

No. 1393 I P R K V Y

Dated:

24-11

From

Director General,
Animal Husbandry & Dairying,
Sector-2, Panchkula

To

Director of Agriculture,
Krishi Bhawan, Sec-21,
Panchkula, Haryana.

Subject: Final Physical and Financial Progress report scheme wise under
RKVY.

Memo:

In reference to letter No. 490-496 TA-11/RKVY dated 18.4.11 on the subject cited above, please find enclosed herewith the final Physical and Financial Progress report scheme wise on the prescribed proforma.

This is for your kind information and necessary action, please.

Encl: As above

Jc

Signature

for Director General,
Animal Husbandry & Dairying,
Sector-2, Panchkula.

District wise Monthly Progress Report of RKVY of department of Animal Husbandry & Dairying..

For the year 2010-11

Name of project- Reproductive Health Management to optimize fertility							
S.No.	District	Name of project	Unit	Target		Achievement	
				Phy.	Fin.	Phy.	Fin.
			Camps mno.				
1.	Panchkula	As above		100		108	31.91
2.	Yamunanagar			450		481	49.40
3.	Ambala			450		423	63.75
4.	Kurukeshtra			750		710	63.44
5.	Kamal			800		827	82.26
6.	Panipat			350		358	61.71
7.	Sonepat			450		446	62.30
8.	Kaithal			750		737	64.73
9.	Jind			500		423	73.33
10.	Jhajjar			1000		1459	56.82
11.	Bhiwani			1000		809	99.13
12.	Hisar			1000		1014	81.93
13.	Rohtak			800		1071	61.07
14.	Faridabad			350		321	77.10
15.	Gurgaon			300		297	46.53
16.	Rewari			200		117	49.40
17.	Namaul			500		728	52.26
18.	Mewat			300		232	50.65
19.	Fatehabad			800		883	54.31
20.	Sirsa			1000		571	99.12
21.	Palwal			150		276	-
	Total			12000		12789	1281.15

Beneficiaries details							(No. in lac)
Project Name	Small	Marginal	SC	ST	Woman	Others/SHG	Total No. of Beneficiaries
			1.87	-	1.15	7.30	10.32

District wise Monthly Progress Report of RKVY of department of Animal Husbandry & Dairying..

For the year 2010-11

Name of project- 'In Si-u', Preservation of Top Quality Murrah Buffaloes.							
S.No.	District	Name of project	Unit	Target		Achievement	
				As above	In No.	Phy.	'Fin.
1.	Panchkula			20		5	25000
2.	Yamunanagar			40		41	168000
3.	Ambala			10		0	0
4.	Kurukeshtra			30		18	205000
5.	Kamal			200		152	1480000
6.	Panipat			200		154	1195000
7.	Sonipat			500		363	2650000
8.	Kaithal			200		120	935000
9.	Jind			2000		1771	11370000
10.	Jhajjar			1500		1343	9800000
11.	Bhiwani			2200		2084	12845000
12.	Hisar			2000		2140	13700000
13.	Rohtak			1500		1223	7254000
14.	Palwal			50		0	0
15.	Faridabad			150		57	329000
16.	Gurgaon			50		0	0
17.	Rewari			250		0	0
18.	Namaul			500		480	3470000
19.	Mewat			100		0	0
20.	Fatehabad			200		292	1830000
21.	Sirsa			300		310	1946000
	Total			12000		10553	69202000

Beneficiaries details

Project Name	Small	Marginal	SC	ST	Woman	Others/SHG	Total No. of Beneficiaries
			23	-	-	10530	10553

District wise Monthly Progress Report of RKVY of department of Animal Husbandry & Dairying..

For the year 2010-11

(~in lac)

Name of project- . Construction of Hi-tech Dairy Sheds.							
S.No.	District	Name of oroject	Unit	Target		Achievement	
				In Nos.	Phy.	Fin.	Phy.
		As above					
1.	Panchkula			10		0	0
2.	Yamunanazar			25		22	3250000
3.	Ambala			25		12	1800000
4.	Kurukeshtra			25		17	1950000
5.	Kamal			25		15	2250000
6.	Panipat			20		9	1350000
7.	Sonipat			20		10	1500000
8.	Kaithal			20		8	1200000
9.	Jind			15		13	1950000
10.	Jhaiiar			15		12	1800000
11.	Bhiwani			15		1	150000
12.	Hisar			15		9	1350000
13.	Rohtak			15		2	300000
14.	Palwal			10		0	0
15.	Faridabad			10		0	0
16.	Gurgaon			10		0	0
17.	Rewari			10		5	750000
18.	Namaul			10		3	450000
19.	Mewat			10		0	0
20.	Fatehabad			10		7	900000
21	Sirsa			15		14	2100000
	Total			330		159	23050000

Beneficiaries details

Project Name	Small	Marginal	SC	ST	Woman	Others/SHG	Total No. of Beneficiaries
			9	-	31	119	159
Beneficiaries in no.			45		155	595	795

District wise Monthly Progress Report of RKVY of department of Animal Husbandry & Dairying..

For the Year 2010-11

(~in lac)

Name of project- Strengthening of the Seed Farm S.C.B.P. Sector-III, Hisar							
S.No.	District	Name of project	Unit Fodder Kits	Target		Achievement	
				Phy.	Fin.	Phy.	Fin.
		As above	In no, Of Maize Jawar Lobia Gawar Bajra				
1.	Panchkula			550			
2.	Yamunanagar			1000			
3.	Ambala			500			
4.	Kurukeshtra			1000			
5.	Kamal			1500			
6.	Panipat			1000			
7.	Sonipat			1500			
8.	Kaithal			1500			
9.	Jind			2500			
10.	Jhajjar			2500			
11.	Bhiwani			3000			
12.	Hisar			3000		1	93.00
13.	Rohtak			2500			
14.	Palwal			1000			
15.	Faridabad			500			
16.	Gurgaon			500			
17.	Rewari			1000			
18.	Namaul			1000			
19.	Mewat			500			
20.	Fatehabad			1500			
21	Sirsa		3000				
	Total		31000		1	93.00	

beneficiaries details

Project Name	Small	Mm	tnal	SC	ST	Woman	Others/SHG	Total No. of Beneficiaries
				5360	-	-	27240	32600

District wise Monthly Progress Report of RKVY of department of Animal Husbandry & Dairying..

For the year 2010-11

(~in lac)

Name of project :- Promotion of modern technologies in the Hi- tech dairy units.							
S.No.	District	Name of project	Unit	Target		Achievement	
				Phy.	Fin.	Phy.	Fin.
		As above	Dairy units (In no.)				
1.	Panchkula			0		0	0
2.	Yamunanagar			40		40	1750000
3.	Ambala			15		12	359779
4.	Kurukeshtra			30		27	772901
5.	Kamal			60		60	1707919
6.	Panipat			30		23	815000
7.	Sonipat			0		0	0
8.	Kaithal			10		9	208112
9.	Jind			25		10	831707
10.	Jhajjar			5		5	750000
11.	Bhiwani			15		16	1779689
12.	Hisar			0		0	0
13.	Rohtak			2		2	53736
14.	Palwal			0		0	0
15.	Faridabad			0		0	0
16.	Gurgaon			0		0	0
17.	Rewari			0		0	0
18.	Namaul			0		0	0
19.	Mewat			0		0	0
20.	Fatehabad			1		1	32800
21	Sirsa			15		15	485490
	Total			250		220	9547133

Beneficiaries details

Project Name	Small	Marginal	SC	ST	Woman	Others/SHG	Total No. of Beneficiaries
			5	-	-	215	220
Beneficiary	In no.		25			1075	1100

PROPOSALS

FOR

FUNDING

UNDERRKVY

YEAR 2010-11

(Rs.4820 LAC)

Department of Animal Husbandry & Dairying,
Haryana, Panchkula

Proposals for funding under Rashtriya Krishi Vikas Vojna for the year 2010-11

Introduction:

In spite of being one of the smallest (1.3 % of total area) states of India, Haryana has a prominent place in the dairying map of the country. The animal husbandry activities in the state play a pivotal role in the rural economy through a variety of contributions in the form of income generation, draft power, socio-economic upliftment, employment avenues and better nutrition to human population through livestock products like milk, eggs & meat etc. Haryana possesses 2.5% of the bovine population of the country but produces more than 5.0% of the nation's total milk production. Similarly, per capita milk availability of the state is quite high at 665 gm against the national average of 236 gm. Haryana is the home of world famous 'Murrah' buffaloes popularly called the '**Black gold of India**' and the all purpose '**Hariana**' cow. The state has since long been the prime source of Murrah germplasm for other states and abroad for upgradation of their low producing, nondescript buffaloes. The demand for superior germ plasm of Murrah is ever increasing in rest of India and other countries. Certainly, the state is proud of its position, achievements, livestock wealth and the significant contributions of this sector to the state economy, but there is no reason to be complacent since a lot remains to be achieved.

Our per animal productivity stands nowhere when compared to the international figures. There is tremendous scope for improvement in this sector. Its vast potential remains largely unexploited. The importance of this sector further increases particularly when there is a saturation level in the crop husbandry and the availability of land is shrinking to provide housing and other facilities to the burgeoning human population. **We need to strive hard continuously in order to exploit the full potential of our livestock vis-a-vis realize the long cherished dream of making Haryana 'the Denmark of India' and bring smile and prosperity in the lives of the farming community.**

The contribution of livestock sector in rural economy is well recognized. This sector has a significant contribution of >4 % to the national GDP and almost 114th of the total contribution of the agricultural sector comes from this sector. However, funding to livestock sector during the successive Five-Year-Plans have been miserably low ranging between 0.4 and 0.8%. The funding in the state had been no better. Despite the limited resources and paucity of funds, the department has been striving

hard to maintain the tempo of development to enhance the productivity of livestock by providing the essential health care and breeding services to the precious livestock wealth of the state. The state has a network of 2789 veterinary institutions providing prophylaxis, treatment, reproductive health care, breeding and advisory services to the livestock owners.

On the issue of contribution vis-a-vis investment in the sector, some of the important recommendations made by the Advisory Committee on Animal Husbandry & Dairying, Planning Commission, Govt. of India are as under:-

1. In Haryana, the livestock sector is contributing to the tune of 36.1 percent of Agriculture GDP (at current prices). It is evident that the Haryana has been performing well in these sectors. The state has very good potential for further growth over the next 10-15 years, probably in the range of 6-7%.
2. Planning commission observed that top quality Murrah bulls are being supplied through out India and state has a leading frozen semen production centre which requires to be further strengthened.
3. Haryana is the home tract for Murrah buffaloes. Large number of superior animals are purchased from the state by livestock farmers of other states. The state has potential to meet all India needs. HLDB needs to be fully supported financially. NPCBB is being implemented in the state from 2000-01 and HLDB is the implementing agency. The scheme needs to be continued with higher allocation. State is not having Mobile units for A.I. services. Mobile units (vans, two wheelers) are required to reach the farmers' doorstep in time.
4. Health and Extension : Block level hospital are to be strengthened with diagnostic labs. Polyclinics need to be set up at districts and they need to be equipped with latest diagnostic tools. Sufficient budgetary provisions are required for purchase of medicines. Veterinary officers exclusively for extension work are required with sufficient budgetary allocation for carrying out extension activities.
5. In view of the high potential for growth of the sector in the state, **Planning Commission has suggested that financial allocation may be enhanced to all areas in this sector in the state of Haryana. Higher allocation under RKVY is also suggested.** State is also advised to adopt cryoscope assisted A.I. for improved conception rate (by 20%), complete feed block, by- pass protein technology for 10-15% improvement in productivity, field based diagnostic kits and vaccines; Value addition and improving shelf life of milk (low cholesterol ghee, Lassi, Mozarella cheese, Kesar Kulfi, flavored milk etc.) and poultry products (chicken chunkalma, chicken patties)etc.

Keeping aforesaid in view and to provide the best quality veterinary &

animal husbandry services through better infrastructure and extension services, the following components intended to directly benefit the farmers of the state, are proposed for funding under the Rashtriya Krishi Vikas Yojana for the year 2010-11:

(a). On going SLSC approved schemes :-

1. Reproductive health management to optimize fertility
2. 'In Situ', Preservation of Top Quality Murrah Buffaloes.
3. Construction of Modern Animal Sheds for establishment of Hi-tech Dairy Units.
4. Strengthening of the Seed Farm S.C.B.P. Sector-III, Hisar for Quality Seed production of improved varieties of fodder crops .
5. Out sourcing of A.I. services to renowned NGOs.
6. Awards to leading animal breeders and study tours.
7. Fast Genetic Improvement of cattle and buffaloes by using 4th generation technology of sexed semen.

b. New proposals:-

1. Adoption and promotion of modern technologies in the Hi- tech dairy units.
2. Mobile Veterinary diagnostic and Emergency services

(a). On going SLSC approved schemes for the year 10-11.

1. Reproductive health management to optimize fertility:-

The reproductive efficiency is one of major factors affecting economic viability of any dairy unit. Animal starts production (milk) only after successful reproduction i.e. giving birth to a young one. A sterile buffalo (unable to reproduce) may never come into production. Similarly, animals having low fertility index such as with long calving intervals and late sexual maturity, would have lower life time production in addition to producing a reduced number of progeny as future replacements. A farmer starts getting returns for his investment after an incubation period of 4-5 years, beginning with the birth of a heifer calf until it attains sexual maturity and delivers a calf itself and comes into lactation. There have been significant changes in the reproductive behaviour of animals particularly buffaloes during the last decade or so. The main reasons behind these adverse changes, appear to be pressure on land, lack of common grazing grounds, restricted physical mobility of animals, lack of essential micronutrients in the soil due to intensive agricultural practices etc. As a result, oestrus detection in buffaloes is becoming more and more difficult and most of these buffaloes are being classified as anoestrus, silent breeders or seasonal breeders. In reality, many of these animals are cycling and physiologically

normal as revealed by functional structures on the ovaries through ultra-sonography and gynecological examinations. If one oestrus is missed, it costs the farmer at least Rs 1000/- as maintenance cost of the unproductive animal (Rs 50/- per day per animal) as the breeding process is delayed by 21 days. The field experience reveals that on an average, a delay of six months in the reproductive process of bovines in the state, causing heavy losses amounting to Rs 2500 crores, annually. Recent scientific advances have made it possible, through hormonal interventions to synchronize the breeding process where oestrus detection may not be required. In addition, the reproductive efficiency is also influenced by general health i.e. nutritional status, parasitic load and availability of micronutrients and feeding of balanced concentrate ration. To circumvent this problem, it is proposed to introduce multi dimensional approach comprising of following components:-

- i. Mineral Supplementation
- ii. Deworming with anthelmintics and general health care
- iii. Use of novel technology of "**insemination by clock**".

To accomplish this, regular Multipurpose Animal Camps (MPAC) would be organized in the state. Each Saturday would be fixed as 'camp day' through about 300 teams (a team will consist at least 2 Vety. Surgeon assisted by Para staff). Each team will organize about 30 - 40 camps in its jurisdiction annually resulting into a total of 10000 camps in the state. The camps will focus on services related to:

- a) General health/ sexual health examination and treatment.
- b) Induction and synchronization of oestrus through different hormonal protocols followed by fixed-time insemination (by clock), making oestrus detection un-necessary. Training and guidance by experts shall be made available wherever required. Since, a sizeable number of animals will express heat on a particular day, this new technology would minimize the number of buffaloes being covered through natural service. In this way, the long awaited share of coverage through A.I. would increase substantially, particularly, in the progressive villages.
- c) Micronutrients management & awareness: Farmers would be supplied area-specific mineral mixtures and advised to adopt it as a regular practice.
- d) Control of parasitic diseases based on diagnostic and epidemiological studies

The occasion may also be used to hold calf rallies, to take samples for testing against important diseases and conduct "**Kisan Sangoshties**" to give necessary advice, information, solve problems at the spot and get feed -back from

animal owners for future planning.

Financial requirement and implementation

A sum of **Rs. 0.25 lakh will be required for each multipurpose camp**. A total of 10000 camps are proposed to be held during the year in the state.

Thus, the total expenditure would be Rs. 10000 x 0.25 = 25.00 crores.

The estimated sub- component wise budgetary requirements will be as under:

- | | |
|--|-----------|
| a). Mineral and feed supplements: | 15 crores |
| b). Hormones for reproductive health care: | 03 crores |
| c). Dewormers and General health care: | 07 crores |

As the scheme is a continuation of the programme already being run in the state, it can be taken up immediately without any waiting period with the help of adequate infrastructure and trained human resources available with the department in the form of 942 Veterinary Hospitals, more than 1800 veterinary dispensaries and 800 veterinarians. In addition to holding special camps, door step service particularly to the SC families, will be provided. Special emphasis shall be laid on proper record keeping in the form of Animal Health Card and the reporting system for proper evaluation which should help in future planning.

Expected benefits:

The programme is the most essential requirement to achieve the long cherished objective of "**Infertility- free livestock**" in the state, as stressed by the Hon'ble Chief Minister. It will help to cut down substantially, the huge (hidden) losses, running into crores of rupees, being suffered by the animal owners because of poor fertility vis- a -vis low productivity. It is expected that almost 100 animals will be treated at each camp in addition to delivery of services and follow up medication/ action at the door step. So, a minimum of 10000 X 100= 10 lac farmers shall be directly benefited. Even if the infertility period is reduced by half i.e by 100 days from an average of 180 – 200 days reported in the state and taking Rs. 50/- as upkeep cost per day per animal for an unproductive/ infertile animal; the total benefits to the animal owners would come to : 10 lac X 100 X 50 = Rs 500 crores per annum. In addition, one lakh buffaloes identified under the most important and popular programme of Field Performance Recording will continue to get special treatment and care under the programme. Most of these benefits will flow to Scheduled castes families and other weaker sections of the society as they are the most resource- poor and can not afford proper feeding including green fodder and mineral supplementation to their animals. It is estimated that 2/3 of the funds (20 crores) will be used for scheduled castes and remaining for other weaker sections and owners of best

germplasm (National resource) and thus, this scheme would help to achieve social equality.

The physical progress of the programme during the year 2009- 10 is tabulated in **Annexure I & II**

2. 'In Situ', Preservation of Top Quality Murrah Buffaloes

Haryana, being the home tract of the world famous Murrah buffaloes, has a prominent place in the Animal Husbandry and Dairying map of the country. Murrah buffaloes are heavy milk producers with high fat content in addition to being efficient feed converters even when fed poor quality roughages. Buffaloes contribute more than 90% of total milk produced in the state. In addition, it is a source of quality lean meat and valuable draught power. Murrah has also a central position in rural economy as it contributes the major share of the income of the rural households.

Most of the states procure their breeding stock from Haryana for up gradation of their low producing buffalo population. In addition, about 100,000 high yielding buffaloes in their prime age of production leave the state annually for metros and other cities/towns and nearly all of them end up in the city slaughter houses after their current lactation without leaving any progeny behind. This situation has left the Murrah population in a quagmire of genetic stagnation. The fast genetic improvement of Murrah is not only the top priority for our state but is also a national concern. The state had taken up an ambitious programme to identify the top quality Murrah germplasm through the field performance recording, which serves as an in situ germ plasm bank for further preservation and propagation. This programme of national importance not only needs to be continued but substantially strengthened through **RKVY**.

The basic approach includes screening of the Murrah buffalo population possessing true breed characteristics, for production performance and identification of the buffaloes (and their progeny) yielding more than 2600 litres of milk in a lactation. The male progeny of these recorded buffaloes would be procured and reared under scientific management at rearing stations or in situ as future bulls. The scheme shall continue to be implemented by the departmental of Animal Husbandry and Dairying in collaboration with Haryana Livestock Development Board using the extensive infrastructure at its command. The scheme can be put to action immediately without any waiting period as a similar exercise on a limited scale to identify buffaloes is already in progress. The initial peak yield arrived by recording milk production for four consecutive timings, treating the first recording as "Emptying milk yield", will be followed by monthly recordings by employing contractual milk recorders for more

accurate assessment of the lactation yield. The records will be pooled and compiled at the sub division, district and state level using suitably evolved computer programmes. These elite animals will be insured at the spot with at least 50% of the premium being borne by the Govt. The list of these elite buffaloes and their progeny, being the prized national wealth, will be displayed on the departmental website for easy access of all those who need it.

Sub-components:

The major components of this on-going project, proposed for funding under RKVY during the year 2010-11, are as under:-

- i. Cash incentive to the owners of the elite buffaloes identified through performance recording.
- ii. Assistance to Murrah Breeders Societies.
- iii. 50% Feeding cost of elite progeny born to the performance recorded buffaloes from 4th to 16th month of age.

Categories of performance recorded buffaloes and Cash incentive to owners

The lactation yield will be calculated initially on the basis of peak production. Subsequently, cumulative monthly milk recordings will also be taken into account for more accurate assessment of the lactation yield. Cash incentive at the following rates is proposed to the owners of different categories of the recorded buffaloes:

Lactation yield (kg)	Cash Incentive (Rs.)
2600 - 3200 (13 to 16 Kg peak yield)	5000.00
3201 - 3800(>16 to 19 Kg peak yield)	10000.00
3801 - < 5000 (> 19 to < 25 Kg peak yield)	15000.00
5000 Kg and above (25 Kg & more peak yield)	25000.00

In lieu of the cash incentive provided, the owner would be under obligation (through an affidavit) not to sell his/her recorded buffalo and its male progeny at least for one year. He would be further bound to look after the male calf properly and the department will have the first right of its purchase. Thus an 'in situ" Murrah Germplasm Bank will be available at all the times. In case, the farmer does not abide by the contract i.e. disposes of the identified buffalo and or its male calf, he would have to return the cash incentive received by him. The owners of the recorded buffaloes would be required to breed their animals through artificial insemination only.

Assistance to Murrah Breeders societies

The financial assistance to Murrah Breeders Societies being established in the ideal Murrah Villages is proposed to be continued during the year 2010- 11. It is a modest beginning by the department with an ultimate aim to establish "Murrah Breeders Association" on the lines of similar associations existing world over to look after different breeds e.g. Holstein Friesian; Jersey etc. Once established, this body shall be a self- sustaining agency responsible to look after genetic improvement, conservation, propagation and trade aspects etc of this unique breed based on scientific principles and modern technologies. In a way, this will be a breeders- based lobbying body to look after their interests and impress upon the Govt. to formulate/ modify policies to their favour and improve lot of the animal owners who happen to be under- privileged at present.

The criteria for classifying a village as "**Ideal Murrah Village**" and formation of Murrah Breeders Society in such villages, the level of financial support, functions of the societies and other conditions of the scheme during the year 2010- 11 will remain unchanged. The details are given in **Annexure-11f** for reference. In brief, the Ideal Murrah village should have 50 or more performance- recorded Murrah buffaloes out of which 113rd should yield 15 Kg & more milk per day. A grant of Rs. 5.00 lac as assistance is given to an Ideal Murrah Village society subject to the fulfillment certain criteria. It is expected to fund 20 such societies during the year.

Feeding cost of the progeny

It is an accepted fact that the young and growing stock is the most neglected lot as far feeding is concerned, resulting in poor growth, delayed maturity and higher age at calving i.e the age it comes into production. The female progeny born to the performance- recorded, elite buffaloes are the future bull- dams and prized- wealth of the nation. They deserve proper feeding and care. Most of the farmers are resource- poor and pay attention to the milch animals only for immediate returns. Scientific feeding of these elite calves will pay rich dividends through better production, long productive life and higher reproductive efficiency. The progeny born to the buffaloes yielding 15 Kg & more as peak yield per day would be provided enriched concentrate ration @ 2Kg per day for a period of one year. The approximate cost of extra feeding for each such calf for a year should be $2 \times 365 \times 12 =$ Rs. 8760/- out of which 50% will be provided under RKVY funds and remaining 50% will be the share of the owners.

Financial requirements

The scheme is an ongoing programme and already stands approved by SLSC for the 2008-09 and 2009-10. For the year 2010-11, the component wise financial requirements proposed for funding from RKVY are tabulated below:

S.No.	Component	Amount (Rs. In lac)
1.	Cash incentive to approx 10000 elite buffaloes of different production categories	700.00
2.	50% Feeding cost of 4000 progeny born to recorded buffaloes yielding 15 Kg & above milk,	175.00
3.	Incentive to 20 Murrah Breeders Societies.	100.00
	Total	975.00

Total requirement of the funds = 975.00 lacs.

Expected benefits

The expected benefits of this scheme are too many and over a long period and almost impossible to quantify in monetary terms. The scheme has the same importance for fast genetic improvement of the buffaloes in the country, as foundation has for any multi-storey building. Some of the exclusive benefits include:

- i) Depletion of quality germplasm will be arrested if not stopped altogether.
- ii) 'In situ' Murrah Germplasm Bank would be established from where other states and organization can meet their demand for good quality genetic material required to upgrade their stock. Propagation of germplasm of poor or doubtful quality obtained through middlemen or brokers would be stopped; a great professional service indeed.
- iii) A data bank will be established to help in future planning and to assist in harvesting the benefits of recent biotechnological advances in animal breeding and reproduction.
- iv) There will be a significant improvement in genetic quality vis-a-vis productivity of buffaloes and bring about socio-economic upliftment of their owners throughout the country.
- v) Certified quality young bulls for Semen Production Centres as well as for natural breeding would be available.
- vi) It would help to make buffalo rearing as an industry which in turn would encourage self employment amongst rural unemployed youth.

- vii) Agricultural diversification would be increased and a shift from the traditional crop husbandry to Animal Husbandry would take place.

3. Construction of Modern Animal Sheds for establishment of Hi-tech Dairy Units

The proposed scheme is a continuation of the programme already approved during the year 2009-10, wherein subsidy for the construction of 200 sheds had been provided. The scheme is quite popular and a large number of applications for financial assistance from the prospective dairy entrepreneurs are pending with the department and more applications are expected. Presently, our dairy farming is spread into millions of tiny units or in other words it remains a cottage industry. It is true that this system has provided a source of livelihood and valuable nutrition to our resource poor population, but the adoption of newer technologies, scientific interventions and modern practices had been negligible. As a result, genetic improvement had not been as expected and the quality of milk and its products remains low. The economic status of animal owners had not improved much over the decades.

There is no alternative to commercial dairy units having at least 20 milch animals. Fortunately, there is a positive trend in this direction. Initial subsidy and support to these units for the construction of modern animal sheds as per approved design will not only provide comfortable and scientific housing to the animals, but also boost adoption of Hi-tech dairying as a profession among the educated unemployed youth.

Implementation:

Any farmer, constructing an animal shed having a capacity to house a minimum of 20 or more Milch animals and their followers, as per the approved design, drawing / map, either from his own resources or after availing loan from any commercial bank, would be eligible for 25% subsidy on the capital cost subject to a maximum of Rs. 1.5 lac, if he fulfils other conditions.

The other conditions for availing this subsidy are as under:-

- i. That the applicant should be at least matriculate, unemployed & adult. He should have undergone a training dairy farming from the department/ HAU Hisar/ NORI or any other such institution.
- ii. That the applicant should own at least one acre of agricultural land in his or spouse name.
- iii. Preference will be given to the applicant already engaged in dairy farming with 5

or more milch animals.

- iv. That the applicant will apply for animal shed subsidy on the prescribed application form issued by the department.
- v. That the applicant who applies for availing subsidy for a shed constructed from own resources, will have to give an affidavit to the department that the shed has been constructed as per approved outlay and he has made an expenditure of not less than 6.00 lac from his own resources.

Applications on the prescribed proforma will be invited from the farmers for the construction of shed through an advertisement in news papers and/or through the field functionaries of the department. These applications would be examined at the district level by a committee of the following officers:-

1. DD(AH) of the Distt.
2. SDO(AH) of the concerned Sub Division.
3. Vety. Surgeon of the area

The dully verified & recommended applications will be forwarded to the Director General, Animal Husbandry & Dairying, Haryana for according sanction of the subsidy amount.

Financial outlay:

This PPP mode scheme is an on going scheme already approved by SLSC of RKVY during the year 2009-10 and physical progress is annexed as **Annexure-IV**.

It is proposed to provide assistance for construction of 300 such Sheds during the year 2010-11 **with a total financial requirement of Rs. 450.00 lac only.**

4. Strengthening of the Fodder Seed Farm, S.C.B.P. Sector-III, Hisar:

This is an on going project, already approved by SLSC in the year 2009-10 for a total of Rs. 371.00 lac. During the year 2009-10, an amount of Rs. 109.00 lac was released by the nodal department, which has been utilized as per project. **Funding to the tune of Rs. 154.83 lac is requested for the year 2010-11 under this component** which includes the amount proposed for the 2nd year of the project plus the balance of the 1st year. The detailed (original) proposal is enclosed as **annexure-V** for kind reference.

It may be emphasized that availability of nutritive feed and fodder in sufficient quantity is a pre-requisite to exploit the full genetic potential of stock. It is one

of the most important pillars of livestock production. However, the availability of nutritive fodder is grossly inadequate in state as well as country. It has been estimated that the supply of green fodder is deficit by 48 per cent in the state. The main constraints remain the acute shortage of quality fodder seeds because of poor R & D efforts and a very small share of the cultivated land being used for growing fodder crops. Production of fodder seeds remains a low priority and a poor return activity as compared to the cash crops with the farming community. The department of Animal Husbandry and Dairying is the nodal department for production of fodder and has taken a commendable step by allocating 700 acres of land of GLF for fodder seed production. Its strengthening would go a long way in promoting production of quality fodder in the state with immense benefits in the form of increased animal productivity. The fodder seeds produced at the farm, will be supplied in mini kits with preference to small, marginal and SC farmers free of cost benefiting a minimum of one lac farmers annually.

5. Outsourcing of Artificial Insemination (A.I) services to renowned NGOs:

Artificial Insemination is a time tested technology used world over for genetic improvement of livestock. There is no alternative to this technology. Presently, artificial insemination and other breeding services are being provided by the Department of Animal Husbandry and Dairying, through a network of 2789 institutions with a little participation from NGO's, and private workers. Being entirely in the public sector, efficiency and quality of service remains much to be expected. The situation is worse in Mewat and Panchkula districts which remain under developed and backward. Outsourcing of the artificial insemination, the major breeding activity, should increase the pace of the genetic improvement programme and also inculcate the spirit of competition.

Initially, Artificial Insemination services have been out sourced in Mewat and Shivalik areas to provide quality breeding services to the beneficiaries. As many as 145 centres under PPP mode (115 and 30 in the Distt. of Mewat and Panchkula, respectively) are being set up and assisted under this project . A renowned NGO- J.K. Trust Gram Vikas Yozna providing A.I. services in many states of the country for the last several years made a presentation in the office of Hon'ble C.M. sometime ago where in it was agreed to outsource A.I. services in the districts of Mewat and Panchkula as a pilot project keeping in view the low acceptability of this technology with poor success rates in these areas.

J.K. Trust - Gram Vikas Yojna is providing the necessary training in artificial

insemination to the local educated unemployed youth. The payment to the J.K. Trust shall be made on the basis of actual number of pedigreed calves born through artificial insemination. The verification of calves shall be done through a committee of officers. A target of 600 calves per centre has been fixed for a period of five years, thus producing 69000 calves of high genetic merit in Mewat and 18000 calves in Panchkula district. If the project runs as per expectations, it could bring economic revolution in the farming community with in few years.

Financial requirement:

The total liability over a period of 5 years i.e. duration of the pilot project is Rs. 1123.75 lacs. This PPP-mode scheme stands approved by SLSC in the year 2008-09 and during that year an amount of Rs. 284.20 lac as per agreement has been provided to the NGO. The NGO has already created the necessary infrastructure for providing AI services in the area. The J.K. Trust (NGO) after imparting a training of 4 months duration to A.I.technicians has made 132 centres functional during the year 2009-10. So far 18411 A.I. have been done and 2683 animals have been confirmed pregnant. Keeping in view the circumstances, the progress can be rated as satisfactory.

Funding requirements:

It is expected that about 4000 calves of high genetic merit will be born under the programme for which J.K. Trust would have to be provided financial assistance as per contract. This **amount comes to Rs. 50.00 lacs, which is requested under RKVY.**

6. Study tours, trainings & Awards/ prizes to animal breeders.

a. Study Tours & Trainings:

Continuous training and skill upgradation of Vety. doctors are essential in this era of fast emerging technologies to provide quality services to the farmers. Study tours of staff as well as progressive breeders to the places of excellence or success stories are proposed to be undertaken during the year 2010-11. It is expected to organize about 20 study tours involving 55 professionals (including training of five officers abroad) and 1500 farmers during the year. The upper limit for tour expenses including traveling, lodging & boarding etc. will be Rs. 2000/- per farmer and Rs. 20,000/- per professional for within country and Rs. 2.00 lac per head for overseas training.

The financial requirement for this sub-component is proposed as Rs. 50.00 lacs.

b. Best Animal Breeder Awards:

To inculcate the spirit of competition in rearing quality livestock among

animal breeders of the state, it is proposed to provide cash prizes/ awards to "Best Animal Breeders" at divisional & state level. State as well as divisional level livestock competitions would be organized wherein the "Best Animal Breeders" will be selected by a committee of judges in an open and fully transparent way. A total of 5 shows would be organized, 4 of divisional & 1 state level. The farmers visiting the shows will get exposure to latest technologies & new innovations.

Financial requirement:

The expenditure worth Rs. 7.50 lac per divisional and Rs. 20.00 lac at State level are proposed. The total expenditure proposed including the cost of organizing shows/ competitions providing of awards comes to Rs. 50 lac. Thus, the total financial requirement under the scheme will be as under:-

i.	For study visits of Vets & Progressive farmers	: 50.00 lac
ii.	Awards to owners of best animals	: 50.00 lac
	Total	100.00 lac

7. Fast genetic improvement of cattle and buffaloes by using 4th generation technology of sexed semen:

In spite of recording considerable progress in overall milk production of the state as well as country, our per animal productivity is much to be desired. Any improvement in the production efficiency would bring smile and cheers in the life of millions belonging to not so- privileged strata of our society who rear livestock. As a natural phenomenon, any species gives birth to young ones with sex ratio being 50:50. Almost, fifty percent of the buffalo progeny (male calves) born do not contribute much economically as their fattening (for meat purpose) is not adopted by the farmers due to socio-religious compulsions. Similarly, male calves born as a result of cross breeding programme in cows are undesirable as these can neither be used as bullocks (prone to heat stress) nor can be slaughtered due to cow slaughter act. Had this technology of sexed semen been used in the cross breeding programme, the results would have been altogether different today.

The undesirable male population is subjected to sheer negligence, unplanned slaughter and most of these die prematurely. On the other hand, it shall be desirable to have only male calves (future bulls) from a few outstanding elite females for large scale and faster multiplication of the superior genotype. Indeed, it has been a long cherished dream of livestock owners and animal scientists to predetermine gender of the calf (calf of desired sex) as it has plenty of economic advantages. This technology would also help to check the increasing livestock population without affecting the overall livestock production- a great environmental friendly step.

The proposed technique of sperm sexing is based on the differences in the quantity of DNA in 'X' & 'Y' - bearing sperms. The sperms are sex sorted through flow-cytometry using a laser beam. The proposed technique has been successfully used in more than 20 species. Although, the technique is yet to be practised in buffaloes except for a few experiments, but there is no scientific reasons /evidence for its not being successful in buffaloes.

To start with, it is proposed to purchase one machine for 'X' & 'Y' separation of sperms based on flow cytometry technology and to impart on - hand training to three suitable officers with post graduate qualifications in U.S.A./ Germany.

As a pilot Project, 2000 doses of sexed H.F. semen is being imported from USA to test the technology first hand under our field conditions. It shall be used during the current breeding season in some selected Gaushalas and animals of some progressive farmers. Import license has already been obtained from Govt Of India for the purpose.

Financial requirement:

The scheme, in principle was approved by SLSC in the year 2008-09 subject to the consideration of the views of experts from reputed national institutes like CIRB, University, NBAGR, NORI. The opinion of experts has been given due consideration and is in favour. As per the existing state of knowledge and keeping in view the basic principles of the technology, there seem no reasons for its being not successful in the buffalo. However, the supplier firm has been requested to test the technique for sorting of buffalo semen specifically, for which trials are under way.

During the year 2009-10, the funds were not released against the component hence the proposal for the year 2010-11 is made as under:-

1. Cost of sperm- sexing, flow cytometry based machine.	= 200 lakh
2. Over -seas on- hand training of officers	= 151akh
Sub total	= 2.15 Crores

(b). New proposal during the year 2010-11

1. Adoption and promotion of modern technologies in the Hi-tech dairy units

The Hi-tech dairy units are being promoted in the state with the objective of clean milk production and to replace the out-dated traditional practices with more efficient modern and scientific production technologies. The requirement of each unit may be different depending upon its location, marketing strategies, availability of green fodder and the number of animals etc. it is proposed to provide subsidy @ 50% to these units for purchase of the need based equipments/ infrastructure subject to a maximum of Rs. 2.00 lac per unit. This may include Milking machine; Bulk milk coolers; Silo-pits construction; mechanical harvesters and large capacity Chaff cutters etc.

Implementation

A committee of officers will fix the reasonable cost for each item included for subsidy after surveying the market and inviting tender through newspapers from the leading manufacturers/ suppliers to avoid misuse of the provisions under the scheme. It is proposed to strengthen 100 units during the year 2010- 11. **At the rate of Rs 2.00 lakh per unit , the financial requirement under the component will be Rs. 200.00 lac**

2. Mobile Veterinary diagnostics and emergency services:

Presently, veterinary services are being provided by 2789 institutions in their respective areas of jurisdiction with almost non-existing provisions for attending seriously ill animals who can not walk to the veterinary hospital or to attend emergencies. Similarly, there are no diagnostic facilities at the door step for such animals. Farmer has to take the sample to the block or district level laboratory during the working hours, get the results and present it to the concerned veterinarian to decide the most optimum course of treatment for the animal. This delay some times costs dearly to the owner resulting in death or delay in recovery and extra cost in treating the animal. Similarly, the number of vehicles on the roads is ever increasing and it is becoming difficult and risky to take animal to hospital, particularly if it is sick. In this era of production medicine, where there is more emphasis on prevention rather than treatment, there is an urgent need to have regular provision for diagnostics and sero- surveillance facilities to get necessary inputs to study the epidemiological aspects of important infections and infestations to enable timely preventive measures.

It is proposed to procure six multipurpose mobile vehicles and equip them suitably as a pilot project in 6 Murrah districts namely, Bhiwani, Jind, Hisar, Jhajjar, Rohtak & Sonapat which are rich in livestock resource during the year 2010- 11. The proposed mobile units will be fabricated & well equipped with latest diagnostic equipments including Auto analyzer, Ultra sound machine etc. in addition to routine testing logistics.

Financial Requirement:

6 multi-purpose vehicles with equipment @ Rs. 25 lac each= Rs. 150.00 lac

Implementing cost:-

The administrative expenses to the tune of 25.00 lac (Maximum of 1% of the total allocation under RKVY) is proposed to meet the expenses against operational cost of the projects, consultation fees, expenses of implementing agency including staff cost (no vehicle and no permanent staff). The requested proposed amount is Rs.25.00 lac.

Scheme wise financial requirements for the year 2010-11

(Amount in lacs)

Sr. No.	Name of the Scheme /component	Requirement of funds
a.	On going SLSC approved schemes.	
1	Reproductive health management to optimize fertility	2500.00
2	'In Situ', Preservation of Top Quality Murrah Buffaloes	975.00
3	Construction of Modern Animal Shed for establishment of Hi-tech Dairy Unit.	450.00
4	Strengthening of the Fodder Seed Farm S.C.B.P. Sector-III, Hisar	154.83
5	Out sourcing of A.I. services to renowned NGOs.	50.00
6	Study Tours, Trainings and Awards/ prizes to animal breeders.	100.00
7	Fast Genetic Improvement of cattle and buffaloes by using 4th generation technology of sexed semen.	215.00
b.	New proposal added for the year 10-11.	
1.	Adoption and promotion of modern technologies in the Hi- tech dairy units	200.00
2.	Mobile veterinary diagnostics and emergency services	150.00
3.	Administrative expenses to a maximum of 1% of total allocation.	25.00
	Total	4819.83

Say 4820.00 lac

ANNEXURE-1.

Physical Progress of camps held under Insemination by Clock Programme under RKVY

District	No. of Camps held	No. of Animals given Hormonal Treatment	Animals came in heat		No. of Inseminations done	No. of animals Found Preg.*
			Nos.	%age		
Ambala	20	306	224	73	224	Result awaited
Bhiwani	20	789	530	67	405	216
Faridabad	5	104	92	88	89	61
Fatehabad	24	677	428	63	383	280
Gurgaon	10	310	235	76	235	175
Hisar	45	1706	996	58	836	517
Jhajjar	11	512	332	65	246	140
Jind	14	592	427	72	365	220
Kaithal	26	408	349	86	313	96
Kamal	27	520	412	79	412	131
Kurukshetra	11	230	187	81	166	166
Mahendergarh	10	278	192	69	183	92
Mewat	18	140	104	74	104	85
Palwal	10	230	138	60	138	54
Panchkula	17	387	310	60	242	Result awaited
Panipat	12	667	520	78	425	276
Rewari	10	416	218	52	218	85
Rohtak	7	519	476	92	476	341
Sirsa	28	272	219	80	219	136
Sonapat	23	956	710	74	659	Result awaited
Y/nagar	7	286	230	80	209	71
Total	355	10305	7326	71	6547	3142

* The results of conception in the animals inseminated after December, 2009 are awaited.

Annexure-11

Physical Progress of Herd Health Management Camps including Mineral Supplimentation held under RKVY

(Fig. in Nos.)

District	Camps organized	Animals reported in the Camps	Animals treated with Mineral Mixture	Animals given other treatment	Public Response
Ambala	373	71667	31289	40378	-do-
Bhiwani	741	227511	62682	164829	Very Good
Faridabad	337	41814	41814	0	-do-
Fatehabad	322	90846	54584	36262	-do-
Gurgaon	285	42836	23617	19219	Very Good
Hisar	569	107274	53630	53644	Very Good
Jhajjar	54	10886	5443	5443	Good
Jind	1182	82000	55887	26113	Very Good
Kaithal	337	39667	24367	15300	Good
Kamal	891	88184	30977	57207	Very Good
Kurukshetra	408	58215	30888	27327	-do-
Mahendergarh	223	17708	7782	9926	Good
Mewat	117	46953	2865	44088	Very Good
Palwal	161	17090	8524	8566	Very Good
Panchkula	155	19323	8417	10906	Very Good
Panipat	340	54553	35514	19039	Very Good
Rewari	450	65378	8672	56706	Good
Rohtak	167	28312	21064	7248	Good
Sirsa	1180	167203	96550	70653	Very Good
Sonipat	552	65790	10179	55611	Good
Yamunanagar	370	62293	43941	18352	Good
Total	9214	1405503	658686	746817	Very Good

Annexure-111**Criteria for classifying a village as Ideal Murrah Village and formation of Murrah Breeders society**

There is a scope of formation of "Murrah Breeders Association" in the state involving different Murrah Breeder Societies. As a step towards PPP- mode, Ideal Murrah Villages in the state are identified which will be the source of availability of quality young Murrah bulls not only to the state but also for other states. The criteria of identification of Ideal Murrah village is of having 50 or more recorded Murrah buffaloes out of them 1/3 yielding 15 Kg & more milk per day and the village would be eligible for assistance. A grant of Rs. 5.00 lac as assistance to Breeders' society on annual basis will be granted subject to the fulfillment of the criteria in the year of grant of assistance. The society will be free to construct the office building in the premises of Veterinary Hospital and the site will be earmarked by the local Vety. Surgeon. The subsequent grant will only be released subject to the production of utilization certificate of the grant pertaining to the previous year.

Grant Utilization.

- The grant will be utilized by the society on the welfare activities and Murrah development which interalia include:-
 - a. Purchase of Computer Assembly, Printer, Fax etc. for creation of data base.
 - b. Telephone connection & maintenance thereof for marketing promotion.
 - c. Engaging part time Computer Operator and link man.
 - d. Supply of mineral mixture as feed additive on monthly basis for recorded buffalo.
 - e. Regular deworming, feed supplement to the progeny of such recorded buffaloes.
 - f. Testing expenses against STD of young Murrah bulls born to recorded buffaloes.
 - g. Compensation to owner @ MSP of the young bull found positive for STD and will be castrated at the same time.
 - h. To meet expenses for proceeding in legal compensation cases against negligent vety-services causing losses to the recorded buffaloes and their progeny.
 - i. In case of death of the recorded buffalo the consolation compensation @ Rs.10,000,15,000, 20,000 & 25000/- will be paid by the association for the four categories in addition to the insured sum of the buffalo to be provided by Insurance Co.
 - j. Society will pay suitable compensation against the partial disability which is now not covered under insurance.
 - k. Any other component decided by the society in general body meeting.

ANNEXURE-IV

Physical Achievement under construction of Modern Dairy Sheds during the year 2009-10 under RKVY.

S.No.	District	No. of Modern Dairy Sheds constructed	No. of persons benefited.
1	Kamal	25	250
2	Faridabad	-	-
3	Kaithal	4	40
4	Bhiwani	1	10
5	Ambala	11	110
6	Mewat	-	-
7	Kurukshetra	22	220
8	Rohtak	8	80
9	Gurgaon	5	50
10	Panipat	5	50
11	Hisar	22	220
12	Panchkula	-	-
13	Rewari	6	60
14	Jind	12	120
15	Sonipat	7	70
16	Jhajjar	14	140
17	Yamunanagar	33	330
18	Sirsa	-	-
19	Fatehabad	11	110
20	Narnaul	8	80
	Total	194	1940*

* The benefited farmers include Agri labourers , animal attendants, Milk venders & other service providers.

Annexure-V

Strengthening of the Seed Farm S.C.B.P. Sector-III, Hisar: Quality Seed production of improved varieties of fodder crops .

This is an on going project approved by SLSC in the year 2009-10 amounting to Rs. 371.00 lac. During the year 2009-10, an amount of Rs. 109.00 lac as released by the nodal department has been utilized and as per project the amount proposed for the 2nd year as well as balance of the 1st year amounting to Rs. 154.83 lac is proposed to be funded during the year 2010-11. The proposal is reiterated as under:-

Title of the Project :

Strengthening of the Seed Farm S.C.B.P. Sector-III, Hisar: Quality Seed production of improved varieties of fodder crops .

Rationale/ Justification/ Feasibility studies:

Indian economy is primarily agriculture based. About two-third of the total population is dependent on agriculture and animal husbandry. India has largest population of animals which accounts for 17 percent of the world's livestock population. Livestock sector accounts for more than one third of 26 percent share of agricultural sector to national GDP, thus emerging as an important sub-sector of agriculture. The animal health and productivity are very crucial factors for sustainability. The productivity of our animals especially milch animals is very low as compared to developed countries.

To improve and stabilize animal production and productivity, availability of nutritive feed and fodder in sufficient quantity is a pre-requisit. However, the availability of nutritive fodder is grossly inadequate in the state. It has been estimated that the supply of green and dry fodder is deficit by 48 per cent however the state is surplus in dry fodder by 49 per cent of demand, respectively. This is not surprising as only about 4.0 per cent of the cultivated area in the state is cropped under fodder crops and there is hardly any scope of expansion because of pressure on agricultural land for food and cash crops. The solution, therefore, lies in maximizing fodder

production in space and time identifying new Fodder resources, increasing Fodder production within the existing farming system. The most important constraint in increasing the production and productivity of Fodder crops is the inadequate availability of quality seed of improved varieties of Fodder crops, range grasses and pasture legumes to the farmers. Now-a-days with increased emphasis on animal improvement programme in order to maximize the milk yield in the state, the requirement of nutritious green fodder has increased tremendously. Though the correct assessment of fodder requirement for such a varied livestock is often difficult, yet the total Fodder availability is estimated to be only 40 per cent of the projected need in the state.

To get the maximum yield of milk in accordance to their genetic potential & to keep them healthy it is important to feed them all the essential nutritive elements in right quality and ratio. So it is important to feed them balanced ration. But in rural Haryana the type of feed fodder which is being fed is quite low in protein, essential mineral and vitamins. In agricultural products the cheapest, most palatable and easy source of these essential elements is green fodder. But in most of the rural house holds of Haryana state there is a general scarcity of green fodder. Generally the nutritive elements such as cakes, brans etc. which are fed to the animals as a substitute to the green fodder to maximize the animal productivity but it consequently increases the feeding cost. So for economically better production of milk the green fodder production is of prime importance.

Further, there is also serious need for developing year round green fodder cropping system suitable for different agro-climatic regions. The farmers are well aware of the production technology of the field crops but they lack in knowledge of feed and fodder for their animals because most of these technologies are capital intensive in nature and the benefit of agricultural research and development activities has not reached to all types of farming systems.

Unless adequate quantities of quality seed and improved fodder

production technology are made available to the farmers, the desired impact of high yielding animals would not be achieved. The availability of good quality seed is estimated to be around 15-20 percent of cultivated fodders, however, the continuous replacement of newly developed varieties is very slow. There is less than 1% replacement rate of quality seed of Fodder crops which is very low. There is big gap between the requirement and availability of seeds in the state. A concerted effort is required to augment the seed production of cultivated fodder crops.

Transfer of Fodder technology in rural areas is complex. Once the farmers are motivated and convinced that the new technology is profitable they need various type of assistance to apply the fodder production technology adapted to the local condition. Most of the research efforts have been concentrated on major food and cash crops and not much attention has been paid towards improvement of fodder crops. The ultimate outcome of the proposed project would be noticed in the form of adoption of improved varieties of various fodder crops and increase in the productivity per unit area and income of the farmer.

CONSTRAINTS IN QUALITY FODDER SEED PRODUCTION:

The cultivated fodders and range grasses are the major fodder resources in the state. Most of the fodder crops are shy seeders with low seed production ability because of certain genetic, physiological, environmental and organizational factors.

- *The single most important constraint in increasing the production and productivity of fodder crops is the inadequate availability of quality seed of improved varieties of fodder crops.*
- **Low Seed production Potential:**
 - The seed yield varies from place to place and year to year . For example, the seed yield of Fodder sorghum ranged between 4-19 q/ha over location and years in coordinated seed multiplication trials.

- Very poor seed-setting and low seed production ability of most of the varieties because of continued emphasis on *breeding for vegetative growth potential led them to become low seed producers.*
- Many of fodder species are of indeterminate growth habit. The vegetative and reproductive phases go simultaneously resulting in poor seed setting.
- Non-synchronisation of flowering, prolonged flower drop and uneven maturity.
- Pod/ Seed shattering (e.g. teosinte) and lodging of seed crop.
- Low insect activity during hot summer months results in low seed productivity in entomophilous allogamous legume species (Lucerne, berseem).
- Preferential use of low capability marginal lands and rainfed conditions for raising most of the Fodder seed crops.

~ ***Less Interest in production of Fodder Seeds :***

- Food and cash crops are preferred than fodder crops (Low priority crops).
- The farmers and seed producing agencies in the public and private sectors do not take required interest in the production of fodder seeds and harvest the crops before seed setting to feed animals.
- For most of the Fodder crops, the multiplication ratio is very narrow and is often not remunerative to the producing agency who in turn tries to avoid producing seed. With the result viable seed producing agencies are lacking for these crops.

~ ***Lack of Extension Machinery:***

No single government agency is incharge of development of fodder and owns the responsibility for popularizing improved Fodder production technology amongst farming community. The seed production programme is often taken up in a casual manner.

Seed Production Chain :

The seed production chain in Fodder crops from breeder to certified seed is not operating properly. There is a problem of maintenance of proven and desired quality during the multiplication cycles.

➤ **Poor Management of Fodder crops :**

The poor management of Fodder crops by the seed producers is another major constraint in obtaining high seed yield. No one applies inputs timely as per recommendations in Fodder crops.

➤ **Problem of damage by birds :**

Fodder crops like sorghum and bajra face the problem of birds damage when isolated seed plots are left for seed production .

➤ **Systematic survey of seed requirement and its production by the state government is lacking.**

➤ **Unorganized marketing system of Fodder seeds.**

STRATEGIES FOR FODDER SEED PRODUCTION:

The acute shortage of fodder seed is the main problem in the development of dairy industry which has engaged the attention of scientists, planners and public alike. There are two important aspects which need attention for developing suitable strategies for augmenting Fodder seed resources. The first aspect is to increase the production per se through continuous research efforts and also to breed varieties with high seed yield potential. *The another important aspect is the organisation of seed production programme in the state which is presently a weak link.* Otherwise, the gap between the demand and supply of fodders in general and fodder seed in particular will further widen if effective steps are not taken immediately. *Therefore , it is of utmost importance to plan an efficient strategy to augment the Fodder seed production in a concerted way.*

Suitable Agro-techniques for Maximization of Seed Yield :

- The fodder seed productivity would also be enhanced significantly by development of appropriate seed production technology through maneuvering of crop management practices. The optimum cutting and management practices for seed production in multicut Fodder crops is summarized in table.

OPTIMUM CUTTING AND MANAGEMENT PRACTICES FOR SEED PRODUCTION IN MULTICUT FODDER CROPS

Management Practice	Crops				
	Breeseem	Lucerne	Oats	Fodder sorghum	Teosinte
No of cutting for Fodder production	6	6-8	2-3	2-3	2
No of cuttings before the crop left for seed	2-3	3-4	1	1	Nil
Time of last cut	Late March	17-27 March	Late December	15 August	-
Clipping height (cm.)	Ground Level	Ground Level	7-8	8-10	-
Sowing time	Late October	September	Early November	June-July	July
Seed Rate (Kg/ha)					
-Seed	18-20	8-10	50-60	15-20	20-25
- Fodder	25-30	12-15	80-100	20-25	35-40
Fertilizer dosed (Kg/ha)	N20-40 P ₄₀	N20 P ₄₀ -100	N ₄₀ P 40-60	N60- ₄₀ P40	N120 P50
Seed treatment	Yes	Yes	Yes	No	No
Pollinators requirement	Yes	Yes	No	No	No
Growth regulators. Response.	Yes	Yes	Yes	Yes	N/A

- To discuss the techno-economics of fodder seeds in comparison to preferred food and cash crops for adoption of seed production programme. Farmers and other concerned agencies need to be educated about seed production techniques and encouraged to undertake seed production

programme by providing them help in the form of subsidy, remunerative price and assurance regarding procurement of entire seed produced.

- The fodder seed production farm at S.C.B. Sector –III, Hisar should be strengthened for foundation and certified seed production, processing, storage etc. under close supervision of technical staff.
- Regular assessment of the requirement and finalization and monitoring of fodder seed programme.
- *Overall, needs an organized fodder seed production programme.*

ANTICIPATED BENEFITS THAT WILL FLOW TO THE FARMERS:

To reduce the huge gap between demand and supply of green fodder and to feed the burgeoning animal population with quality fodder, the quality seed must be made available to the farmers and because of problems involved with the seed production of fodder crops, no seed agency/NGO is coming forward to produce the seed of fodder crops. Therefore, the proposed project would help in making available the quality fodder seed to the farmers and to make them learn about the seed production technology of improved fodder crops varieties and thus, increasing their fodder productivity as well as income.

OBJECTIVES/ ACTIVITIES TO BE UNDERTAKEN

Keeping in view the above facts the quality fodder seed production programme will be carried out at Seed Farm, State Cattle Breeding Project, Sector-3, Hisar with the following objectives.

1. To produce quality seeds of fodder crops viz Sorghum, Cowpea , Guar , Bazara , Teosinte , Maize , Barseem, Oat etc. and to increase seed replacement rate of these crops .
2. To supply quality fodder seeds to the farmers to increase & improve quantity and quality of livestock produce i.e. mainly Dairy and Meat products.

3. To transfer technology for round the year fodder production through integrated farmer's participatory approach.

Objective -1:

- i., To produce quality seeds of fodder crops viz Sorghum, Cowpea , Guar , Bazara , Teosinte , Maize , Barseem, Oat etc. and to increase seed replacement rate of these crops .

Approaches :

1. Fodder Seed production at Seed Farm

Presently Seed farm S.C.B.P. farm Sector-III, Hisar is having 708 acres of land of which 611 is under cultivation. The seed of different improved varieties fodder crops(Table 1) will be produced at this Seed Farm.

Table -1

Sr. No	KHARIF CROP	Verity
1	Sorghum Single Cut Multi Cut	HC136, HC171, HJ513, HC308 SSG59-3,
2	Cowpea	CS-88
3	Guar	HFG-119, FS-277, HG-75
4	Teosinte	Improved Teosinte , TL-1,
5	Maze	African Tall, J-1006
6	Bajra	Raj Bajra Chari-2, Giant Bajra
7	Methi	HFM-65
RABI CROPS		
1	Barseem	HB-1, Mescavi
2	Oat Single Cut Multi Cut	OS-6, OS-7, HJ-8, RO-19, Kent, UPO-212
3	Lucerne	T-9, RL -87
4	Chinese Cabbage	Chinese Cabbage

2. Fodder Seed Production at Farmer's Fields :

The seeds of fodder crops will also be produced on the farmers field.

(a) Selection of Farmers:

It includes survey of identified progressive farmers with regard to fodder

production and other resource available with them.

(b) Selection of District:

To start with eight district in the state (Kamal, Kurukshetra, Rohtak , Jhajjar, Rewari, Bhiwani, Hisar and Fatehabad) will be selected.

3. Soil sampling :

It includes the analysis of soil samples for major nutrients at seed farm as well as at farmer's field so as to provide the deficient nutrients in optimum quantity.

4. Supply of materials:

The required inputs including seed of improved varieties, fertilizers, bio-fertilizers etc. will be supplied to the selected farmers through DDAH of concerned districts.

5. Experimentation /Demonstration:

In addition to the production of quality fodder seed at Seed Farm, S.C.B.P., Hisar the fodder seed production technology will be demonstrated at the farmer's field on one acre of land.

6. Holding Chara Diwas!Kisan Mela/Field Day in collaboration with the concerned district at Farmer's Field/Seed Farm.

7. Feed Back

Feed Back from farmers regarding productivity of fodder crops.

Objective -II.

To supply quality fodder seeds to the farmers to increase & improve quantity and quality of Livestock produce i.e. mainly Dairy and Meat products.

Approach:

Minikits will be provided for sale to the selected farmers at subsided rates.

Objective -III.

To transfer technology for round the year fodder production through integrated farmer's participatory approach.

Approach

The following technologies will be transferred through the fodder crop seed development programme

- >' Introduction of improved fodder varieties and rotations to meet green fodder supply round the year
- >' Diversification of farm production on small holder farms
- >' Seeds produced at farmers field will be procured back by the department at good remunerative price and will be sold at the farm counter to the farmers at subsidized rates.

Component of the project

Since it is a multidisciplinary approach, hence, it will require the active participation of the following disciplines.

- | | |
|---|--|
| <p>i) Agronomist
(To be outsourced)</p> | <p>Formulation, execution and monitoring of the project at Seed farm as well as farmers field</p> |
| <p>ii) Extension Education :</p> | <p>To conduct demonstration/ Field day Kisan Mela at Farmer's field</p> |
| <p>iii) Soil Scientist
(To be outsourced)</p> | <p>Analysis of soil samples and integrated nutrient management in Fodder crops on soil test basis.</p> |

9. DEFINITE TIME LINES FOR IMPLEMENTATION

Time Frame

First to Three Year:

Production and distribution of quality seed of fodder crops :

- >' The quality seed of notified varieties of various fodder crops will be produced and distributed to the farmers through various agencies.

- Training will be imparted to the farmers regarding improved varieties and their fodder and quality seed production technology.
- Pamphlets and booklets exhibiting Fodder and quality seed production technology of fodder crops will be published and supplied to the farmers and video shows will be organize.

YEAR WISE FUNDS REQUIRED (in Rs.)

Non-recurring Funds:

Particular	Year 2009-10		Year 2010-11		Year 2011-12		TOTAL
	Quantity	Cost	Quantity	Cost	Quantity	Cost	
MACHINERY:							
Tractor and Trolley	2	1500000	1	750000	1	750000	3000000
Seed cum Fertilizer Drill	2	80000	1	40000	1	40000	160000
Rota Vator	1	70000	-		-		70000
Harrow	2	200000	1	100000	1	100000	400000
Cultivator 11 tyne	2	40000	1	20000	1	20000	80000
Disc Plough	1	25000	-		1	12500	37500
Harvesting Instrument(Reaper)	1	600000	-		1	600000	1200000
Thresher	1	350000	-		-		350000
Suhaga (Planker)	2	20000	1	10000	1	10000	40000
Laser Leveler	1	1000000	-		-		1000000
Combine Harvester	1	1600000	-		-		1600000
EQUIPMENTS :							
Automatic weighing and Bagging machine	1	700000	-		-		700000
Digital balance (One Otis)	2	50000	-		-		50000
Top Pan Balance Digital (10 Kg.)	2	20000	-		1	10000	30000
Moisture meter	1	5000	-		1	5000	10000
Exhaust Fan (Big)	4	10000	-		2	5000	15000
Gravity Separator	1	10000	-		-		10000

Computer & Printer with all Accessories	1	50000	-		-		50000
LCD with Projector	1	100000	-		-		100000
Irrigation Facilities: 5 Shallow Tubewell with Pump House @ Rs. 3 Lacs Per Tubewell	2	600000	2	600000	1	300000	1500000
Replacement of Open Kacha Water Channel (for 300 hectares) by laying underground pipeline (UGPL) @Rs. 2.00 lacs per 10 hectares of land.	300 hectare	-	300 hectare	60,00000			6000000
9" Boundary Wall with 6' height and 2.5' barbed wire in Y shape @ Rs. 820 per r.f.t. total length =23425 r.f.t.	9370 r.f.t.	7683400	7028 r.f.t.	5762960	7027 r.f.t.	5762140	19208500
Deep Bore Tubewell (One)	1	700000	-	-	-	-	700000
Electrification :	-	200000	-	200000	-	100000	500000
Non Recurring Office Expenses: Furniture :	-	300000	-	-	-	-	300000
Total		15913400		13482960		7714640	37111000

SAY RS. 371.00 LAC

(RUPEES THREE CRORE SEVENTY ONE LACS)