be sold to farmers, breeders and Institutions.
- **Eco friendly Technology:** Biogas, bio pesticides and Improvement of soil fertility and nitrogen content through green technology bio fertilizers, Bio mass for humus.

ACTION PLAN:

- Gokul Grams will have the capacity to house a herd of indigenous bovines with a herd size of about 1000 with 60% productive breedable females, and their “followers”, and 40% unproductive animals.
- Gokul Gram will be a Centre of Excellence and will maintain animals scientifically.
- Suitable land for the Gokul Gram will be provided by the SIAs/EIAs.
- Gokul Gram Management will be trained by State Department of Animal Husbandry in scientific management of animals using MSPs and SOPs developed by DADF. They in turn will train Farmers of the vicinity by organising farmers training programme in Gokul Gram.

- Animals will be maintained at Gokul Gram will be identified using UID Numbers and tags. Data on each animal will be entered in the National Data Base.
- The Herd will be housed in eco- friendly sheds constructed in the Gokul Gram providing a minimum space of 10 square feet per anima along with provision of waste disposal. Calf pens will also be constructed.
- The entire herd maintained at Gokul Gram will be artificially inseminated using semen of elite bulls of indigenous breeds.
- Twenty percent of the herd will be replaced annually by the calves born in the Gokul Gram.
- Feeding of the animal will be done under the supervision of an Expert. Balanced ration will be given to all the animals maintained at the Gokul Gram. Nutrition will be provided to the Herd from high yielding, palatable and nutritious fodder varieties grown in house, augmented by additional nutrients.
- Animals will be tested regularly by the Veterinarian against *Brucellosis*, *Tuberculosis*, *Johnes Disease* as per the protocol for disease testing.
- Animals will be vaccinated against the diseases prevalent in the area (*Haemorrhagic Septicaemia*, *Black Quarter* and *Foot & Mouth Disease*).
- New animals will be allowed to enter in Gokul Gram after proper testing against the diseases mentioned in the health protocol.
- Milk produced will be stored scientifically in the Bulk Milk Coolers (BMC) after proper testing using milko-scan for milk fat and protein on the Gokul Gram site. The chilled milk will be procured by the dairy cooperative in case the EIA is a Cooperative. In all other cases the milk will be sold to a dairy cooperative society.
- Farmers and Management of the Gokul Gram will also have the option to sell the milk and milk products in niche markets at premium rates fetched by A2 milk of indigenous animals.
- Cow dung will be used to produce organic manure. About 3,280 tonnes of manure will be produced at the farm and same will be used in the village for improving fertility of the soil. Later on the entire village will be encouraged to shift to organic farming

- Bio gas plant will be installed at the farm and bio gas will be used to run efficient generators to produce electricity within the Gokul Gram. Electricity produced from biogas will be used to run tube wells and for other agricultural activities.
- Bio compost and Vermi-compost pits will be created to improve fertility of the soil in the village.
- Innovative products made from Cow dung like hand-made paper, mosquito repellents, heat resistant roofing tiles, dry and oil bound distemper, plant pots etc will be promoted and manufactured in Gokul Gram. Besides providing value addition, this will also generate employment in the area.
- Cow urine will be converted into bio-pesticide and bio fertilizers and same will be used in the Gokul Gram and excess will be sold. Cow urine distillate will also be sold to medicine manufacturers.
- After death the cow will be sold to produce various products.
- Milk products produced at the Gokul Gram like cow ghee, butter and various other products like sweets etc will be sold at a premium rate.

FINANCIAL OUTLAY:

The total capital investment for construction of cattle sheds; calf pens, irrigation facility, rain water harvesting, veterinary dispensary etc will be as per the estimates drawn by the State Government approved Agencies. In the case of equipments like Bulk Milk Coolers, Biogas Plants etc will be as per NPBBDD and extant norms.

TIME FRAME:

Establishment of Gokul Gram will be completed in one year.

EXPECTED OUT COME:

- Conservation and development of indigenous breeds.
- Enhanced productivity of indigenous breeds: upto 1000 Kg/ lactation in Project area.

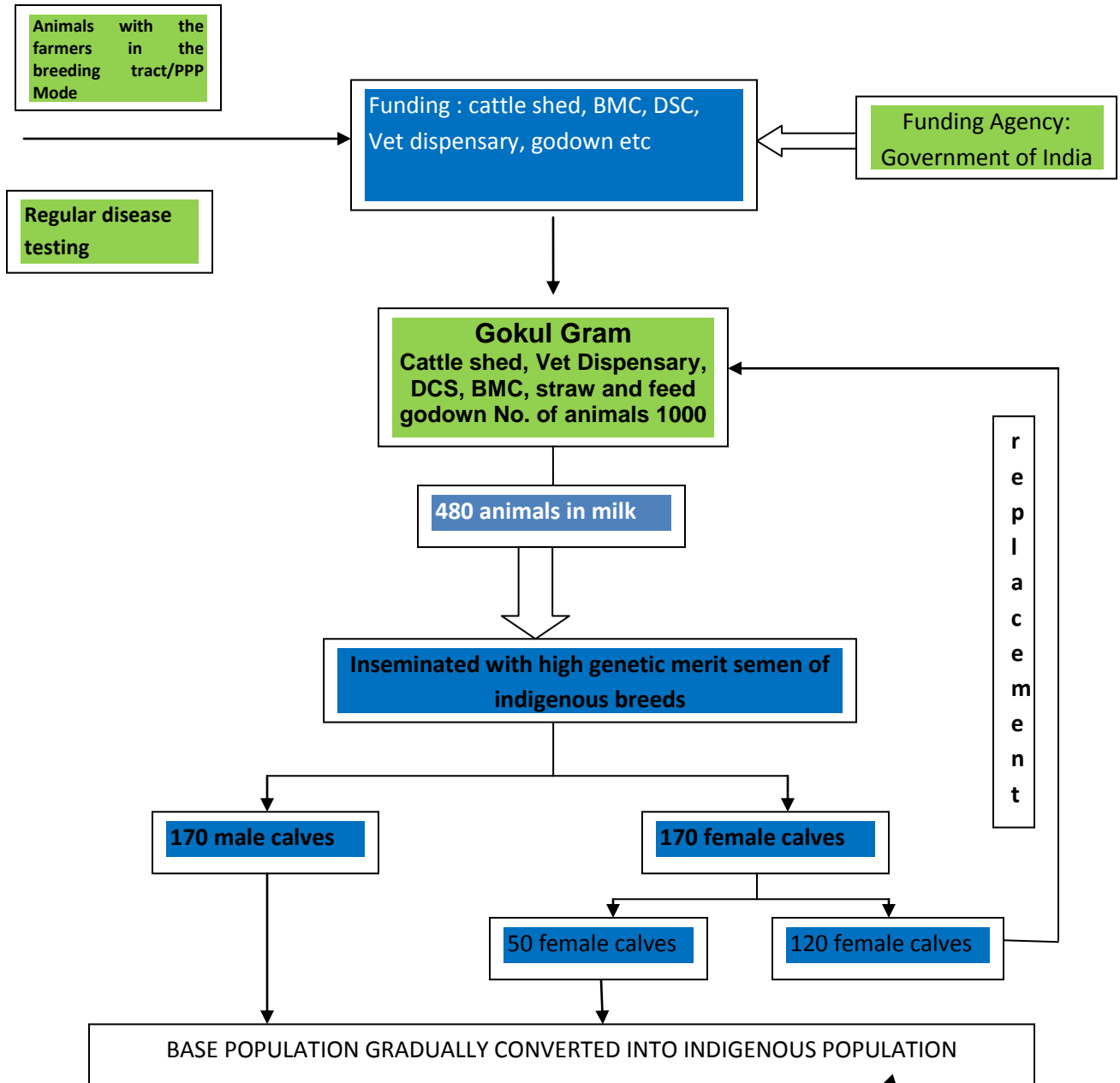
- Increase in population of Indigenous Breeds.
- Availability of High genetic merit disease free bulls and surplus female calves for genetic up-gradation of non-descript animals in the area, thereby improving the physical quality of life of farmers of the region.
- Greater access to organised market for A2 milk and milk products and higher Farmers' stake in conservation and development of indigenous breeds.
- Enhanced productivity of urban cattle and shelter for dry dairies and stray cattle.
- Reduced Carbon footprint and spread of Green Power and eco-friendly technology.

ANNEXURE-I**INFRASTRUCTURE**

S. No.	Equipment/Infrastructure Required
1.	Cattle Sheds (2) with capacity to house 1000 animals, eco-friendly roofing
2.	Calf Pens (1) eco-friendly roofing
3.	Irrigation facility
4.	Rain Water Harvesting
4.	Veterinary Dispensary
5.	Bio Gas Plant
6.	Generator (DAP and Bio Gas Driven)
7.	Agricultural Equipments (DAP drawn)
8.	Ration Balancing: Computers
9.	Urine Distillation Plant
10.	Weighing Balance
11.	Vermi-compost pits
12.	Chaff Cutter (DAP Drawn)
13.	Training and extension wing: Practical Training of MAITRI
14.	Administrative Block: Monitoring Cell
15.	Bulk Milk Cooler
16.	Butter Making Unit
17.	Ghee Making Unit
18.	Sweet Making Unit
19.	Semen storage and Liquid Nitrogen Storage facility: Cryocontainers, LN and semen transport vehicle
20.	Fodder Block Making Unit
21.	Other equipments as per requirement

Annexure II

Model Technical Programme (for 1000 Animals 60% Productive and 40% unproductive):



Participating Institutions for Innovation and Appropriate Technology

1. National Dairy Research Institute, Karnal
2. National Institute of Rural Management, Ahmedabad
3. National Dairy Development Board, Anand
4. Indian Institute of Technology
5. Indian Council of Agricultural Research and its Institutions
6. State Veterinary Universities and Colleges
7. Any others may be decided by Government of India