Rashtriya Gokul Mission

1. Introduction:

- "Rashtriya Gokul Mission" has been launched in Dec. 2014 with an outlay of Rs 2025 crore for development and conservation of indigenous breeds through selective breeding especially for genetic upgradation of 11.3 crore low milk yield nondescript bovine population.

- It is time in taking up development of more disease and climate resilient productive indigenous cow for the farmer than a foreign breed cow. It is an established scientific fact that the disease resistance and heat tolerant is much better in indigenous breeds like Gir, Red Sindhi, Sahiwal, Rathi, Kankrej, Hariana and Tharparkar etc than the exotic breeds.

- The Rashtriya Gokul Mission is very timely in that sense the cow as an income asset will become more productive and useful to the small and marginal farmer who largely own more than 90% of the poor productive cows.

- With increasing mechanisation of Agriculture, the demand of draught purpose breeds of cattle is reducing. These breeds are being preserved at Gokul Grams, National Kamdhenu Breeding Centres and also by creating Nucleus Herd through Embryo Transfer Technology and IVF.

- Projects worth of Rs. 1865.11 Crore have been approved and Rs. 784.42 Crores have been released to the states upto 11th December 2018.

1.1 Components:

Major components under the scheme are as under:

Breed Improvement by Modern Technology

- Establishment of ETT & IVF laboratories
- Sex sorted semen production
- E-Pashuhaat Portal
- Establishment of National Bovine Genomic Centre for Indigenous Breeds.

Conservation of Indigenous Breeds

- Establishment of "Gokul Gram"
- Establishment of National Kamdhenu Breeding Centre
- Identification and issue of Health Cards to in Milk bovines

Awareness Programme:

- Award to Farmers ("Gopal Ratna") and Breeders' Societies/Organisation ("Kamdhenu")
- Organisation of Fertility Camps

Enhancement of Production and Productivity

- Field Performance Recording (FPR) /Pedigree Selection
- High genetic merit bulls for AI

Extension of AI Coverage

- Establishment of MAITRI centres
- Strengthening of existing AI centres
- Strengthening LN storage and transport system
- Training of Existing AI Technicians

1.2 Physical and Financial Progress made:

The scheme has been approved with a financial outlay of Rs. 2025 Crore over a five years project period. Year wise allocation made available under the scheme since 2014-15 is as under:

BE and expenditure made under RGM since 2014-15
Table1: Financial allocation and funds released:

Financial	Rs. Crore					
	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**Total**
Allocation	159.40	81.77	104.5	190	301.5	837.17
Expenditure	159.02	81.76	118.75	187.64	245.46	634.22

1.3 Physical Progress under Rashtriya Gokul Mission:

Table2: Physical Achievement made under the Scheme

SN	Components	Target	Achievement
I	**Productivity Enhancement**		
1	High genetic merit bulls for AI	5417	1841
2	Field Performance Recording (FPR)	84381	55651
II	**Conservation of Breed**		
3	Establishment of "Gokul Gram"	20	4 (Varanasi, Mathura, Patiala, and Tthawade Pune)
4	Establishment of National Kamdhenu Breeding Centre	2	1 (One in Andhra Pradesh completed Work is under progress in MP
5	Identification and issue of Health Cards to in Milk bovines	91 mn	16.6 mn (registered)
III	**Extension of AI Coverage**		
6	Establishment of MAIRTI centre	15803	7322
7	Strengthening of existing AI centre	22295	14375
8	Training of AI Technicians	54728	32410
IV	**Breed Improvement by Modern Technology**		
9	Establishment of ETT & IVF laboratories	50	19 sanctioned and 10 made functional
10	National Bovine Genomic Centre for Indigenous Breeds	1	NDDB, Anand and ICAR-NBAGR, Karnal are working together. INDUSCHIP developed for Genomic selection. 6000 animals tested with induschip
11	Sex Sorted Semen Production facility for Indigenous breed	10 Semen Stations	2 (1 Semen Station at Rishikesh under Uttarakhand Govt and 1 semen station with BAIF). Sex sorted semen production for indigenous breeds started from 15th October In order to create awareness among farmers pilot project with sex sorted semen has been initiated in 5 districts.

12	E-Pashuhaat Portal development	1	Created (Information of 8.93 Cr. Semen Dose Production, 6.7 Cr Semen dose sold, 9.74 lakh Live animal and 363 Embryo is available on the portal)
V	**Awareness Creation**		
13	Award to Farmers ("Gopal Ratna") and Breeders' Societies/Organisation ("Kamdhenu")		84

1.4 CONSERVATION OF INDIGENOUS BREEDS:

1.4.1 ESTABLISHMENT OF GOKUL GRAMS

The Rashtriya Gokul Mission also envisages establishment of integrated cattle development centres 'Gokul Grams to develop indigenous breeds including upto 40% nondescript breeds:

- To promote indigenous cattle rearing and conservation in a scientific manner.
- To propagate high genetic merit bulls of indigenous breeds.
- To optimize modern Farm Management practices and promote Common Resource Management.
- To utilize animal waste in economical way i.e. Cow Dung, Cow Urine

Establishment of 20 Gokul grams have been sanctioned for 13 states under the scheme with an outlay of Rs 197.67 crores. Rs. 74 crore has been released to states for establishment of Gokul Grams.
Details of 20 Gokul Grams sanctioned for establishment of is as under:

State	**No. and Locations of the Gokul Grams**		**Fund allocated (Rs. in Crore)**
	Nos. of Gokul Gram	**Location**	
Andhra Pradesh	1	Chadalwada, Parkassam	10
Arunachal Pradesh	1	Lohit	3.44
Bihar	1	Dumraon Buxar	7.9
Chhattisgarh	2	Bemetra and Sarkanda(Bilaspur)	11.97
Gujarat	3	Dharampur, Surat and Banaskantha	63.36
Haryana	1	Hissar	15
Karnataka	1	Kurikuppe Bellary	5
Maharashtra	3	Palghar,Pohra and Tathtawade	27
Madhya Pradesh	1	Ratona Sagar	10

Punjab	1	Bir Dosanji Patiala	12.85
Uttar Pradesh	3	Varanasi, Mathura & Shahjahanpur	24.14
Uttarakhand	1	Govardhanpura	1.64
Telangana	1	Veterinary University Hyderabad	5.37
TOTAL	**20**		**197.67**

1.4.2 ESTABLISHMENT OF NATIONAL KAMDHENU BREEDING CENTRES (NKBC):

For development, conservation and preservation of Indigenous Breeds two National Kamdhenu Breeding Centres are being be set up, as a Centre of Excellence to develop and conserve Indigenous Breeds in a holistic and scientific manner. A Nucleus Herd of all the Indigenous Bovine Breeds (43 Cattle and 15 Buffaloes) will be conserved and developed with the aim of enhancing their productivity and upgrading genetic merit.

The project is being implemented for the establishment of National Kamdhenu Breeding Center at 2 locations (total Rs. 50 crores) at the cost of 25 crores each. The main objectives of the scheme are as follows:

- Conservation, promotion and development of 43 species of cattle and 15 breeds of buffaloes.
- 1000 High Genetic Merit Indigenous animals will be maintained at each centre of all registered breeds
- Each center will be set up in about 1000 hectares for this purpose. modern semen centers, veterinary clinics, Biogas plants, arrangements of balanced diet, gomutra and dung etc. are being established in additional to cow sheds and training centre. Apart from this, arrangements for Vermi-Compost, Silage Pit, Training, Milk Processing etc. is also being arranged.
- Special emphasis on development of conservation of breeds like Punganoor and Vechur

Under the scheme, the work of National Kamdhenu Breeding Center is going on in two states:

- Chintaldevi, District- Nellore, Andhra Pradesh and Kiratpur Itarsi, District Hoshangabad, Madhya Pradesh. Amount of Rs. 25 crores each to AP and MP have been released for establishment of these centres .
- Work for establishment of AP centre has been completed and work in MP is in active progress.

1.4.3 PASHU SANJIVNI:

Reasons for initiation of the scheme:

(i) As per Integrated Sample Survey 91 million cattle & buffaloes are in milk but their records on breeding, productivity, treatment and vaccination were not properly maintained by the State Animal Husbandry Departments.

(ii) System for maintaining records on the animals was not evolved in the country.

(iii) Due to absence of records on animal identification and traceability, it was not possible to separate healthy animals from diseased animals and animal products obtained from healthy animals and diseased animals.

(iv) Lack of proper animal identification and traceability was major cause of the spread of animal as well as zoonotic diseases in the country.

(v) Country was also facing difficulty in expanding trade of milk & milk products there was no established animal identification and traceability to system to meet sanitary and phytosanitary (SPS) requirements.

Major Activities

i) Animal identification and traceability using polyurethane tags with 12 digit unique identification number (UID) as per the method prescribed by International Committee on Animal Recording.

ii) Uploading information on Information Network for animal Productivity and Health (INAPH) on online mode.

Technology for animal identification

(i) Animals are being identified under the Pashu Sanjivni using poly urethane tags with 12 digit unique identification number as per method developed by International Committee on Animal Recording. Unique identification number are being generated by NDDB.

(ii) NDDB has developed Information Network for animal Productivity and Health (INAPH) and same has been used as National data base for uploading breeding & health related information on the cattle and buffaloes identified using polyurethane tags with 12 digit unique identification number (UID).

Cost of the project:
An allocation of Rs 148 crores has been approved under the scheme for implementation Pashu Sanjivni component and GoI share of 85.74 crore has been released to the States. Cost of each tag approved under the scheme is Rs 8 and Rs 4 for each health card (nakul Swasthya Patra).

Major Outcomes targeted:

(i) Traceability and tracking of animals for health and productivity
(ii) Control on spread of animal diseases through tagging and targeted vaccination
(iii) Scientific management of animals for better health and reproduction
(iv) Enhanced production and productivity;
(v) Improvement in quality of livestock & livestock products and
(vi) Increase in trade of livestock and livestock products by meeting out SPS issues.

Present Status:

All the funds for the Pashu Sanjivni Scheme has been released to the states and so far 16.6 million animals have been tagged and their data have been uploaded on INAPH data base. Health cards have been issued to 80 lakh animals in milk. State wise animals to be registered are given at **Annexure-II.**

1.5 BREED IMPROVEMENT BY MODERN TECHNOLOGY

1.5.1 Establishment of Sex Sorted Semen Production Facility:

- With mechanisation of Agriculture, utility of male bovines have reduced. Farmers are not willing to maintain Bullocks for agriculture or any other draft work. Hence, male calves born at farmer house have become a liability. Due to religious regions culling of male bovines is difficult in most part of the country. Farmers often let the male calves loose which are resulting into increase in stray animal population.

- Only female calves can be produced (with more than 90% accuracy) by use of latest technology like Sex Sorted Semen in AI program. This technology can be a game changer for India. Extensive use of this technology will not only address the stray animal issue but would also increase the number of female animals thereby increasing income of farmers by sale of female or by sale of milk.
- Two projects for establishing facility of Sex Sorted Semen Production at one from Uttarakhand and other from Maharashtra has been approved. Sex sorted semen has been started from 15th October 2018.
- In order to create awareness among the farmers a pilot project on AI with sex sorted semen has been initiated in 5 districts of the country.

1.5.2 Establishment/strengthening of Embryo Transfer and In-vitro Fertilization centres:

- Under the scheme it is envisaged to strengthen/establish 20 ETT/ IVF laboratories. Projects for strengthening/ establishment of 15 ETT/IVF lab are approved by Project Sanctioning Committee.
- It is envisaged that these ETT/IVF laboratories will produce 3000 High Genetic Merit Indigenous Breed Bulls which will be supplied for Semen Production or Natural Service.
- Last year during 2-14th October 391 Indigenous embryos were transferred with a success rate of 25%.
- Statewise ETT centres being established is given below:

Sl. No.	State	Location of ETT Centre	Focused Breed
1	Andhra Pradesh	Lam Farm Guntur	Ongole & Punganur
		Chintaladevi, Nellore	All breeds of cattle and buffaloes
2	Bihar	Patna	Ganagatiri, Red Sindhi, Bachur etc
		Samastipur, Central University	Ganagatiri, Red Sindhi, Bachur etc
3	Himachal Pradesh	Palampur	Red Sindhi Sahiwal
4	Kerala	Matupatti	Vechur & Sahiwal
5	Madhya Pradesh	Bhopal	Sahiwal, Gir, Malvi, Nimari & Kenkatha
		Itarsi, Hoshangabad	
6	Maharashtra	Pune	Gir, Sahiwal, Red Kandhari, Dangi, Deoni & Gaolao
		Nagpur	
7	Punjab	Patiala	Sahiwal
		Ludhiana	Sahiwal
8	Tamil Nadu	Hosur	Red Sindhi, Kangeyam, Umblacherry, Pullikulam and Bargur
		Namakkal	
9	Uttar Pradesh	Niblet	Sahiwal Kherigarh, Mewati, Ponwar
		Bareilly	
10	Uttarakhand	Dehradun	Red Sindhi & Sahiwal
12	Chhattisgarh	Anjora Durg	Sahiwal & Kosali
13	Gujarat	Ahmedabad	Gir, Sahiwal, Kankrej

1.5.3 National Bovine Genomic Center for Indigenous Breeds (NBGC-IB)

- In developed dairy countries genomic selection is used to increase milk production and productivity for attaining faster genetic gain.
- In order to increase milk production and productivity of indigenous cattle, a National Bovine Genomic Centre will be established in the country.
- By using genomic selection indigenous breeds can be made viable within few generations.
- This center will play crucial role in identification of disease free High genetic merit bulls of indigenous breeds.
- A custom genotyping chip (INDUSCHIP) which is suitable to genotype Indian cattle breeds and their crosses has been developed by NDDB, Anand in partnership with SAG, Bidaj. This chip will be used for genomic selection in Indigenous Bovines. Till date 6000 animals have been genotyped.

1.6 e-pashuhaat portal:

- For the first time in the country under the scheme National Mission on Bovine Productivity E Pashudhan Haat portal has been developed for connecting breeders and farmers regarding availability of quality bovine germplasm.
- Through the portal breeders/farmers can sale or purchase their breeding stock. Information on all forms of germplasm including semen embryos and live animals with all the agencies and stake holders in the country has been uploaded on the portal. Through this portal farmers will be aware about the availability of quality disease free bovine germplasm with different agencies in the country.
- The portal will lead to propagation of high genetic merit germplasm. Through the portal price evaluation will be available with the farmers/ breeders. Through the portal there will be no involvement of middlemen in sale and purchase of animals. Portal for sale and purchase of germplasm in all the forms is not available even in developed dairy countries.
- This portal will give new dimensions to development and conservation of indigenous breeds as at present information on availability of germplasm of indigenous breeds is not available with the farmers.
- Information of 8.93 crores semen doses produced; 6.70 crore semen doses sold, 363 embryos and 9.74 lakh live animals is available on the portal as on 12.12.2018.

1.7 AWARENESS PROGRAM:

National Gopal Ratna and Kamdhenu Awards:

In order to create awareness and reward Farmers and Institutions who are engaged in scientific management of recognized Indigenous cattle breeds National Gopal Ratna and National Kamdhenu Award have been instituted under Rahstriya Gokul Mission. Department of Animal Husbandry, Dairying, and Fisheries, Ministry of Agriculture and Farmers Welfare Government of India bestowed 12 National Kamdhenu and 10 National Gopal Ratna Awards for the first time in 2017-18 on the World Milk Day- 1st of June 2017. On similar lines, on 1st June 2018 (World Milk Day) 62 farmers and

Institutes were rewarded various awards under the scheme for scientific and professional management of Indigenous Breeds.

1.7 Krishi Kalyan Abhiyan:

1.7.1 AI coverage with HYIB: Artificial insemination is proven technology in India for enhancing milk production and productivity of bovines. In order to enhance AI coverage through use of semen of High Yielding Indigenous Breeds (HYIB). Funds are being released to the States for strengthening field AI network, establishment of MAITRIs, streamlining LN transport and distribution system.

1.7.2 Phase-I:

For enhancing AI coverage in 112 aspiration districts an amount of Rs 973 lakh has been released for covering 25 identified villages in each of 112 aspiration districts.

17.3 Impact of the programme of Phase-I:

(i) Through this programme, A.I has been inducted in villages which are not covered under A.I at present.
(ii) Acceptability of A.I among farmers will increase which in-turn will result in increased A.I coverage in the area.
(iii) It is expected that 38278 calves would be born, out of which 50% that is 19139 would be elite female calves and 50% that is 19139 would be high genetic merit male calves.
(iv) Each female calf is expected to produce 5 litres of milk /day resulting in a total milk production of 34 MMT / year.
(v) An amount of Rs. 140 crores as annual income would be generated by selling the milk @ Rs. 40 per litre.
(vi) Programme will add considerable milch animals to the dairy herd of the area.
(vii) Propagation of germ plasm of elite indigenous breeds.
(viii) Sizeable bovine population will come under animal identification and traceability through tagging.
(ix) Bull calves meeting the Minimum Standard Protocol (MSP) for frozen semen production would be lifted by semen station. Calves falling under MSP would be used for natural service or for draft purpose

17.4 Phase-II:

Additional 100 villages in addition to 25 villages covered during the Phase I are being covered under AI with HYIB semen during Phase-II from 2nd October to 31st December 2018. About 10 lakh breedable bovines will be covered during this Phase. The Phase-II is being implemented with an allocation of Rs 31.5 crores.

117.5 Phase-III

During Phase-III AI with HYIB will be implemented in additional 100 villages of aspirational districts covering 8.9 lakh breedable bovines. Programme will be implemented from 15th Jan to 15 April 2018 with an allocation of Rs 28 crores.

2. **National Dairy Plan**:

National Dairy Plan Phase-I (NDP-I) has been launched with World Bank assistance with an outlay of Rs. 2242 crores.

2.1 Objectives:

- Increase productivity of milch animals and thereby increase milk production
- Greater access to milk producer to organized milk processing sector

NDP-I focus on areas with higher potential in the 18 major milk producing States of Uttar Pradesh, Punjab, Haryana, Gujarat, Rajasthan, Madhya Pradesh, Bihar, West Bengal, Maharashtra, Karnataka, Tamil Nadu, Andhra Pradesh, Orissa, Kerala, Uttarakhand, Jharkhand, Chhattisgarh and Telangana constituting 90% of the milk production. Coverage of NDP I will however be across the country in terms of benefits accruing from the scheme.

PARAMETER	EoP TARGET	Achievements
Prodn of HGM cattle and buffalo bulls	• 2,500 • 400 IMPORT	• 2020 • 171bulls/480 Emb.
Strengthen “A” and “B” grade Semen Stations (Mn in 2011-12)	• 100 Semen Doses produced annually (in million) during the year *	• 115.90 million (out of which 64.66 million semen doses are produced by semen station under NDP I)
Doorstep AI delivery Services	• 3000 MAIT • 4Mn AI	• 1330 MAITs • 1.57 Mn
Ration Balancing Programme	• 2.7 Mn • 40,000 villages	• 2.61 Mn • 31751 villages
Fodder Development	• 1794 mowers • 2144 silage	• 3171 Mowers • 2084 Silage units
Expanding VBMP System	• 31,900 villages • 12.6 lac farmers	• 35741 villages • 12.32 lac farmers

**Targets for All India*

2.2 The NDP I envisages setting up a pilot model for viable doorstep AI delivery services including animal identification and a reporting system through a professional service provider which is expected to be financially self-sustainable by the end of the project period. NDP-I also has focus on production of high genetic merit cattle (indigenous, crossbred and exotic) and buffalo bulls through progeny testing and pedigree selection methods that would then be used in production of high quality disease free semen. Preservation and conservation of 6 indigenous breeds of Cattle (Tharparkar, Gir, Sahiwal, Hariana, Kankrej and Rathi) and 6 Buffalo Breeds (Murrah, Jaffarabadi, Mehsani, Pandharpuri, Nili Ravi and Banni) is being undertaken under NDP-I. Support to extension initiatives for increasing fodder yields by promoting use of quality fodder seed, demonstrations for silage making, reducing wastage as well as enrichment and densification of crop residues is also promoted to improve milk production.