

**INNOVATIVE PROJECT
FOR “GENETIC
IMPROVEMENT OF
SHEEP AND GOAT”
(GISG) UNDER
NATIONAL LIVESTOCK
MISSION**

2017

INNOVATIVE PROJECT FOR “GENETIC IMPROVEMENT OF SHEEP AND GOAT” (GISG) UNDER SUB-MISSION OF LIVESTOCK DEVELOPMENT

1. CURRENT STATUS

1.1 Population and growth rates of Sheep & Goat:

Sheep and goats are important species of livestock for India. They contribute greatly to the agrarian economy, especially in areas where crop and dairy farming are not economical, and play an important role in the livelihood of a large proportion of landless as well as small and marginal farmers.

CHART-I: No of Household Enterprises having Cattle, Buffalo, Sheep, Goat & Pig

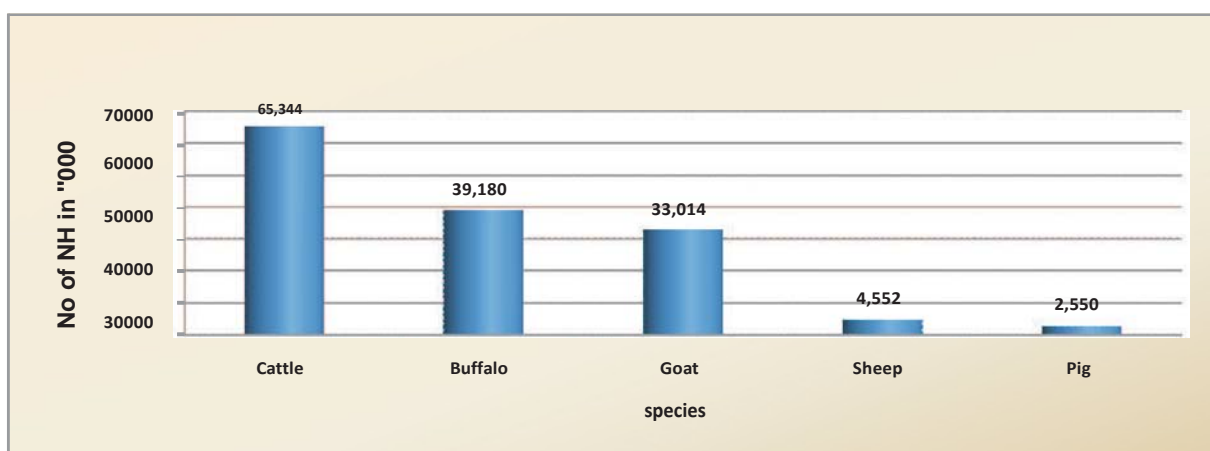


CHART-II: Population statistics of Sheep & Goats from the 19th Livestock Census 2012

Small Ruminant	Population as per 2012 census	No of farmers holders
Sheep	65 million	4.55 million
Goat	135 million	33.01 million

The population of Sheep is 65 million, Goat is 135 million. Further, there is a change of population of (-) 9.07% in Sheep and (-) 3.82% in Goat in the period 2007 to 2012 livestock census. More so, this decline is (-)16.82% in case of male indigenous Sheep and (-)7.79% in male Goat, which is attributed to more culling / death of the male animals that is more reduction of the male goats/sheep population than can be reproduced of extant reproduction rate. This is attributed as being due to increasing demand of meat in the country as compared to the available animal from the natural reproduction rate. The long term consequence of this could be shortage of goat and sheep meat which in turn has impact on the nutritional requirement fulfillment of the country's population. This will have adverse impact on prices of the meat and then consequential demand for imports which would be detrimental to the goat/sheep farmers, normally landless and small/marginal farmers who would lose the opportunity of increasing their income should there have been support from government to produce more goat/sheep.

As per available data, the sheep population growth rate has been 1.19% CAGR for the period 1992-2012 as per chart below with a decline in the period 2007-12:

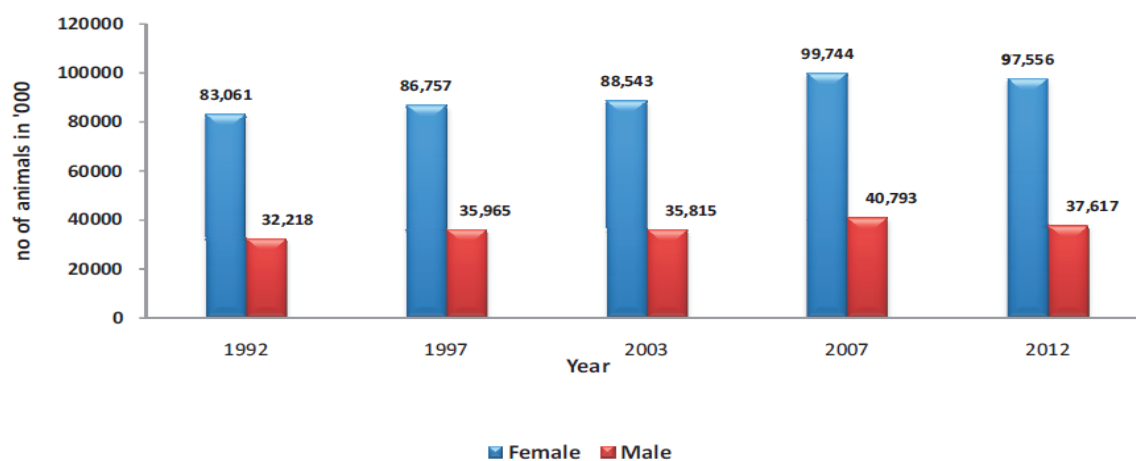
CHART-III: Sheep Population in year 1992 - 2012



This also goes to show that the Sheep development activities undertaken in different States of the country during recent years have not made much impact. This is because Sheep-rearing continues to be a backward subsistence based side occupation, primarily in the hands of poor, landless or small and marginal farmers who own either an uneconomical holding or no land at all, and thus graze their sheep on natural vegetation and crop stubbles supplemented by tree loppings.

Similarly, almost no developmental effort has been made for improving goats. The density of livestock per unit of grazing area has greatly increased, owing to increases in their numbers and the shrinkage of grazing land. Notwithstanding, the Goat male and female population growth rate has been 0.78% CAGR and 0.81% CAGR respectively for the period 1992 to 2012 as per chart below with a negative growth rate in the period 2007-12 as may be seen in the chart below:

CHART-IV: Goat Population in year 1992 - 2012

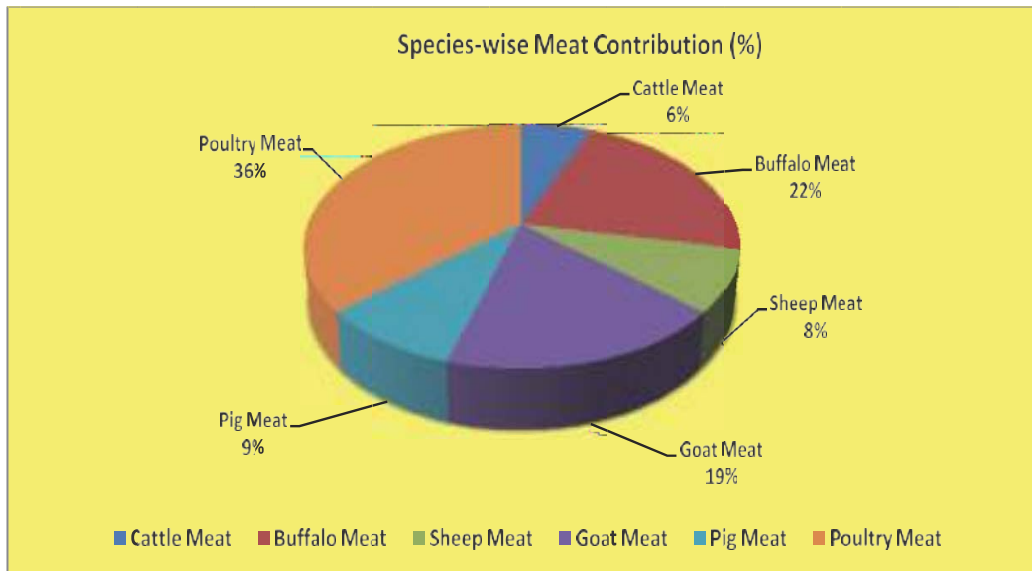


1.2 Meat, Milk and Wool Production

The meat production in the country as per 2014-15 data was 6.6 million tons with a per capita availability of 4.94 kg. The total meat production in 2014-15 by Sheep was 529.03 thousand tons and by Goat 914.13 thousand tons.

The meat type break up for the country is as below:

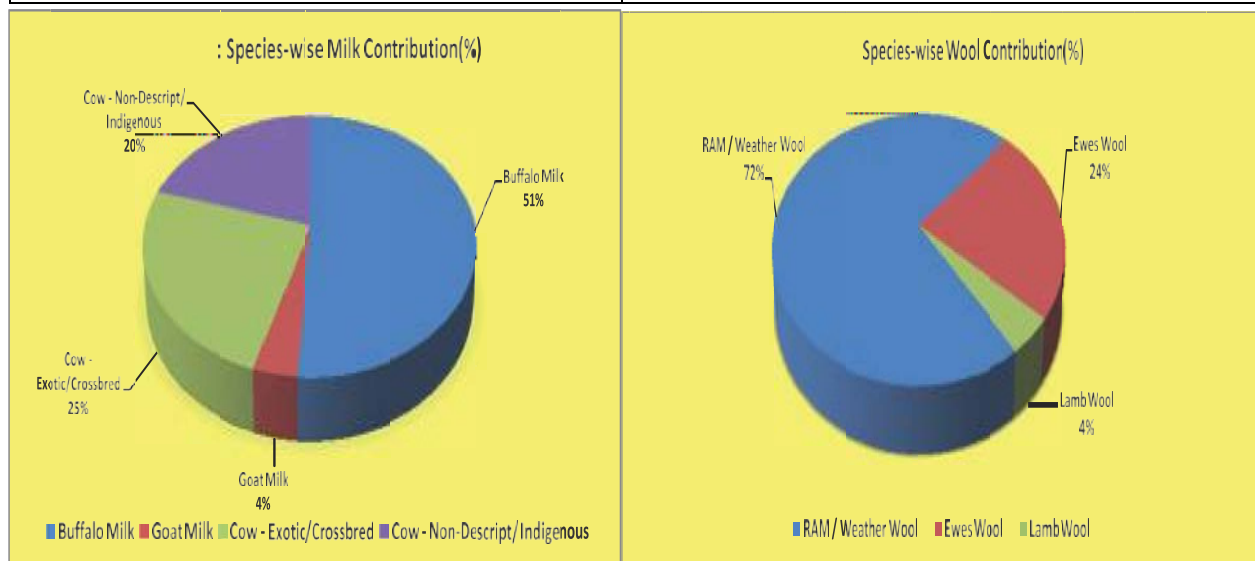
CHART-V: Species-wise Meat Contribution (%)



The total Goat milk production in 2014-15, was 5180.18 thousand tones against total milk production of 146 Million tones, i.e. 3.23%. The wool production from sheep on the other hand in 2014-15 was 4.81 billion tons.

CHART-VI: Species-wise Milk Contribution (%)

CHART-VII: Species-wise Wool Contribution (%)



2. NEED FOR DOUBLING THE SHEEP AND GOAT MEAT, MILK AND WOOL:

Our country has 26 registered breeds of Goat and 42 registered breeds of Sheep. Out of these, the high genetic merit (more meat / milk / wool yield per animal) indigenous registered breeds there exist only 12 breeds of Goat and around 14 breeds of Sheep. The 12 breeds of high genetic merit Goat have a population of 4.55 crore out of total population of 13.5 crore. Again, the 14 breeds of Sheep with high genetic worth have a population of 1.77 crore out of the total population 6.5 crore.

CHART-VIII: Total breed and non-descript population of Sheep and Goat

	Population as per 2012 census	Number of prominent indigenous breeds	Number of non-descript	% of non-descript
Sheep	65 million	17.7 million	25.78 million	38.68%
Goat	135 million	45.5 million	82.81 million	61.26%

CHART-IX: Comparative chart for prominent Indigenous Goat Breeds

Sl. No.	Name of Breed	Original State	Body weight		Dressing %	Carcass weight		Ave. daily Milk yield (in kg)	Breed wise population* (lakhs)
			Male adult	Female adult		Male adult	Female adult		
1	2	3	4	5	6	7	8	9	10
1	Sirohi	RJ	50.37	22.54	47.3	23.83	10.66	0.41	30.77
2	Marwari	RJ	33.18	25.85	56.3	18.68	14.55	0.53	71.83
3	Beetal	PJ	59.07	34.97	49.68	29.35	17.37	1.16	7.15
4	Jhakrana	RJ	57.8	44.48	47	27.17	20.91	3.18	14.46
5	Black Bengal	WB	32.37	20.38	55.8	18.06	11.37	NA	206.51
6	Jamnapari	UP	44.66	38.03	48.16	21.51	18.32	1.06	39.13
7	Barbari	UP	36.7	20.3	47.5	17.43	9.64	0.71	62.82
8	Mehsana	GJ	37	32	58	21.46	18.56	1.32	6.11
9	Zalwadi	GJ	38.84	32.99	47	18.25	15.51	2.02	5.32
10	Berari	MH	36	33	48	17.28	15.84	NA	1.92
11	Kutchi	GJ	46.96	39.91	47	22.07	18.76	1.84	4.43
12	Surti	GJ	29.5	32.03	46.6	13.75	14.93	2.50	4.06
Total population :									454.51

***as per Breed Survey Book 2013**

From the above chart it is clear that out of the total goat population of 13.5 crore, the population of 12 out of 26 registered breeds of Goat is merely 4.55 crore (as per Breed Survey Book, 2013) that is about 33.7%.

CHART-X: Comparative chart for prominent indigenous Sheep Breeds

Sl. No.	Main States	State-wise Breed Population* (in lakhs)				State-wise Non descript popln.*	Body Weight		Dressing %	Carcass weight		Wool production (in kg)
		Name of Breed	Pure	Graded	Cross Breed		Male	Female		Male	Female	
1	AP	Deccani	20.4	14.8	0.4	104.9	39	29	51.5	20.1	14.94	0.966
	KR		8.09	9.95	0.32	39.33						
	MH		8.74	0.29	0.54	16.06						
2	AP	Nellore	69.4	48.0	0.4	104.9	38	30	47	17.86	14.1	NA
3	TN	Nilgiri	0.02	NA	3.8	13.41	30	25	47	14.1	11.75	0.88
4	TN	Coimbatore	0.29	0.41	3.8	13.41	26	21	47	12.22	9.87	0.73
5	TN	Mecheri	12.12	2.18	3.8	13.41	35	24	54.7	19.15	13.13	NA
6	KR	Bellary	13.4	4.59	0.32	39.33	36	27	47	16.92	12.69	0.60
7	SK	Bonpala	0.02	0	0.01	9	58.9	51.2	48	28.27	24.58	1.00
	WB		2.30	0.01	0.20	3.19				0	0	
8	RJ	Chokla	2.52	1.05	0.39	24.12	41	29	47	19.27	13.63	NA
9	WB	Chottanagpuri	3.19	0.03	0.20	3.19	19.4	19.7	48.42	9	9.54	NA
	JH		1.98	0	0.08	3.64				0	0	
10	HP	Gaddi	1.74	0.09	3.01	1.97	31	26.59	47	14.57	12.50	1.15
11	RJ	Marwari	24.6	8.57	0.39	24.12	30.66	26.11	48	14.72	12.53	1.26
12	UP	Muzzaffargari	0.98	0.78	0.80	7.77	50.21	39.61	50.4	25.31	19.96	1.22
13	GJ	Patanwadi	4.73	2.90	0.26	1.45	33.34	26.53	47	15.67	12.47	1.06
14	RJ	Malpura	2.43	0.93	0.39	24.12	33	25.6	46.7	15.41	11.96	0.86
15	KR	Mandya	2.44	2.29			34.8	23.5	54	21.02	12.52	0.37
Total:			179.39	96.87	19.11	447.32						

***as per Breed Survey Book 2013**

From the above chart it is clear that out of the total Sheep population of 6.5 crore, the population of 14 out of 42 registered breeds of Sheep is merely 1.79 crore (as per Breed Survey Book, 2013) that is about 27.23%.

With increase in human population and changing trends in food habits, the demand for meat is increasing, thereby posing a great challenge to meet the requirement. Therefore, for the sake of improving the farmer's income by eventually having a more productive asset and even otherwise to fulfill the growing and future meat/milk demand potential, there is need to improve, rather than merely increase, the population of animals with low yields so that the dual problem of adequate meat, milk and wool is addressed even while increasing the farmer's income from per unit holding of the Goat/ Sheep and hence making it a more productive income generating asset.

Quite clearly therefore, the emphasis has to be given to improving the existing Sheep and Goat population with comparatively high genetic merit animals through genetic improvement of better breed from amongst registered indigenous breeds and non-descript animal population.

This can be achieved by selection of Rams (Sheep) and Bucks (Goat) of high genetic merit for breeding and also incentivizing the owners so that the select high genetic merit Rams and Bucks are not sold for slaughter but used for natural or AI service as required and possible. The current pattern of producing low genetic merit animals due to little selection of Rams/Ewes and Bucks/Does used for breeding, as well as much inter-mating among available animals as the sheep/goat rearers are mostly landless labourers and marginal farmers who also lack the resource of high genetic merit animals and even less knowledge and merit of scientific management of small ruminants.

The above facts also hold good for the more productivity per animal for milk and wool; the only difference being in selecting the breed having a higher productivity index with respect to milk, meat or wool respectively as per above charts.

Thus, to increase the meat, milk and wool production per se and per animal, breed improvement is the key which would at the same time help in increasing the farmers' income as part of the achievement of the vision of the Hon PM for doubling farmers' income.

3. STRATEGY FOR GENETIC IMPROVEMENT

3.1 Gap Analysis

The per capita consumption of meat in developed/industrialized countries is much higher compared with developing countries. Consumption of meat in the USA is 124 kg per capita per year (340 g/day). The global average meat consumption is 38 kg per year (104 g/day).

Countries whose population consumes the least amount of meat are located in Africa and Asia. The ten lowest-ranking countries in meat consumption consume 3–5 kg per capita per year. However, in case of India, it is much less in comparison to even African countries such as Ethiopia, where the average annual meat consumption per capita is estimated to be 8 kg/year as compared to India's per capita meat availability being only 4.94 kg per year. Thus it is apparent that there exists a huge gap of meat availability between India (4.94 kg per year) and the global average of 38 kg per year.

Analysed from the point of required nutrition, as per WHO standards, the daily requirement of protein is 63 gm per day. In average Indian diet conditions, 50.75 gm per day per person (approx.) for the vegetarian population, and about 55.25 gm per day per person (approx.) for the non-vegetarian population is available. Notwithstanding this, the average deficit of protein requirement is approximately 12.25 gm for vegetarian and 7.75 gm for non-vegetarian.

Moreover, by 2050, it is expected that the population in India would increase by 34% and to fulfill the dietary recommended levels of the livestock products by Indian Council for Medical Research (ICMR) for a population of 1.7 billion people, the livestock sector should produce 186.2 million tons of milk, 18.7 million tons of meat and 306 billion eggs per annum. This means that the current level of production, the milk, meat and eggs would have to increase by 1.5, 3 and

4.7 times respectively. Fulfilling the feed demand of this huge livestock from same resource base of land and water is going to be a huge challenge. Therefore, rather than increasing the number of animals, improving the genetics through breed improvement programme might be a better strategy to address the required demand for animal protein.

This becomes a greater challenge, as there exists a wide variation among Indian small ruminant breeds with respect to potential growth rates and mature weight which may be considered as a gap to fulfilling the meat demand as is clearly brought out in the charts above.

3.2 Action Plan

Based on the above Gap Analysis, a 2 step Action Plan **with focus on separate identified breeds for meat, milk and wool production** is proposed. The 2 steps are:

1. Genetic improvement of identified indigenous descript breeds of sheep and goat through selective breeding for better yielding breed stock for meat, milk and wool.
2. Genetic improvement of non-descript breeds of sheep by germplasm from existing improved descript indigenous breeds.

The twin goals of formulating the Breeding Plan for Genetic Improvement in Sheep & Goat would be to increase the income of the sheep/ goat rearing farmer / entrepreneur so as to achieve the Honourable Prime Minister's plan for doubling the farmer's income and the at the same time meet the nutritional needs of the country especially the requirement of protein.

Accordingly, a meeting of an Expert Committee for developing a Breeding Plan for Genetic Improvement of Sheep and Goats was held on 22nd August, 2016 under Chairmanship of Animal Husbandry Commissioner, GoI in Committee Room No 243 Krishi Bhavan, New Delhi. And on the basis of the recommendations of the Expert Committee, it is proposed to implement a project namely, **“Innovative Project for Genetic Improvement of Goat and Sheep” (GISG)**.

Also, a Stakeholder's meeting in presence of the representatives from expert institutes was convened on 31st January' 2017 at Krishi Bhawan, New Delhi under the chairmanship of Joint Secretary(ANLM), with following agenda :

- a. The feasibility and prospects of the project in terms of implementation at ground level and other details related with the project thereof.
- b. The States' approval on implementing this project in its entirety, keeping in mind the time frame of the project, the 40% share (90% for eligible State) that the State has to share.

The Sheep and Goat breeds would be selected on the basis of their Productivity Index and in identified states having the concerned descript high genetic merit population of goat / sheep. After identification of the States, districts within the States would be further selected on the basis of the density of the selected breeds. The genetic upgradation of the selected Sheep and Goat breed is envisaged to be done through natural service, while the upgradation of nondescript populations are envisaged to be done by Artificial Insemination in case of Sheep.

Presently the following breeds are proposed to be selected for breeding as per above 3 point strategy:

CHART-XI: Breeds proposed /selected for breeding

Species	HGM INDIGENOUS BREED		HGM EXOTIC BREED	
	Meat	Milk	Meat	Milk
Goat	Sirohi, Jhakrana, Beetal, Jamnapari and Kutchi	Mehsana, Surti, Jhakrana, and Beetal	-----	-----
	Meat	Wool	Meat	Wool
Sheep	Deccani, Mecheri, Chokla, Mandya and Gaddi	No Fine Wool Breed.		Rambouillet Merino (Available in HP)

3.2.1 Action plan for Sheep genetic improvement

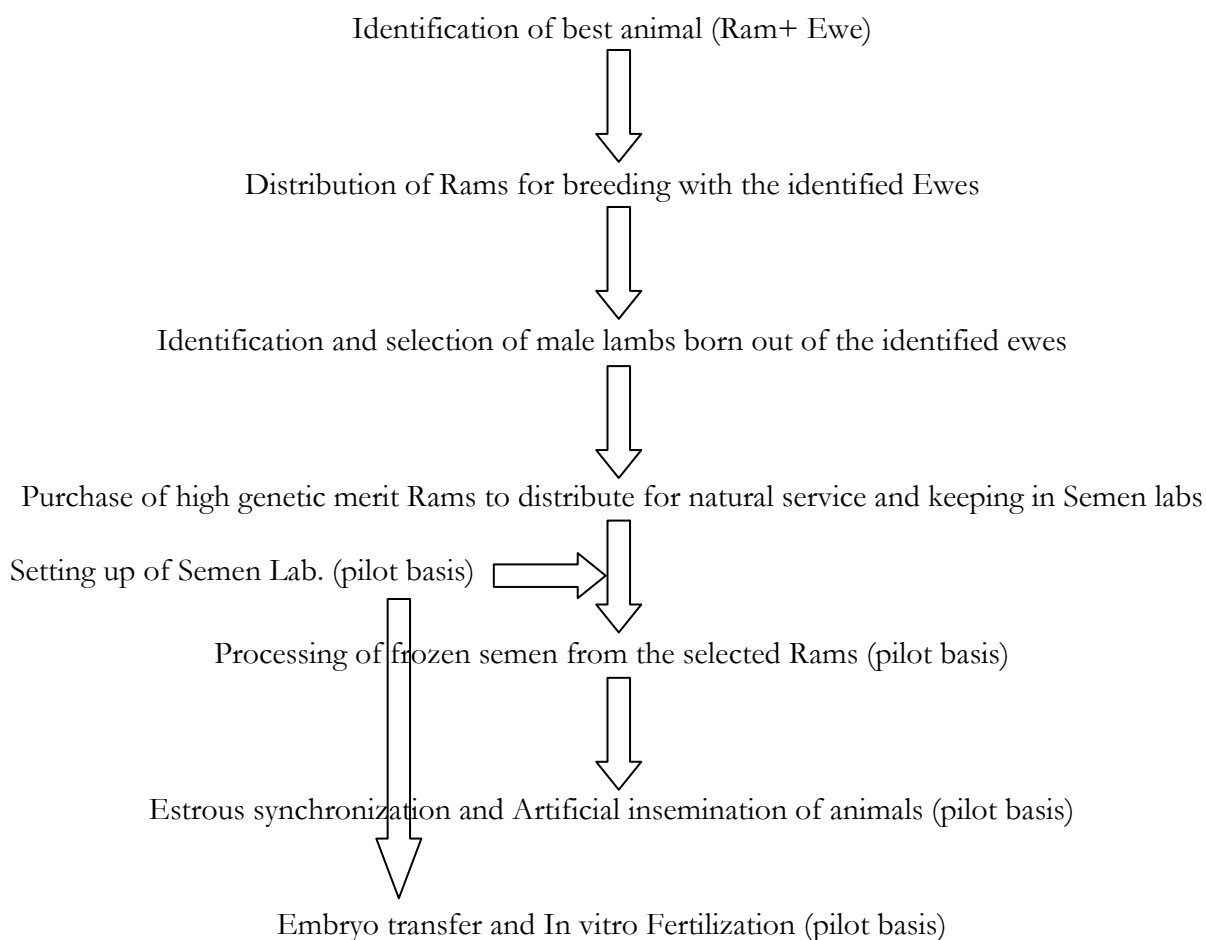
The action plan for sheep breed improvement would firstly involve identification of the herd population of high genetic merit. The broad steps and the process to do this would comprise:

- i. Identification of the best female animals with good phenotype from the concerned tract areas / villages / districts etc. by organizing an exhibition with prize money for Ewes. The number of ewes identified should be at least 3 times more than the number of rams required to cover the entire breedable female population of the selected districts (zone). The name and address of the owner of the ewes shall be taken and recorded to facilitate the skilled recorder to record the traits of the male lambs thus given birth by such ewes.
- ii. Simultaneously, the required number of rams with good vigor and phenotype will be identified and purchased by Government for breeding with the identified ewes. The number of such rams shall be at a ratio of 1 ram per 33 identified ewes.
- iii. Male lambs born out of the identified ewes and having satisfactory growth rate and preferably out of twinning lambs will be identified; records will be collected till 9 months of age at the farmer's house itself. Recorded data shall be sent to Central Sheep and Wool Research Institute (CSWRI), Avikanagar, to get the approval to purchase the Rams for breeding. Recording of traits will be done by persons from concerned State department only.
- iv. Rs. 5,000/- will be given to each owner of the identified male lambs for taking good care of the animals, with an agreement that they cannot sell off such animals for the whole nine months period.
- v. Following recommendations from the CSWRI, Avikanagar, the selected high genetic merit rams will be purchased @ Rs.30,000/- and distributed to progressive farmers in the ratio of Ram: Ewe=1:33. An agreement that they cannot sell off the Rams till 5 year and they have to allow to breed the nearby females of the villager by taking Rs. 50/- per service for looking after the Ram shall be made. Any additional amount over the above purchase price for the Ram shall have to be borne by the States, if required.
- vi. The ewes of Non descript Sheep will be covered by artificial insemination (AI) to be introduced on pilot basis. Costs of Machinery and equipment only for setting up frozen semen lab shall be given to any identified State Government farm/Institute Farm, etc as

proposed by the concerned State. Side by side, Embryo Transfer (ET) technique, In Vitro Fertilization (IVF) of animals to also be introduced and propagated on pilot basis in these farms.

vii. All the identified as well as selected animals will be insured and ear tagged.

3.2.1.1 The flow chart for the above activities is as follows:

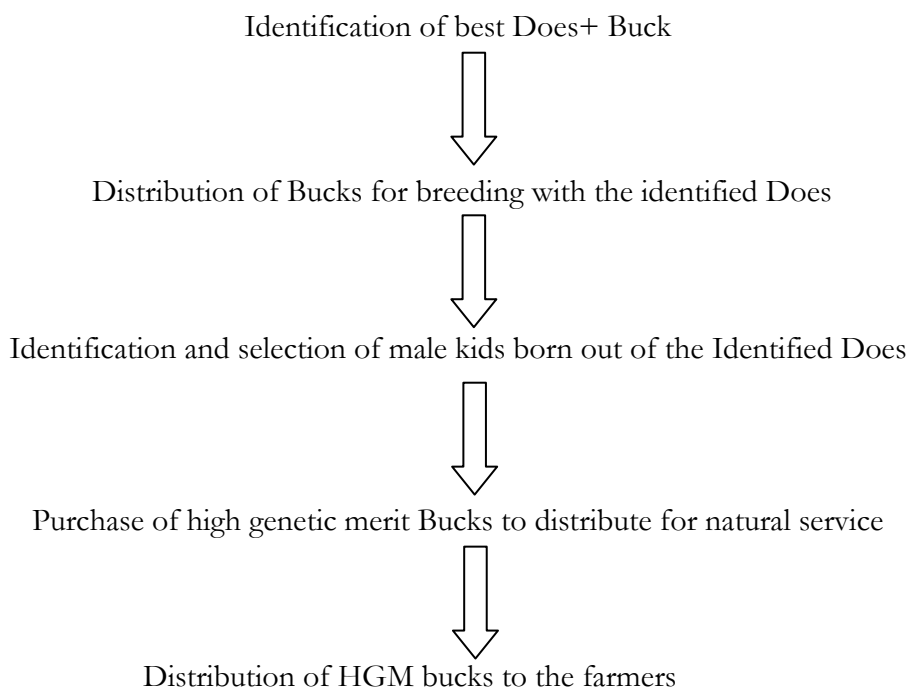


3.2.2 Action plan for Goat genetic improvement

- i. An exhibition with prize money for does with good phenotype will be conducted. The number of does identified should be at least 3 times more than the number of bucks required to cover the earmarked breedable female population of the selected districts (zone). The name and address of the owner of the does shall be taken and recorded to facilitate the skilled recorder to record the traits of the male kids thus given birth by such does.
- ii. Simultaneously, the required number of bucks with good vigor and phenotype will be identified and purchased by Government for breeding with the identified does. The number of such bucks shall be at a ratio of 1 buck per 30 identified does.
- iii. Male kids born out of the identified does and having satisfactory growth rate and preferably out of twinning kids will be identified; records will be collected till 9 months of age at the farmer's house itself. Recorded data shall be sent to Central Institute for Research on Goats (CIRG), Makhdum, to get the approval to purchase the bucks for breeding. Recording of traits will be done by entrusted persons @ Rs.5000/-per month.

- iv. Following recommendations from the CIRG, Makhdum, the selected high genetic merit bucks will be purchased @ Rs.30,000/- and distributed to progressive farmers in the ratio of Buck: Doe=1:30. An agreement that they cannot sell off the bucks till 5 year and they have to allow to breed the nearby females of the villager by taking Rs. 50/- per service for looking after the buck shall be made. Any additional amount over the above purchase price for the buck shall have to be borne by the States, if required.
- v. All the identified as well as selected animals will be insured and ear tagged.

3.2.2.1 The flow chart for the above activities is as follows:



3.3 Funding requirements

3.3.1 Sheep Genetic Improvement

Sl.No.	Component	Physical number	Fund requirement (Rs. in lakhs)
1.	Identification & Purchase of phenotypically Good looking Rams for breeding with prized ewes	692	207.60
2.	Prize money for Ewes	22785	683.00
3.	Rearing Cost for male lambs	7594	379.00
4.	Buy back of Rams	7594	2279.00
5.	Cost of Rams for Lab.	100	30.00
6.	Cost for Frozen semen lab., LN2 tanker, Animal shed, Isolation & Quarantine shed., Machinery & Equipments, Biosecured fencing, semen carrier Van, Oestrous syn. Kit, ET/ IVF accessories & any other necessary.	5 States	5000.00
7.	Monitoring & Evaluation	5 States for 5 year	250.00
Total			8828.60

GRAND TOTAL: 88.29 Crore

3.3.2 Goat Genetic Improvement

Sl.No.	Component	Physical number for meat purpose	Fund requirement for meat purpose (Rs. in lakhs)	Physical number for milk purpose	Fund requirement for milk purpose (Rs. in lakhs)
1.	Prize money for Does	51453	1543.14	23454	703.62
2.	Initial purchase of Bucks to breed with Prized Does	1716	514.80	782	234.6
3.	Rearing Cost for male Kids	17151	857.55	7818	391.00
4.	Buy back of Bucks	17151	5146.00	7818	2345.00
5.	Cost for Skill Recorder	1029	617.38	469	281.00
6.	Monitoring & Evaluation	5 States for 5 year	250.00	5 States for 5 year	100.00
Total			8928.87		4055.22

GRAND TOTAL : 129.84 Crore

3.3.3 The Project would be implemented to run for a period of five years with funding requirement of Rs.218.13 crores, out of which an amount of Rs.129.84 crores is for Goat and Rs.88.29 crores for Sheep Breed Improvement.

3.3.4 The funding pattern for GISG is 60:40 Central(90:10 for Himachal Pradesh) – State share, hence the required GOI share would be Rs.135 Crores, out of which Rs.77.91 crore is for Goat and Rs.57.09 crore is for Sheep. This funding would be met from the overall allocation to NLM for FY 17-18 and for subsequent years.

3.3.5 The project is envisaged to run for 5 years to achieve its goal. Though the commencement is slated to be on FY 2017-18, should all proposals from the concerned States be not received on FY 2017-18, period for acceptance of proposals may be extended only upto FY 2018-19.

3.3.6 Required National Steering Committee and Technical Monitoring Committee at the Central and State levels respectively, would be set up for projection sanctioned, monitoring and evaluation once GISG is approved.

3.3.7 Year wise expenditure of the total GoI share amount of Rs. 135 Crores is envisaged to be phased out in the following manner.

(Rs. In Crore)						
Species	GOI Share	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Goat	77.91	35.00	35.00	7.41	0.25	0.25
Sheep	57.09	25.00	25.00	6.59	0.25	0.25
TOTAL	135.00	60.00	60.00	14.00	0.50	0.50

4. EXPECTED OUTCOMES

4.1 Expected Outcomes: Sheep

i) The expected number of High Genetic Merit lambs to be born through one mating upto F2 level only is 2.46 lakh out of natural service, and 3.60 lakh out of artificial insemination (A.I.) through frozen semen. This is after considering mortality and other losses at 10% and 50% success in A.I.

ii) An estimated total of 1.59 lakh farmers will be benefitted upto F2 level.

4.2 Expected Outcomes: Goat

i) An anticipated total of 6.74 lakh of High Genetic Merit kids will born at F2 generation level through one mating of the selected/ identified animals.

ii) An estimated total of 2.33 lakh farmers will be benefitted upto F2 level.

5. CONCLUSION

With the ever increasing population and the changing trends in food habits in our country, it is inevitable that there shall be an increasing demand for more animal proteins/ meat to be made available. This scenario also holds good in the demand for both milk and wool. Thus, to increase the meat, milk and wool production, breed improvement even while increasing the farmers' income as part of the achievement of the vision of the Hon PM for doubling farmers' income breed improvement is the key to attain the desired goal. This would be achieved by upgrading of indigenous breeds within themselves and upgrading through exotic germplasm in case of non descript small ruminants. Accordingly, it is envisaged that with the implementation of the **Innovative Project for "Genetic Improvement of Goat and Sheep"** (GISG), there will be the triple advantage of higher population of high genetic merit animals coupled with increased farmer income per animal and at the same time addressing the meat, milk and wool demand of the country.

MEAT BREED IMPROVEMENT PROGRAMME FOR GOAT-SIROHI

Sl. No.	Breed selected for improvement	Areas (States)	Zones (Districts) considered.	Total female Goat of respective breed	Total No. of superior looking Does to be identified & monitored	Total prize money for identified Does in exhibition (Districtwise) @ Rs. 3000/- per Doe	Number of persons required for daily recording growth, milk yield, health etc. @ 50 Doe per person	Total cost for the persons entrusted for record collection. @ Rs.5000/- per month. For 1 year.	Male Kids having satisfactory growth rate and preferably out of twinning will be tentatively selected from identified does	Total cost for rearing the selected 1000 male kids with progressive farmers till the age of final selection i.e. 9 months (feed + vaccine + utensil + mineral mixture) @ Rs. 5000/- per male kid	Total cost of recommended 9 month old buck @ Rs. 30000/- per buck to be distributed to farmers at the ratio of 1:30	Total cost(Col 7+ Col 9+ Col 11+ Col12)
1	2	3	4	5	6	7	8	9	10	11	12	13
						Rs. in lakhs		Rs. in lakhs		Rs. in lakhs	Rs. in lakhs	Rs. in lakhs
1	Sirohi	Rajasthan	Ajmer	190364	3000	90	60	36	1000	50	300	476
			Jaipur	168764	3000	90	60	36	1000	50	300	476
			Nagaur	160533	3000	90	60	36	1000	50	300	476
			Sirohi	132732	3000	90	60	36	1000	50	300	476
Total				652393	12000	360	240	144	4000	200	1200	1904
Identified Buck to be purchased in exhibition = 400 No. @ Rs 30000/ Buck= Rs 120 Lakh												
Grand Total = Rs.1904 lakh + Rs.120 lakh + Rs.50 lakh for monitoring & evaluation :												2074

MEAT BREED IMPROVEMENT PROGRAMME FOR GOAT-JHAKRANA

Sl. No.	Breed selected for improvement	Areas (States)	Zones (Districts) considered.	Total female Goat of respective breed	Total No. of superior looking Does to be identified & monitored	Total prize money for identified Does in exhibition (Districtwise) @ Rs. 3000/- per Doe	Number of persons required for daily recording growth, milk yield, health etc. @ 50 Doe per person	Total cost for the persons entrusted for record collection.@ Rs.5000/- per month. For 1 year.	Male Kids having satisfactory growth rate and preferably out of twinning will be tentatively selected from identified does	Total cost for rearing the selected 1000 male kids with progressive farmers till the age of final selection i.e. 9 months (feed + vaccine + utensil + mineral mixture) @ Rs. 5000/- per male kid	Total cost of recommended 9 month old buck @ Rs. 30000/- per buck to be distributed to farmers at the ratio of 1:30	Total cost(Col 7+ Col 9+ Col 11+ Col12)
1	2	3	4	5	6	7	8	9	10	11	12	13
						Rs. in lakhs		Rs. in lakhs		Rs. in lakhs	Rs. in lakhs	Rs. in lakhs
1	Jhakrana	Rajasthan	Ganganagar	39299	3000	90	60	36	1000	50	300	476
			Jaipur	100974	3000	90	60	36	1000	50	300	476
			Churu	117903	3000	90	60	36	1000	50	300	476
			Sikar	257195	3000	90	60	36	1000	50	300	476
Total				515371	12000	360	240	144	4000	200	1200	1904
Identified Buck to be purchased in exhibition = 400 No. @ Rs 30000/ Buck= Rs 120 Lakh												
Grand Total = Rs.1904 lakh + Rs.120 lakh + Rs.50 lakh for monitoring & evaluation :												2074

MEAT BREED IMPROVEMENT PROGRAMME FOR GOAT-BEETAL

Sl. No.	Breed selected for improvement	Areas (States)	Zones (Districts) considered.	Total female Goat of respective breed	Total No. of superior looking Does to be identified & monitored	Total prize money for identified Does in exhibition (Districtwise) @ Rs. 3000/- per Doe	Number of persons required for daily recording growth, milk yield, health etc. @ 50 Doe per person	Total cost for the persons entrusted for record collection.@ Rs.5000/- per month. For 1 year.	Male Kids having satisfactory growth rate and preferably out of twinning will be tentatively selected from identified does	Total cost for rearing the selected 1000 male kids with progressive farmers till the age of final selection i.e. 9 months (feed + vaccine + utensil + mineral mixture) @ Rs. 5000/- per male kid	Total cost of recommended 9 month old buck @ Rs. 30000/- per buck to be distributed to farmers at the ratio of 1:30	Total cost(Col 7+ Col 9+ Col 11+ Col12)
1	2	3	4	5	6	7	8	9	10	11	12	13
						Rs. in lakhs		Rs. in lakhs		Rs. in lakhs	Rs. in lakhs	Rs. in lakhs
1	Beetal	Punjab	Bathinda	13853	1260	37.8	25	15	420	21	126	200
			Firozpur	14015	1275	38.25	26	15	425	21	128	202
			Muktsar	11351	1032	30.96	21	12	344	17	103	164
			Sangrur	8469	771	23.13	15	9	257	13	77	122
Total				47688	4338	130.14	87	52	1446	72.3	434	688
Identified Buck to be purchased in exhibition = 145 No. @ Rs 30000/ Buck= Rs 43.5 Lakh												
Grand Total = Rs.688 lakh + Rs.43.5 lakh + Rs.50 lakh for monitoring & evaluation :												781.5

MEAT BREED IMPROVEMENT PROGRAMME FOR GOAT-JAMNAPARI

Sl. No.	Breed selected for improvement	Areas (States)	Zones (Districts) considered.	Total female Goat of respective breed	Total No. of superior looking Does to be identified & monitored	Total prize money for identified Does in exhibition (Districtwise) @ Rs. 3000/- per Doe	Number of persons required for daily recording growth, milk yield, health etc. @ 50 Doe per person	Total cost for the persons entrusted for record collection.@ Rs.5000/- per month. For 1 year.	Male Kids having satisfactory growth rate and preferably out of twinning will be tentatively selected from identified does	Total cost for rearing the selected 1000 male kids with progressive farmers till the age of final selection i.e. 9 months (feed + vaccine + utensil + mineral mixture) @ Rs. 5000/- per male kid	Total cost of recommended 9 month old buck @ Rs. 30000/- per buck to be distributed to farmers at the ratio of 1:30	Total cost(Col 7+ Col 9+ Col 11+ Col12)
1	2	3	4	5	6	7	8	9	10	11	12	13
						Rs. in lakhs		Rs. in lakhs		Rs. in lakhs	Rs. in lakhs	Rs. in lakhs
1	Jamnapari	Uttar Pradesh	Allahabad	66014	3000	90	60	36	1000	50	300	476
			Hamirpur	47273	3000	90	60	36	1000	50	300	476
			Lalitpur	32825	2985	89.55	60	36	995	50	299	474
			Kanpur Nagar	23422	2130	63.9	43	26	710	36	213	338
Total				169534	11115	333	223	133.8	3705	185.25	1112	1764
Identified Buck to be purchased in exhibition = 371 No. @ Rs 30000/ Buck= Rs 111.3 Lakh												
Grand Total = Rs.1764 lakh + Rs.111.3 lakh + Rs.50 lakh for monitoring & evaluation :												1925.3

MEAT BREED IMPROVEMENT PROGRAMME FOR GOAT-KUTCHI

Sl. No.	Breed selected for improvement	Areas (States)	Zones (Districts) considered.	Total female Goat of respective breed	Total No. of superior looking Does to be identified & monitored	Total prize money for identified Does in exhibition (Districtwise) @ Rs. 3000/- per Doe	Number of persons required for daily recording growth, milk yield, health etc. @ 50 Doe per person	Total cost for the persons entrusted for record collection.@ Rs.5000/- per month. For 1 year.	Male Kids having satisfactory growth rate and preferably out of twinning will be tentatively selected from identified does	Total cost for rearing the selected 1000 male kids with progressive farmers till the age of final selection i.e. 9 months (feed + vaccine + utensil + mineral mixture) @ Rs. 5000/- per male kid	Total cost of recommended 9 month old buck @ Rs. 30000/- per buck to be distributed to farmers at the ratio of 1:30	Total cost(Col 7+ Col 9+ Col 11+ Col12)
1	2	3	4	5	6	7	8	9	10	11	12	13
						Rs. in lakhs		Rs. in lakhs		Rs. in lakhs	Rs. in lakhs	Rs. in lakhs
1	Kutchi	Gujarat	Kutchch	280714	12000	360	240	144	4000	200	1200	1904
Total				280714	12000	360	240	144	4000	200	1200	1904
Identified Buck to be purchased in exhibition = 400 No. @ Rs 30000/ Buck= Rs 120 Lakh												
Grand Total = Rs.1904 lakh + Rs.120 lakh + Rs.50 lakh for monitoring & evaluation :												2074

MILK BREED IMPROVEMENT PROGRAMME FOR GOAT-MEHSANA

Sl. No.	Breed selected for improvement	Areas (States)	Zones (Districts) considered.	Total female Goat of respective breed	Total No. of superior looking Does to be identified & monitored	Total prize money for identified Does in exhibition (Districtwise) @ Rs. 3000/- per Doe	Number of persons required for daily recording growth, milk yield, health etc. @ 50 Doe per person	Total cost for the persons entrusted for record collection.@ Rs.5000/- per month. For 1 year.	Male Kids having satisfactory growth rate and preferably out of twinning will be tentatively selected from identified does	Total cost for rearing the selected 1000 male kids with progressive farmers till the age of final selection i.e. 9 months (feed + vaccine + utensil + mineral mixture) @ Rs. 5000/- per male kid	Total cost of recommended 9 month old buck @ Rs. 30000/- per buck to be distributed to farmers at the ratio of 1:30	Total cost(Col 7+ Col 9+ Col 11+ Col12)
1	2	3	4	5	6	7	8	9	10	11	12	13
						Rs. in lakhs		Rs. in lakhs		Rs. in lakhs	Rs. in lakhs	Rs. in lakhs
1	Mehsana	Gujarat	Banas Kantha	155306	3000	90	60	36	1000	50	300	476
			Mahesana	66626	3000	90	60	36	1000	50	300	476
			Ahmedabad	39510	3000	90	60	36	1000	50	300	476
			Sabar Kantha	39926	3000	90	60	36	1000	50	300	476
Total				301368	12000	360	240	144	4000	200	1200	1904
	Identified Buck to be purchased in exhibition = 400 No. @ Rs 30000/ Buck= Rs 120 Lakh											
	Grand Total = Rs.1904 lakh + Rs.120 lakh + Rs.50 lakh for monitoring & evaluation :											2074

MILK BREED IMPROVEMENT PROGRAMME FOR GOAT-SURTI

Sl. No.	Breed selected for improvement	Areas (States)	Zones (Districts) considered.	Total female Goat of respective breed	Total No. of superior looking Does to be identified & monitored	Total prize money for identified Does in exhibition (Districtwise) @ Rs. 3000/- per Doe	Number of persons required for daily recording growth, milk yield, health etc. @ 50 Doe per person	Total cost for the persons entrusted for record collection.@ Rs.5000/- per month. For 1 year.	Male Kids having satisfactory growth rate and preferably out of twinning will be tentatively selected from identified does	Total cost for rearing the selected 1000 male kids with progressive farmers till the age of final selection i.e. 9 months (feed + vaccine + utensil + mineral mixture) @ Rs. 5000/- per male kid	Total cost of recommended 9 month old buck @ Rs. 30000/- per buck to be distributed to farmers at the ratio of 1:30	Total cost(Col 7+ Col 9+ Col 11+ Col12)
1	2	3	4	5	6	7	8	9	10	11	12	13
						Rs. in lakhs		Rs. in lakhs		Rs. in lakhs	Rs. in lakhs	Rs. in lakhs
1	Surti	Gujarat	Surat	56582	5145	154.35	103	62	1715	86	515	816
			Vadodara	24820	2256	67.68	45	27	752	38	226	358
			Kheda	24242	2205	66.15	44	26	735	37	221	350
			Bharuch	20338	1848	55.44	37	22	616	31	185	293
Total				125982	11454	343.62	229	137	3818	191	1145	1817
	Identified Buck to be purchased in exhibition = 382 No. @ Rs 30000/ Buck= Rs 114.6 Lakh											
Grand Total = Rs.1817 lakh + Rs.114.6 lakh + Rs.50 lakh for monitoring & evaluation :												1931.6

MEAT BREED IMPROVEMENT PROGRAMME FOR SHEEP-DECCANI (NATURAL SERVICE)

Sl. No.	Breed selected for improvement	Areas (States)	Zones (Districts) considered.	Total female Sheep of respective breed	Total HGM Ram required to be selected	Total No. of superior looking Ewes to be identified & monitored	Total prize money for identified Ewes in exhibition (District wise) @ Rs. 3000/- per Ewe (Rs. in lakh)	Initial No. of superior looking Rams to be identified in exhibition to be used for breeding identified Ewes	Total cost for purchase of identified Rams in exhibition (Districtwise) @ Rs. 30000/- per Ram (Rs. in lakh)	Number of persons required for daily recording growth, milk yield, health etc. @ 50 Ewe per person	Male Lambs having satisfactory growth rate and preferably out of twinning will be tentatively selected from identified ewes	Total cost for rearing the selected male lambs with progressive farmers till the age of final selection i.e. 9 months (feed + vaccine + utensil + mineral mixture) @ Rs. 5000/- per male lamb (Rs. in lakh)	Total cost of recommended 9 month old ram @ Rs. 30000/- per ram to be distributed to farmers at the ratio of 1:33 (Rs. in lakh)	Total cost (Col 8+ Col10 + Col13+ Col14) (Rs. in lakh)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Deccani	Telangana	Mehbubnagar	532632	1614	4842	145	147	44	97	1614	81	484	754
			Karimnagar	316031	958	2873	86	87	26	57	958	48	287	447
			Medak	244795	742	2225	67	67	20	45	742	37	223	347
			Nizamabad	176793	536	1607	48	49	15	32	536	27	161	250
Total				1270251	3849	11548	346	350	105	231	3849	192	1155	1799

MEAT BREED IMPROVEMENT PROGRAMME FOR SHEEP-DECCANI (ARTIFICIAL INSEMINATION)

Population selected for improvement	Areas (States)	No. of Institute/State Farm, etc to be selected for responsibility of A.I., etc. by State.	No. of Female expected to cover by AI (5 Yr)	Total ram required for AI lab.	Cost of Rams @ Rs 30000/- per ram for A.I. lab (Rs. in Lakhs)	Cost for Liquid semen lab. or Frozen semen lab., LN2 tanker, Animal shed, Isolation & Quarantine shed., Machinery & Equipments, Biosecured fencing, semen carrier Van, Oestrous syn. Kit, ET/ IVF accessories, etc. (Rs. in lakhs)	
Non descript	Telangana	1	720000	20	6	1000	1006
Monitoring and Evaluation =							50
TOTAL COST FOR TELANGANA =							2855

MEAT BREED IMPROVEMENT PROGRAMME FOR SHEEP-MECHERI (NATURAL SERVICE)

Sl. No.	Breed selected for improvement	Areas (States)	Zones (Districts) considered.	Total female Sheep of respective breed	Total HGM Ram required to be selected	Total No. of superior looking Ewes to be identified & monitored	Total prize money for identified Ewes in exhibition (District wise) @ Rs. 3000/- per Ewe (Rs. in lakh)	Initial No. of superior looking Rams to be identified in exhibition to be used for breeding identified Ewes	Total cost for purchase of identified Rams in exhibition (Districtwise) @ Rs. 30000/- per Ram (Rs. in lakh)	Number of persons required for daily recording growth, milk yield, health etc. @ 50 Ewe per person	Male Lambs having satisfactory growth rate and preferably out of twinning will be tentatively selected from identified ewes	Total cost for rearing the selected male lambs with progressive farmers till the age of final selection i.e. 9 months (feed + vaccine + utensil + mineral mixture) @ Rs. 5000/- per male lamb (Rs. in lakh)	Total cost of recommended 9 month old ram @ Rs. 30000/- per ram to be distributed to farmers at the ratio of 1:33 (Rs. in lakh)	Total cost (Col 8+ Col10 + Col13+ Col14) (Rs. in lakh)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Mecheri	Tamil Nadu	Tiruppur	297451	901	2704	81	82	25	54	901	45	270	421
			Salem	183984	558	1673	50	51	15	33	558	28	167	261
			Karur	137752	417	1252	38	38	11	25	417	21	125	195
			Dharmapuri	58693	178	534	16	16	5	11	178	9	53	83
Total				677880	2054	6163	185	187	56	123	2054	103	616	960

MEAT BREED IMPROVEMENT PROGRAMME FOR SHEEP-MECHERI (ARTIFICIAL INSEMINATION)

Population selected for improvement	Areas (States)	No. of Institute/State Farm, etc to be selected for responsibility of A.I., etc. by State.	No. of Female expected to cover by AI (5 Yr)	Total ram required for AI lab.	Cost of Rams @ Rs 30000/- per ram for A.I. lab (Rs. in lakhs)	Cost for Liquid semen lab. or Frozen semen lab., LN2 tanker, Animal shed, Isolation & Quarantine shed., Machinery & Equipments, Biosecured fencing, semen carrier Van, Oestrous syn. Kit, ET/ IVF accessories, etc. (Rs. in lakhs)
Non descript	Tamil Nadu	1	720000	20	6	1000
Monitoring and Evaluation =						50
TOTAL COST FOR TAMIL NADU =						2016

MEAT BREED IMPROVEMENT PROGRAMME FOR SHEEP-CHOKLA (NATURAL SERVICE)

Sl. No.	Breed selected for improvement	Areas (States)	Zones (Districts) considered.	Total female Sheep of respective breed	Total HGM Ram required to be selected	Total No. of superior looking Ewes to be identified & monitored	Total prize money for identified Ewes in exhibition (Districtwise) @ Rs. 3000/- per Ewe (Rs. in lakh)	Initial No. of superior looking Rams to be identified in exhibition to be used for breeding identified Ewes	Total cost for purchase of identified Rams in exhibition (Districtwise) @ Rs. 30000/- per Ram (Rs. in lakh)	Number of persons required for daily recording growth, milk yield, health etc. @ 50 Ewe per person	Male Lambs having satisfactory growth rate and preferably out of twinning will be tentatively selected from identified ewes	Total cost for rearing the selected male lambs with progressive farmers till the age of final selection i.e. 9 months @ Rs. 5000/- per male lamb (Rs. in lakh)	Total cost of recommended 9 month old ram @ Rs. 30000/- per ram to be distributed to farmers at the ratio of 1:33 (Rs. in lakh)	Total cost (Col 8+ Col10 + Col13 + Col14) (Rs. in lakh)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Chokla	Rajasthan	Churu	49227	149	448	13	14	4	9	149	7	45	70
			Sikar	48227	146	438	13	13	4	9	146	7	44	68
			Jhunjhunun	44081	134	401	12	12	4	8	134	7	40	62
			Nagaur	38709	117	352	11	11	3	7	117	6	35	55
Total				180244	546	1639	49	50	15	33	546	27	164	255

MEAT BREED IMPROVEMENT PROGRAMME FOR SHEEP-CHOKLA (ARTIFICIAL INSEMINATION)

Population selected for improvement	Areas (States)	No. of Institute/State Farm, etc to be selected for responsibility of A.I., etc. by State.	No. of Female expected to cover by AI (5 Yr)	Total ram required for AI lab.	Cost of Rams @ Rs 30000/- per ram for A.I. lab	Cost for Liquid semen lab. or Frozen semen lab., LN2 tanker, Animal shed, Isolation & Quarantine shed., Machinery & Equipments, Biosecured fencing, semen carrier Van, Oestrous syn. Kit, ET/ IVF accessories, etc. (Rs. in lakhs)	
Non descript	Rajasthan	1	720000	20	6	1000	1006
						Monitoring and Evaluation =	50
						TOTAL COST FOR RAJASTHAN =	1311

MEAT BREED IMPROVEMENT PROGRAMME FOR SHEEP-MANDYA (NATURAL SERVICE)

Sl. No.	Breed selected for improvement	Areas (States)	Zones (Districts) considered.	Total female Sheep of respective breed	Total HGM Ram required to be selected	Total No. of superior looking Ewes to be identified & monitored	Total prize money for identified Ewes in exhibition (Districtwise) @ Rs. 3000/- per Ewe (Rs. in lakh)	Initial No. of superior looking Rams to be identified in exhibition to be used for breeding identified Ewes	Total cost for purchase of identified Rams in exhibition (Districtwise) @ Rs. 30000/- per Ram (Rs. in lakh)	Number of persons required for daily recording growth, milk yield, health etc. @ 50 Ewe per person	Male Lambs having satisfactory growth rate and preferably out of twinning will be tentatively selected from identified ewes	Total cost for rearing the selected male lambs with progressive farmers till the age of final selection i.e. 9 months (feed + vaccine + utensil + mineral mixture) @ Rs. 5000/- per male lamb (Rs. in lakh)	Total cost of recommended 9 month old ram @ Rs. 30000/- per ram to be distributed to farmers at the ratio of 1:33 (Rs. in lakh)	Total cost (Col 8+ Col10 + Col13+ Col14) (Rs. in lakh)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Mandya	Karnataka	Mandya	72052	218	655	20	20	6	13	218	11	66	102
			Mysore	49674	151	452	14	14	4	9	151	8	45	70
			Ramanagara	31904	97	290	9	9	3	6	97	5	29	45
Total				153630	466	1397	42	42	13	28	466	23	140	218

MEAT BREED IMPROVEMENT PROGRAMME FOR SHEEP-MANDYA (ARTIFICIAL INSEMINATION)

	Population selected for improvement	Areas (States)	No. of Institute/State Farm, etc to be selected for responsibility of A.I., etc. by State.	No. of Female expected to cover by AI (5 Yr)	Total ram required for AI lab.	Cost of Rams @ Rs 30000/- per ram for A.I. lab (Rs. in lakhs)	Cost for Liquid semen lab. or Frozen semen lab., LN2 tanker, Animal shed, Isolation & Quarantine shed., Machinery & Equipments, Biosecured fencing, semen carrier Van, Oestrous syn. Kit, ET/ IVF accessories, etc. (Rs. in lakhs)	
	Non descript	Karnataka	1	720000	20	6	1000	1006
Monitoring and Evaluation =								50
TOTAL COST FOR KARNATAKA =								1274

MEAT BREED IMPROVEMENT PROGRAMME FOR SHEEP-GADDI (NATURAL SERVICE)

Sl. No.	Breed selected for improvement	Areas (States)	Zones (Districts) considered.	Total female Sheep of respective breed	Total HGM Ram required to be selected	Total No. of superior looking Ewes to be identified & monitored	Total prize money for identified Ewes in exhibition (Districtwise) @ Rs. 3000/- per Ewe (Rs. in lakh)	Initial No. of superior looking Rams to be identified in exhibition to be used for breeding identified Ewes	Total cost for purchase of identified Rams in exhibition (Districtwise) @ Rs. 30000/- per Ram (Rs. in lakh)	Number of persons required for daily recording growth, milk yield, health etc. @ 50 Ewe per person	Male Lambs having satisfactory growth rate and preferably out of twinning will be tentatively selected from identified ewes	Total cost for rearing the selected male lambs with progressive farmers till the age of final selection i.e. 9 months (feed + vaccine + utensil + mineral mixture) @ Rs. 5000/- per male lamb (Rs. in lakh)	Total cost of recommended 9 month old ram @ Rs. 30000/- per ram to be distributed to farmers at the ratio of 1:33 (Rs. in lakh)	Total cost (Col 8+ Col10 + Col13+ Col14) (Rs. in lakh)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Gaddi	Himachal Pradesh	Chamba	103025	312	937	28	28	9	19	312	16	94	146
			Mandi	121118	367	1101	33	33	10	22	367	18	110	172
Total				224143	679	2038	61	62	19	41	679	34	204	317

MEAT BREED IMPROVEMENT PROGRAMME FOR SHEEP-GADDI (ARTIFICIAL INSEMINATION)

Population selected for improvement	Areas (States)	No. of Institute/State Farm, etc to be selected for responsibility of A.I., etc. by State.	No. of Female expected to cover by AI (5 Yr)	Total ram required for AI lab.	Cost of Rams @ Rs 30000/- per ram for A.I. lab (Rs. in lakhs)	Cost for Liquid semen lab. or Frozen semen lab., LN2 tanker, Animal shed, Isolation & Quarantine shed., Machinery & Equipments, Biosecured fencing, semen carrier Van, Oestrous syn. Kit, ET/ IVF accessories, etc. (Rs. in lakhs)	
Non descript	Himachal Pradesh	1	720000	20	6	1000	1006
						Monitoring and Evaluation =	50
						TOTAL COST FOR HIMACHAL PRADESH =	1373