

NATIONAL FOOD SECURITY MISSION

Accelerated Pulses Production Programme Operational Guidelines



Kisan ki Unnati
Desh ki Pragati



DEPARTMENT OF AGRICULTURE & COOPERATION
MINISTRY OF AGRICULTURE
GOVERNMENT OF INDIA



National Food Security Mission

Operational Guidelines for Accelerated Plses Production Programme

**Government of India
Ministry of Agriculture
Department of Agriculture & Cooperation**

May, 2010



प्रबीर कुमार बसु, आई०ए०एस०
सचिव
P. K. Basu, I.A.S.
Secretary



भारत सरकार
कृषि मंत्रालय
कृषि एवं सहकारिता विभाग
Government of India
Ministry of Agriculture
Department of Agriculture & Cooperation

FOREWARD

Pulses are grown in 23.26 million ha area in India leading to an annual production of about 15 million tons which amounts to about 25% of world's production of pulses. However, productivity of pulses continues to be low and unstable. Ministry of Agriculture has endeavoured to address the issue through a region-centric and multipronged approach adopted under National Food Security Mission. While the Mission is likely to achieve its goal, ever increasing domestic demand for pulses calls for intensification of extension efforts coupled with policy and technological interventions that can bring about much needed acceleration in production and productivity of pulses besides making cultivation of pulses a profitable proposition for Indian Farmers. It is in this context that the Department of Agriculture & Cooperation has launched a project entitled "Accelerated Pulses Production Programme" in one million hectares of Pulses area under National Food Security Mission with an objective to increase the production and productivity of pulses through demonstration of plant nutrient and plant protection technologies and management practices and to stimulate other farmers in the adjoining area to adopt these technologies.

Operational Guidelines of Accelerated Pulses Production Programme are being brought out in a bound booklet for the benefit of the field functionaries to ensure clarity in implementation of the programme.

I am sure state governments will effectively utilise these guidelines for disseminating the information among stakeholders of the programme so as to enable them to realize their roles and responsibilities under the National Food Security Mission in general and Accelerated Pulses Production Program in particular.

My best wishes for the successful implementation of the program.

5th May, 2010

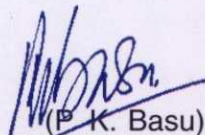

(P. K. Basu)

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ABBREVIATIONS

A3P	Accelerated Pulses Production Programme
CDD	Commodity Development Directorate
DFSMEC	District Food Security Mission Executive Committee
DPD	Directorate of Pulses Development
ICAR	Indian Council of Agricultural Research
INM	Integrated Nutrient Management
IPM	Integrated Pest Management
ISOPOM	Integrated Scheme for Oilseeds, Pulses, Oil palm and Maize
KVK	Krishi Vigyan Kendra
MGREGS	Mahatma Gandhi Rural Employment Guarantee Scheme
NCIPM	National Centre for Integrated Pest Management
NFSM	National Food Security Mission
NPC	National Productivity Council
NPV	Nuclear Polyhedrosis Virus
NREGS	National Rural Employment Guarantee Scheme
NWDPPRA	National Watershed Development Project for rainfed Areas.
PMT	Project Management Team
PSB	phosphate solubilizing bacteria
RKVY	Rashtriya Krishi Vikas Yojana
SAU	State Agricultural University
TA	Technical Assistant

Accelerated Pulses Production Programme Operational Guidelines

1. Introduction

NFSM-Pulses is one of the components of the centrally sponsored scheme of National Food Security Mission and is under implementation since *Rabi* 2007-08. This component has undergone a number of changes since its inception and finally has taken the shape of sole centrally sponsored scheme on pulses covering all the districts in 14 states by merging all the pulses components of another centrally sponsored scheme namely Integrated Scheme on Oilseeds, Pulses, Oil palm and Maize (ISOPOM). Ten districts of Assam and 15 districts of Jharkhand have also been included under NFSM-Pulses. **Accelerated Pulses Production Programme (A3P)** is another step forward for vigorous implementation of the pulse development under the NFSM-Pulses. A3P has been conceptualized to take up the active propagation of key technologies such as Integrated Nutrient Management (INM) and Integrated Pest Management (IPM) in a manner that creates catalyzing impact by assuring farmers of the higher returns from the identified pulse crops.

2. Objectives of A3P.

The objective of A3P are to demonstrate plant nutrient and plant protection centric improved technologies and management practices in compact blocks covering large area for five major pulse crops namely gram, urad (black gram), arhar (red gram/pigeon pea), moong (green gram) and masoor (lentils) for increasing production and productivity of these crops. Apart from increasing the production and productivity of pulse crops by the participating farmers another objective of A3P is to stimulate other farmers in the adjoining areas to adopt these technologies.

3. Number of A3P Units:

It is proposed to take up 1000 A3P units in the next two years i.e.2010-11 and 2011-12 for active promotion of improved production technologies. Each A3P unit would be in the form of a village level block demonstration covering an area

of 1000 hectares. It is proposed to initiate 600 units in the 1st year and 400 units in the 2nd year. *Panchayati Raj* institutions would be involved in the selection of village level A3P units including the participating farmers. Number of units proposed in the selected NFSM pulses districts is given at **Annexure 1**. However, states would be given freedom to select the A3P unit based on availability of contiguous area in various villages of different blocks of the selected districts. This should be done well before the start of each season based on the information provided in Annexure-I. States would furnish a final list of districts as well as blocks in each district where A3P will be implemented.

4. Provision of Inputs:

Kit containing critical inputs including gypsum, micronutrients, rhizobium culture, phosphate Solubilising bacteria (PSB), plant protection chemicals, urea for foliar spray and weedicides are proposed to be given to all the farmers in each A3P unit, free of cost for a maximum area of 2 hectares. The tentative contents of the kit for one ha are given in **Table 1**.

The contents of the kit have been kept very broad to accommodate all the pulse crops under A3P. Since all the components of the kit may not be required for all the crops, therefore, states in consultation with SAU/ICAR institutes should modify the contents of the kit as per the recommendations for that area. State Department of Agriculture will finalise the contents for each pulse crop and get the same approved from the National Mission Director. The overall cost of kits should not exceed the specified limit in any case.

Savings on account of reduced cost of kits, if any, can be used for additional area under A3P, providing support for innovative interventions such as crop insurance or any other component state feels fit and adjusts within the savings. However, this utilization of the savings needs to be approved by the National Mission Director.

Table 1. Provision under A3P for One Ha as 100% Assistance

Item	Quantity	Cost (Rs)
Gypsum	250 kg	1200
Micro Nutrient (Zinc Sulphate, Borax, Ferrous Sulphate, Micronutrient Mixture)	25 Kg	1000
Rhizobium culture	Three packets of 200 gm each	75
PSB culture	Three packets of 200 gm each= 600gm	75
Urea (for foliar spary)	10kg	60
Total	2410	
Fungicide for seed treatment	Thirum 40 gm + 20gm. Carbandzim for 16- 20 Kg seed of Arhar	200
Insecticide	Need based chemicals Quinolphose 25EC, Endosulphan 35 EC , Carbandezim and, Monocrotophose 25EC etc	1250
Trichoderma / Carboxin	500 gm	64
Pheromone traps	10	150
Lures	10	100
S. Total	S. Total	1764
NPV/bio pesticides	2 liters	500
Weedicides	2.5 liters	726
Total for Plant protection		2990
Total		5400

To ensure the timely supply of kits, it is strongly recommended that procurement of inputs may be delegated to district level offices of the Department of Agriculture who in turn would follow the set procurement procedure for the timely supply of inputs. Some of the inputs like gypsum, micronutrients, rhizobium culture and PSB, trichoderma and fungicides for seed treatment, weedicides, Pheromone traps and lure etc are to be supplied to all the farmers well in advance. However in case of nuclear polyhedrosis virus (NPV) /bio-pesticides and plant protection chemicals, procurement arrangements must be finalised well in advance. About 25% of the required quantity of pesticides should be stored so that in any eventuality of pest outbreak these bio-pesticides/chemicals can be made available to the farmers immediately.

To popularise the improved varieties of various pulse crops in the A3P area, the farmer would also be given seed minikit of improved crop variety for 0.2 ha area for every 1.0 ha of pulse area. The seed minikit together with the extension and institutional support will enable the farmer to apply all the critical inputs and conduct field operations at the right time as per the recommended package of practices. The distribution of seed minikits has dual objective of covering the entire area of the participating farmers under these varieties in the next year and also share/distribute the excess seed with other farmers in the area.

5. Eligibility for NFSM Assistance :

Whereas the critical inputs are being ensured in the form of free kits to all the A3P farmers, financial assistance for other inputs like additional seed, farm machines and implements, pumps, etc. would be available to the A3P unit farmers under NFSM-Pulses as per their needs.

6. Hand Holding Approach :

One of the key constraints contributing to low productivity of pulse crops is inadequate extension services at the farm level. In order to address this issue, existing Project Management Teams (PMT) of NFSM would be further strengthened through provision of need based additional technical manpower at sub district level (one technical assistant for each unit) purely on contractual basis to provide on the spot technical backstopping to the farmers in a hand holding approach. Additional technical manpower proposed to be engaged at unit level will extend technical services to farmers in each unit in close coordination with the input supply agencies. Educational qualification of these Technical Assistants (TA) would be the same as prescribed for TA under NFSM at district level. Special provision for their mobility will also be made under A3P.

7. Constitution of Farmers' Groups :

In order to empower the farmers to help themselves, the farmers of a particular A3P unit should be organised to form small groups/commodity

interest groups/joint liability groups so that they may organise various activities of common interest in a systematic manner. These activities may be:

- Procurement of various inputs like fertilizers and pesticides.
- Undertaking mass campaigns like integrated pest management (IPM)
- Arranging individual and collective loans including insurance of their crops.
- Establishment of a farm agro centre from where various machines/implements can be taken on custom hire basis, availing of subsidy on various implements which otherwise are out of the reach of individual farmers or his/her requirements like laser land leveller and ridge furrow planter as well as arranging institutional credit etc. State department of agriculture should extend required help in this endeavour.

8. Capacity Building :

All Technical Assistants appointed under the A3P project will be imparted induction training to carry out various activities proposed under the A3P including distribution of input kits, technical support to farmers and constitution of farmer groups and provide further support to these groups in implementing different activities. All farmers of pigeon pea and chick pea units will be imparted special training on IPM by the National Centre for Integrated Pest Management (NCIPM) and its partner institutes while arrangements need to be made for providing technical training to farmers of A3P units for other three crops viz. moong, urd and lentil through trained technical assistants by the states. These trainings will be provided to farmers in groups as well as to individual farmers on one to one basis. Implementation of Farmers Field School will be modified accordingly where instead of 30 farmers a larger group will be taken up with less number of sessions with focussed attention on a few topics. Similarly, strategy to implement A3P should form an integral part of training programme in the state level training for extension workers provided under NFSM-Pulses for which a sum of Rs. One lakh per training is provided.

9. Convergence of Schemes :

There are number of centrally sponsored schemes like Rashtriya Krishi Vikas Yojana (RKVY), Mahatma Gandhi Rural Employment Guarantee Scheme (MGREGA) {erstwhile National Rural Employment Guarantee Scheme (NREGA)}, National

Watershed Development Project for Rainfed Areas (NWDPR) and other watershed development schemes etc which can be dovetailed with A3P. State governments through State departments of agriculture/*Panchyati Raj* institutions may coordinate this dovetailing so that maximum benefits can be provided to these farmers. Most important component which can be dovetailed for promoting the production and productivity of pulses is the rainwater harvesting through the construction of farm ponds for providing life saving irrigation to pulse crops. The new initiative announced in the Union Budget 2010-11 to organise 60,000 "Pulses and Oilseed villages" is another step in promoting pulses production. This initiative should also be dovetailed with the A3P. Details of the "Pulses and Oilseed villages" are given below:

10. Sixty thousand "Pulses and Oilseeds Villages:

Recently an approach to implement the new initiatives announced in the Union Budget 2010-11 to organise 60,000 "Pulses and oilseeds villages" has been finalised. Under this approach a set of implements such as tractor, rotavator and ridge furrow planter along with some working capital at 6,000 designated watershed centric locations will be provided to a nominated agency who would provide the custom hiring services for pulses and oilseed growers. An amount of Rs.5.00 lakh per agency is proposed for the aforesaid assets with a total amount of Rs.300.00 crores under RKVY. The identified agency would provide services to adjoining 10 villages in a hub and spoke model which would serve 60,000 villages. Farmers would be charged an amount of Rs.500 per hectare for land preparation and sowing which is about 50% of prevailing rate. This amount will be sufficient to meet the operational cost of the service centres such as salary to the driver, cost of POL and other repair & maintenance of the implements. However, states will be free to choose a different set of implements. States should facilitate the convergence of this initiative with the implementation of A3P so that farmers may make use of these machineries in the best possible way for increasing the production and productivity of pulses.

11. Institutional Support :

National Centre for Integrated Pest Management (NCIPM) of Indian Council of Agricultural Research (ICAR) would be associated with the implementation of

A3P programme in pigeon pea and chick pea areas. NCIPM will have following four sub-components:

- NCIPM in collaboration with various working partners of various SAUs/ICAR Institutes/ Krishi Vigyan Kendras (KVKs) would establish 36 “Nuclear Model units” in selected A3P units for pigeon pea and chick pea. Twenty units of pigeon pea in 10 districts of five states and seventeen units of chick pea in eight districts of five states have been identified to be implemented by NCIPM. Details are given in **table 2**. Funds for the provision of kits and hiring of Technical Assistants provided under A3P shall be diverted to NCIPM from respective state allocations.
- NCIPM in collaboration with its partner institutes will impart training to all the Technical Assistants recruited under pigeon pea and chick pea blocks in all the districts/states. In addition, training will also be imparted to different blocks/ district/state level officers and farmers to enhance their capabilities towards healthy crop production through IPM strategies. NCIPM will be required to develop a training calendar in this regard.
- NCIPM would also develop and carryout awareness campaigns through conventional (print) and electronic media, to reach the entire areas covered under A3P for pigeon pea and chick pea.
- To establish centralized “National Pest Reporting and Alert System” through networking of pulse growers, in addition to strengthening of pest diagnostic laboratory.

Table 2. Crop wise and district wise number of A3P units to be implemented by NCIPM and its cooperating centres in different states

S.No	State	District	No. of units for		Cooperating Centres
			Pigeonpea	Chickpea	
1	Andhra Pradesh	Anantpur	1	2	Agricultural Research Station, Anantapur
2	Karnataka	Gulbarga	7	5	Krishi Vigyan Kendra, Ala Road, Gulberga
3	Madhya Pradesh	Chindwara	1	—	JNKVV, Jabalpur
		Narsingpur	2	2	
4	Maharashtra	Osmanabad	2	2	College of Agriculture, Kir Rd., Osmanabad
		Parbhani	2	2	MAU Parbhani
		Aurangabad or Buldhana	1	—	ARS, Badnapur
		Nanded	1	1	Agri College Naigaon
5	Uttar Pradesh	Banda	1	1	IIPR, Kalyanpur, Kanpur
		Hamirpur	2	1	
	Total		20	16	

12. Submission of Action Plans :

Tentative annual allocation will be intimated to the states in advance, based on the districts/ blocks selected. Each District Agriculture Officer will prepare the action plan of the accelerated pulses projects for the concerned district and forward it to State Mission Director who would compile and prepare the state action plan and send the same to centre for approval and release of funds.

13. Release of Funds :

Fund release mechanism would be on the same lines as being followed under regular NFSM.

14. Record Maintenance :

In each A3p unit, a register will be maintained on the lines of formats developed by the National productivity Council (NPC) for demonstrations. Documents on soil test reports, dates of supply of seed, INM/IPM kits, date of sowing should be made part of the documents. A board depicting the A3P unit details needs to be displayed at each patch of the unit. Photographs of each stage of crop development should be maintained in the block demonstration register. Production and yield data should also be made part of the register.

15. Monitoring :

A3P will have a strong mechanism of monitoring of the programme. Closing monitoring of the physical achievements in terms of provision of input minikits, seed minikits and overseeing the activities of the technical assistants will be done by the District Food Security Mission Executive Committee (DFSMEC). District level PMT will monitor the programme implementation on regular intervals. State level and National level PMTs would also be involved in monitoring of the programmes. Respective Commodity Development Directorates (CDD) of Government of India would monitor the programme implementation in the states assigned to them. Head of the agriculture department at the district level should ensure the regular monitoring of the programme on daily basis so that tangible results/suggestions for further improvement in the programme can be made.

16. Monitoring the Supply of Seed Minikits :

Directorate of Pulses Development (DPD) will be the nodal agency for allocation and monitoring of supply of pulses minikits to states. However, Commodity Development Directorate in-charge of concerned pulses states will provide the information on seed supply position to DPD.

17. Reporting System :

State department of agriculture should ensure submission of monthly progress report of A3P along with regular reporting of NFSM-Pulses. Special reporting in

terms of crop condition at regular interval as affected by environment will also be ensured. As a part of the regular online reporting of NFSM, efforts shall be made to develop a dedicated web page and data sets with forms to get the information for online reporting the progress of A3P. Required forms and formats for this purpose would be developed. The Project Management Team at the district level will be responsible for online entry of data.

NFSM Project-A3P Distribution of operational units among 5 pulses crops in NFSM- pulses districts (Summary)

Annexure 1

State	Season	2010-11					2011-12					G. Total							
		Pigeon pea	Mung bean	Urd bean	Gram	Lentil	Total	Pigeon pea	Mung bean	Urd bean	Gram	Lentil	Total	Pigeon pea	Mung bean	Urd bean	Gram	Lentil	Total
Andhra Pradesh	Kharif	13	5	10	0		28	13	5	5	0		23	26	10	15	0	0	51
	Rabi	0	5	15	15		35	0	5	10	10		25	0	10	25	25	0	60
	Total	13	10	25	15	0	63	13	10	15	10	0	48	26	20	40	25	0	111
	Kharif	2					2	2					2	4	0	0	0	0	4
Assam	Rabi	0					0						0	0	0	0	0	0	0
	Total	2	0	0	0	0	2	2	0	0	0	0	2	4	0	0	0	0	4
	Kharif	0					0						0	0	0	0	0	0	0
	Rabi	0			3	3	6				2	2	4	0	0	0	5	5	10
	Summer	0	5				5		5				5	0	10	0	0	0	10
	Total	0	5	0	3	3	11	0	5	0	2	2	9	0	10	0	5	5	20
	Kharif	3		3			6	2		2			4	5	0	5	0	0	10
	Rabi				10		10				5		5	0	0	0	15	0	15
	Total	3	0	3	10	0	16	2	0	2	5	0	9	5	0	5	15	0	25
	Kharif	13	5	3			21	7	5	2			14	20	10	5	0	0	35
	Rabi				3		3				2		2	0	0	0	5	0	5
	Total	13	5	3	3	0	24	7	5	2	2	0	16	20	10	5	5	0	40
Haryana	Kharif	3					3	2					2	5	0	0	0	0	5
	Rabi				5		5				5		5	0	0	0	10	0	10
	Total	3	0	0	5	0	8	2	0	0	5	0	7	5	0	0	10	0	15
	Kharif	5					5	5					5	10	0	0	0	0	10
Jharkhand	Rabi						0						0	0	0	0	0	0	0
	Total	5	0	0	0	0	5	5	0	0	0	0	5	10	0	0	0	0	10
	Kharif	25	15	5	0		45	15	10	5	0		30	40	25	10	0	0	75
	Rabi				20		20				15		15	0	0	0	35	0	35
	Total	25	15	5	20	0	65	15	10	5	15	0	45	40	25	10	35	0	110

NFSM Project-A3P Distribution of operational units among 5 pulses crops in NFSM- pulses districts (Summary)

State	Season	2010-11					2011-12					G. Total							
		Pigeon pea	Mung bean	Urd bean	Gram	Lentil	Total	Pigeon pea	Mung bean	Urd bean	Gram	Lentil	Total	Pigeon pea	Mung bean	Urd bean	Gram	Lentil	Total
Madhya Pradesh	Kharif	6		20			26	4		10			14	10	0	30	0	0	40
	Rabi				85	20	105				55	10	65	0	0	0	140	30	170
	Total	6	0	20	85	20	131	4	0	10	55	10	79	10	0	30	140	30	210
Maharashtra	Kharif	40	25	20			85	20	20	15			55	60	45	35	0	0	140
	Rabi				30		30				20		20	0	0	0	50	0	50
	Total	40	25	20	30	0	115	20	20	15	20	0	75	60	45	35	50	0	190
Orissa	Kharif	3	5	3			11	2	5	2			9	5	10	5	0	0	20
	Rabi						0						0	0	0	0	0	0	0
	Total	3	5	3	0	0	11	2	5	2	0	0	9	5	10	5	0	0	20
Rajasthan	Kharif	0	22	3			25		18	2			20	0	40	5	0	0	45
	Rabi	0			35		35				20		20	0	0	0	55	0	55
	Total	0	22	3	35	0	60	0	18	2	20	0	40	0	40	5	55	0	100
Tamil Nadu	Kharif	0	3	10			13		2	5			7	0	5	15	0	0	20
	Rabi	0					0						0	0	0	0	0	0	0
	Total	0	3	10	0	0	13	0	2	5	0	0	7	0	5	15	0	0	20
Uttar Pradesh	Kharif	10		15			25	5		10			15	15	0	25	0	0	40
	Rabi	0			25	20	45				20	10	30	0	0	0	45	30	75
	Total	10	0	15	25	20	70	5	0	10	20	10	45	15	0	25	45	30	115
West Bengal	Kharif	0		3			3			2			2	0	0	5	0	0	5
	Rabi	0				3	3				0	2	2	0	0	0	0	5	5
	Total	0	0	3	0	3	6	0	0	2	0	2	4	0	0	5	0	5	10
Total	Kharif	123	80	95	0	0	298	77	65	60	0	0	202	200	145	155	0	0	500
	Rabi	0	5	15	231	46	297	0	5	10	154	24	193	0	10	25	385	70	490
	Summer		5						5				5	0	10	0	0	0	10
	Total	123	90	110	231	46	595	77	75	70	154	24	400	200	165	180	385	70	1000



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DEPARTMENT OF AGRICULTURE & COOPERATION
MINISTRY OF AGRICULTURE
GOVERNMENT OF INDIA

By Speed Post

No. CPS 5-33/2011-NFSM
Government of India
Ministry of Agriculture
Department of Agriculture & Cooperation

Krishi Bhawan, New Delhi.
Dated the 8th October, 2012

To

Mission Director (NFSM)/ Director of Agriculture
Government of Andhra Pradesh/Assam/
Bihar/Chhattisgarh/Gujarat/Haryana/Jharkhand/Karnataka/M.P./Maharashtra
Orissa/Punjab/Rajasthan/Tamil Nadu/Uttar Pradesh.

Subject: Preparation of Action Plan for additional area coverage of pulses
during Rabi / Summer under NFSM-Pulses for additional
Rabi/Summer production during 2012-13 – reg.

Sir,

I am directed to convey that the Competent Authority has approved additional allocation for implementation of Action Plan for additional area coverage of pulses during Rabi / Summer under NFSM-Pulses for additional Rabi/Summer production during 2012-13. This additional amount is meant for distribution of certified Seed /INM/IPM/A3P programme.

A copy of State-wise proposed additional area, proposed additional allocation, details of components and tentative allocation under the programme is enclosed.

It is requested to kindly prepare the **Revised Action Plan indicating the intervention-wise physical targets and financial outlays for NFSM-Pulses and A3P keeping in view the amount earlier allocated and additional fund now allocated** and sent to this Ministry for approval before **15th October,, 2012** in **Hard & Soft** copies so that the sanction could be issued before start of Rabi season.

Encl: as above.

anupam.barik@nic.in
cyb_20007@yahoo.co.in

Yours faithfully,



(Dr. Anupam Barik)
Addl. Commr. (Crops)

Copy for information and necessary action to:

1. Principal Secretary/Secretary (Agriculture), Department of Agriculture, Government of above States.

Copy also to:

1. PPS to Secretary (A&C), DAC.
2. PPS to AS&FA, DAC
3. PPS to JS(Crops)
4. Addl. Commr.(B)/AC(NFSM)/US(CA-V)/ STA(Pulses)
5. Director, all Crop Development Directorates
6. Guard File.

**State-wise additional area and additional funds proposed by GOI
under NFSM–Pulses during Rabi/Summer, 2012-13**

(Area in lakh ha. Rs. in crores)

Sl. No	State	Proposed additional area (lakh ha.)	Proposed additional allocation (Rs. in crores)			Details of components
			Assistance for additional area	Assistance for productivity enhancement	Total	
1.	Andhra Pradesh	0.40	2.88	-	2.88	24000 qtls certified seed for additional area 100% seed distribution for additional areas
			1.00	-	1.00	INM package for 20% additional area @Rs.1250/ha
			0.60	-	0.60	IPM package for 20% additional area @Rs.750/ha
			-	3.00	3.00	0.40 lakh ha IPM in Pigeonpea
			4.48	3.00	7.48	
2	Assam	0.50	1.25	-	1.25	INM package for 20% additional area @Rs.1250/ha
			0.75	-	0.75	IPM package for 20% additional area @Rs.750/ha
			-	1.50	1.50	Distribution of water carrying pipe in 1000 farmers @Rs.15000/farmers
			2.00	1.50	3.50	
3	Bihar	1.00	2.40	-	2.40	20000 qtls certified seed for additional area 50% seed distribution for additional areas
			2.50	-	2.50	INM package for 20% additional area @Rs.1250/ha
			1.50	-	1.50	IPM package for 20% additional area @Rs.750/ha
			6.40	-	6.40	
4	Chhattisgarh	0.50	2.40	-	2.40	20000 qtls certified seed for additional area 100% seed distribution for additional areas
			1.25	-	1.25	INM package for 20% additional area @Rs.1250/ha
			0.75	-	0.75	IPM package for 20% additional area @Rs.750/ha
			4.40	-	4.40	

5	Gujarat	1.00	2.40	-	2.40	20000 qtls certified seed for additional area 50% seed distribution for additional areas
			2.50	-	2.50	INM package for 20% additional area @Rs.1250/ha
			1.50	-	1.50	IPM package for 20% additional area @Rs.750/ha
			6.40	-	6.40	
6	Haryana	1.50	4.86	-	4.86	40500 qtls certified seed for additional area 100% seed distribution for additional areas
			3.75	-	3.75	INM package for 20% additional area @Rs.1250/ha
			2.25	-	2.25	IPM package for 20% additional area @Rs.750/ha
			10.86	-	10.86	
7	Jharkhand	0.50	5.30	-	5.30	100 additional units of Gram and lentil A3P @Rs. 5.30 lakh/unit of 100 ha.
			-	3.75	3.75	IPM in Pigeonpea
			5.30	3.75	9.05	
8	Karnataka	2.50	3.34	-	3.34	27780 qtls certified seed for additional area 40% seed distribution for additional areas
			3.13	-	3.13	INM package for 10% additional area @Rs.1250/ha
			1.88	-	1.88	IPM package for 10% additional area @Rs.750/ha
			-	-	-	
			8.35	-	8.35	
9	Madhya Pradesh	0.50	1.14	-	1.14	9090 qtls certified seed for additional area 50% seed distribution for additional areas
			1.25	-	1.25	INM package for 20% additional area @Rs.1250/ha
			0.75	-	0.75	IPM package for 20% additional area @Rs.750/ha
			-	2.50	2.50	PP chemical @ Rs.500/ha in gram
			3.14	2.50	5.64	

10	Maharashtra	1.50	4.57	-	4.57	38060 qtls certified seed for additional area 50% seed distribution for additional areas
			2.62	-	2.62	INM package for 14% additional area @Rs.1250/ha
			-	3.75	3.75	0.50 lakh ha IPM in Pigeonpea@Rs.750/ha
			7.19	3.75	10.94	
11	Orissa	1.50	7.20	-	7.20	For additional A3P units of greengram-100; Blackgram-50
12	Punjab	0.80	0.33	-	0.33	2750 qtls certified seed of summer moong
			2.40	-	2.40	For 50 additional A3P units of green gram in summer
			2.73	-	2.73	
13	Rajasthan	1.00	2.40	-	2.40	20000 qtls certified seed for additional area50% seed distribution for additional areas
			2.50	-	2.50	INM package for 20% additional area @Rs.1250/ha
			1.50	-	1.50	IPM package for 20% additional area @Rs.750/ha
			6.40	-	6.40	
14	Tamil Nadu	0.50	2.40	-	2.40	20000 qtls certified seed for additional area100% seed distribution for additional areas
			1.25	-	1.25	INM package for 20% additional area @Rs.1250/ha
			0.75	-	0.75	IPM package for 20% additional area @Rs.750/ha
			4.40	-	4.40	
15	Uttar Pradesh	1.00	2.40	-	2.40	20000 qtls certified seed for additional area50% seed distribution for additional areas
			2.50	-	2.50	INM package for 20% additional area @Rs.1250/ha
			1.50	-	1.50	IPM package for 20% additional area @Rs.750/ha
			6.40	-	6.40	
	Grand Total	14.70	85.65	14.50	100.15 or say 100.00	

No. CPS 5-33/2012-NFSM
Government of India
Ministry of Agriculture
(Department of Agriculture & Cooperation)

Krishi Bhavan, New Delhi
Dated: 19th June 2012

To

The Principal Secretary/ Secretary (Agriculture)
Department of Agriculture,
Govt of Andhra Pradesh, Assam, Bihar, Chhatisgarh, Gujarat, Haryana,
Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan,
Tamilnadu, Uttar Pradesh, Uttarkhand and West Bengal.

Sub.: Implementation of Special Plan to achieve 19+ Million Tones of Pulses
production during Kharif 2012-13.

Sir,

I am directed to convey the approval of Govt. of India for implementation of Special Plan to achieve 19+million tones of Pulse production during Kharif 2012-13 with a total allocation of Rs. 1544.00 lakhs comprising Rs. 10730.00 lakhs for activities to be undertaken under NFSM and Rs. 4624.00 lakhs for activities to be undertaken within Micro Irrigation Scheme.

In this connection, it is stated that the production of pulses has increased to 18.4 million tones during 2010-11 and which declined to 17.3 million tones in 2011-12 primarily due to severe moisture stress in some of the major states like Maharashtra, Karnataka and damage of mungbean due to excessive rains in Rajasthan. Pulses being widely cultivated under fragile environment of rainfed regions are often suffer due to such aberrations. However, there are many technologies and products available which may be adopted for enhancing the productivity in the existing climatic conditions and farming practices. In this regard, a Special Plan to achieve 19+ million tones of pulses production has been prepared by the Ministry and the same is enclosed herewith.

The Plan basically envisages utilization of new areas through intercropping, improving planting techniques and irrigation use efficiency for inclusive water management and use of important critical but low cost inputs like sulphur and weedicides and productivity boosters.

The various institutions involved in the programme will also be given specific roles for implantations and monitoring. The various interventions proposed may result into an additional production due to additional area brought under pulses through intercropping and gain in productivity due to application of productivity boosters/critical inputs. **The interventions like additional pipes for water carrying and Drip/Sprinklers will be implemented through Micro Irrigation Scheme for which it is proposed to allocate about 10% of the funds of Micro Irrigation Scheme in each State to Director of Agriculture. These are approved components and within the approved norms of NFSM and Micro Irrigation Scheme.**

The Special Plan is to be implemented in 16 states viz Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal. The State-wise activities and allocation of funds under the Special Plan is indicated below:

(Finance: Rs. in lakhs)

State	Intercropping with Oilseeds	Intercropping with Cotton	Intercropping with Moong/ Coarse Cereals	In-situ moisture conservation	Plant Growth Regulator and Nutrient Mixtures	Total Cost under NFSM	Micro Irrigation Scheme		Grand Total
							Additional pipes for water carrying	Drip / Sprinklers	
Andhra Pradesh	240.00	68.00	186.00	302.00	24.00	820.00	192.00	374.00	1386.00
Assam	-	-	-	-	-	-	-	88.00	88.00
Bihar	-	-	-	-	-	-	41.00	81.00	122.00
Chhattisgarh	26.00	-	-	32.00	-	58.00	21.00	54.00	133.00
Gujarat	304.00	107.00	352.00	135.00	-	898.00	90.00	163.00	1151.00
Haryana	-	23.00	223.00	15.00	-	261.00	11.00	17.00	289.00
Karnataka	147.00	20.00	500.00	300.00	20.00	987.00	189.00	324.00	1500.00
Madhya Pradesh	1166.00	25.00	427.00	65.00	12.00	1695.00	195.00	129.00	2019.00
Maharashtra	658.00	149.00	838.00	813.00	46.00	2504.00	525.00	795.00	3824.00
Orissa	-	4.00	-	-	10.00	14.00	-	107.00	121.00
Punjab	-	20.00	-	-	-	20.00	-	1.00	21.00
Rajasthan	262.00	17.00	2207.00	-	27.00	2513.00	-	815.00	3328.00
Tamil Nadu	46.00	5.00	118.00	18.00	41.00	228.00	12.00	113.00	353.00
Uttar Pradesh	-	-	568.00	145.00	19.00	732.00	93.00	261.00	1086.00
Uttarakhand	-	-	-	-	-	-	-	3.00	3.00
West Bengal	-	-	-	-	-	-	-	18.00	18.00
Total	2849.00	438.00	5419.00	1825.00	199	10730.00	1369.00	3255.00	15442.00

The details of State-wise and Intervention-wise physical and financial targets alongwith identified districts under various crops are indicated in the enclosed Special Plan.

It is requested to prepare a detailed district/Block wise action plan indicating physical & financial targets within the allocated amount in the enclosed format and submit the same to the Ministry within a week for approval.

Encl.: As above.

Yours sincerely,


(A. Neeraja)
Director (Crops)

Copy forwarded for necessary action to Commissioner of Agriculture/Director of Agriculture of above States.

Copy also forwarded to:

1. PPS to Joint Secretary (Crops)
2. PS to Director (Crops)
3. Additional Commissioner (B)
4. Additional Commissioner (M)
5. Director, Dte. of Pulses Development, Bhopal
6. Under Secretary (CA-V)
7. STA (Pulses)
8. Guard File.

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6. Under Secretary (CA-V)
7. STA (Pulses)
8. Guard File.

Annual Action Plan on Special programme of Pulses production during 2012-13.

Name of the State-----

1. Intercropping with Pigeonpea+Cotton

Name of the Dist	Name of the Block	Target of intercropping (2% of cotton area) (ha)	Seed requirement@10 kg/ha (qtls)	Cost of seed (Rs. In Lakh)

2. Mung/Urid+Maize/Sorghum/Pearlmillet

Name of the Dist	Name of the Block	Area under (Lakh ha)				Target of intercropping (2.5% of these crops)	Seed requirement@20 kg/ha (qtls)	Cost of seed (Rs. In Lakh)
		Maize	Sorghum	Pearlmillet	Total			

3. Insitu moisture conservation

Name of the Dist	Name of the Block	Ridge & Furrow Method		Additional pipes for water carrying	
		Physical (Ha)	Financial((Rs. In Lakh) @ Rs.1000/- ha	Physical (Ha)	Financial((Rs. In Lakh) @ Rs.1000/-ha

4. Drip & Sprinkler sets

Name of the Dist	Name of the Block	Pigeonpea		Urdbean		Moongbean		Total	
		Drip Irrigation		Sprinkler		Sprinkler		Drip/Sprinkler	
		Physical (ha)	Financial (Rs. In Lakh)	Physical (ha)	Financial (Rs. In Lakh)	Physical (ha)	Financial (Rs. In Lakh)	Physical (ha)	Financial (Rs. In Lakh)

5. Critical inputs/catalysis

Name of the Dist	Name of the Block	Pigeonpea		Urdbean		Moongbean		Total	
		Physical (ha)	Financial (Rs. In Lakh)@ Rs.350/- ha	Physical (ha)	Financial (Rs. In Lakh)	Physical (ha)	Financial (Rs. In Lakh)	Physical (ha)	Financial (Rs. In Lakh)

6. Summary of Financial Implication

Name of the Dist	Name of the Block	Intercropping with soybean, Coarse cereals, Groundnut & cotton	In situ moisture conservation practices	Pulses growth boosters	Total (Rs. In lakh)

7. Specific suggestions

Special programme to achieve 19+ million tons of pulses focusing on Kharif crops

Programme for 2012-13

Department of Agriculture & Cooperation
Ministry of Agriculture
Government of India

SPECIAL PROGRAMME TO ACHIEVE 19+ MILLION TONS OF PULSES

1. BACKGROUND

- 1.1 India accounts about 28% of area and 25% of global production. Over a dozen of pulse crops viz. chickpea, pigeonpea, peas, urd bean, mung bean, lentil, lathyrus, beans, cowpea etc. are grown in diversified production systems as sole crop, inter crop, mixed crop, cover crop, catch crop, alley crop and/or green manure crop depending upon the resource availability and local needs. The primary aim of pulses production is to meet the food, fodder and fuel demand of the resource poor farmers of the semi arid tropics and in turn they help in sustaining the productivity of the system. The rainfed areas of the country are major domain of pulses production. *Alfisols* and *Aridisols* are the most abundant soil orders in the semi arid regions. Inherent fertility and cation exchange capacity (CEC) are low for both the soil orders and nitrogen and phosphorus deficiencies are wide spread with micro nutrient deficiencies common in specific localities. The problems of soil are compounded by excessive run-off and erosion. The primary production constraints in maintaining or increasing agricultural production in semi arid regions is shortage of water for 7.5 to 10 months each year and wide spread nutrient deficiency in soil.
- 1.2 Pulses have occupied a focal attention in recent years due to increasing awareness and concern for sustainable production, food and nutritional security. The virtues of pulse crops such as biological nitrogen fixation (BNF), addition of substantial amount of organic matter in soil, improving physical, chemical, biological conditions of soil, trapping nutrient and water from deeper soil layers and thereby withstand abiotic stresses, protect soil from degradation are now been recognized. Research results have clearly shown that inclusion of pulses in the cropping system significantly improves soil productivity besides economizing upon use of chemical nitrogen in succeeding non-leguminous crops. They also help in breaking disease cycles and improving efficiency of applied inputs due to bringing about favourable changes in soil physical and chemical conditions. Pulse crops are now being introduced in non-traditional areas under intensive cropping systems to diversify the production systems and to bring sustainability in the cropping system.

- 1.3 The production of pulses has increased to 18.4 million tones during 2010-11 and which declined to 17.3 million tons in 2011-12 primarily due to severe moisture stress in some of the major states like Maharashtra, Karnataka and damage of mungbean due to excessive rains in Rajasthan. Pulses being widely cultivated under fragile environment of rainfed regions often suffer due to such aberrations. However, there are many technologies and products available which may be adopted for enhancing the productivity in the existing climatic conditions and farming practices.

2. STRATEGIES FOR ENHANCING PRODUCTION

- 2.1 Introduction of pulses in new niches: vertical diversification through complementarity, i.e. intercropping and horizontal diversification-utilization of rice fallows- the technologies of ICARDA and ICRISAT to be replicated.
- 2.2 Accelerating the productivity through adoption of innovative plant nutrient products technologies (like Bidar technique for pigeonpea/ transplanting of pigeonpea) and use of improved farm machinery for higher water use efficiency.

3. PROPOSED INTERVENTIONS

3.1 Intercropping with oilseeds/commercial crops

3.1.1 Pigeonpea +Groundnut/soybean

Groundnut and soybean are the two important oilseeds which offer great opportunity of intercropping of pigeonpea during Kharif season. The seed of improved varieties of pigeonpea is prerequisite for the successful implementation of intercropping of pigeonpea with groundnut and soybean. The total target area for intercropping is 0.47 million ha which require 47480 qtls of seeds. The total cost @ Rs. 6000 per quintal works out to be Rs. 28.49 crores. The assistance for seed will be provided to farmers in the identified clusters of 100 ha each for demonstrations. The other critical inputs are to be provided from regular programme of NFSM. The state-wise targets of area are given in the following table.

State	Area under Groundnut and Soybeans during Kharif season			Target for Intercropping with Pigeonpea (3.3% of the total area of these crops)	Seed Requirement @ 10kg/ha (Qtls)	Cost of Seed (Rs in lakh)
	Groundnut	Soybean	Total			
Andhra Pradesh	1073	126	1199	40	4000	240
Chhattisgarh	27	101	128	4	430	26
Gujarat	1434	86	1520	51	5070	304
Karnataka	519	215	734	25	2450	147
M P	195	5635	5830	194	19430	1166
Maharashtra	223	3069	3292	110	10970	658
Rajasthan	415	897	1312	44	4370	262
Tamil Nadu	230	0	230	8	760	46
Total	4116	10129	14245	476	47480	2849

3.1.2 Pigeonpea+Cotton

The pigeonpea can also be introduced as intercrop or strip crop with cotton. For the year 2012-13 a target of 0.24 million ha which is about 2% of the cotton area of the identified states is proposed. The total seed requirement for 33% population of intercropping in pigeonpea works out to 7279 qtls. The total cost of seed of pigeonpea works out to be Rs. 4.36 crore. The state-wise targets are given as under:

State	Area of cotton during Kharif season	Target for Intercropping with Pigeonpea (2.0% of cotton)	Seed Requirement @ 10 kg/ha (Qtls)	Cost of Seed (Rs in lakh)
Andhra Pradesh	1879	38	1127	68
Gujarat	2962	59	1777	107
Haryana	641	13	385	23
Karnataka	554	11	332	20
Madhya Pradesh	706	14	424	25
Maharashtra	4125	83	2475	149
Punjab	560	11	336	20
Orrissa	102	2	61	4
Rajasthan	470	9	282	17
Tamil Nadu	133	3	80	5
Total	12132	243	7279	438

3.1.3. Mung/Urd+Maize/Sorghum/Pearlmillet

The intercropping of urd and mung is followed in maize, sorghum and pearlmillet in additive series without any area replacement of any crop. The area target and seed requirement of these crops in different states has been calculated and presented in the following table. The total cost of seed works out to be Rs. 54.19 crores for the year 2012-13.

State	Area under Maize/Millets during Kharif season				Target for Intercropping (2.5% of the total area of these crops)	Seed Requirement @ 20kg/ha (Qtls)	Cost of Seed (Rs in lakh)
	Maize	Sorghum	Pearl Millet	Total			
Andhra Pradesh	440	114	67	621	16	3105	186
Gujarat	423	76	674	1173	29	5865	352
Haryana	10	72	661	743	19	3715	223
Karnataka	1142	216	309	1667	42	8335	500
Madhya Pradesh	830	430	162	1422	36	7110	427
Maharashtra	730	1035	1029	2794	70	13970	838
Rajasthan	1143	727	5488	7358	184	36790	2207
Tamil Nadu	128	188	76	392	10	1960	118
Uttar Pradesh	747	210	935	1892	47	9460	568
Total	5593	3068	9401	18062	452	90310	5419

The State Department of Agriculture will be the nodal agency for identification and delineation of potential area in consultation of SAUs and ICAR institutes. The selection of beneficiaries and programme implementation will be done by the Deputy Director (Agriculture) in the district under the supervision of District National Food Security Mission Executive Committee (DFSMEC).

3.2 Inclusive Water Management - In-Situ moisture conservation

3.2.1 Appropriate planting techniques and tools can effectively conserve the available moisture in the field for longer duration to be utilized by the crop plants. Simple technique of ploughing and planting/sowing across the slope effectively control run-off losses and facilitate better in-situ water use. Besides, the ridge furrow method of sowing is very effective in conserving the water and increasing its use efficiency. The demonstrations of such techniques are proposed to be followed at progressive farmer's field. The farmers will be facilitated by extension personnel and the farmers' facilitator for which they will be provided training for doing operations across the slope sowing and other activities. The normal cost of hiring is Rs.350-400/hour. The ridge-furrow planter can make ridge & furrow on 0.46 ha in one hour. This method of sowing enhances the water use efficiency in pulses and very important in the conditions often affected by water stagnations. It is

proposed to provide hiring charges + labour cost of ridge & furrow planters @ Rs. 1000/ha for the clusters of demonstrations in pigeonpea. This activity will be in addition to regular programme of A3P.

State	Ridge & Furrow Method	
	Physical (ha)	Financial (Rs in lakh)
A.P	30155	302
Chattisgarh	3233	32
Gujarat	13500	135
Haryana	1481	15
Karnataka	30000	300
M.P.	6500	65
Maharashtra	81250	813
Tamilnadu	1833	18
U.P.	14531	145
Total	182483	1825

3.2.2 In addition to ridge-furrow across the slope ploughing and planting also enhances the moisture retention and thus increases the water use efficiency. It is proposed to adopt this technique in the existing A3P demonstrations. The ratio of clusters for across the slope, ridge and furrow and normal sowing will be 25:25:50 in A3P.

3.2.3 One session of training before the onset of the season will also be organized @ Rs. 3500/training for a group of 30 farmers to enhance the capacity of the farmers.

3.2.4 The SAMETI in each state will be entrusted with the responsibility for this activity which will operate with the help of ATMA/KVKs and other stakeholders. The funds for this activity will be released directly to SAMETI.

3.2.5 In many of the districts of central and south India and also in bundelkhand of Madhya Pradesh and U.P. which are the major domain of pulse production for both the States during both the seasons, the water availability and its distribution is most critical. High efficiency in the field (water use) and during conveyance (irrigation efficiency) is essential to increase the production. The farmers often demand additional water carrying pipes to cover distanced field and also operate more number of sprinkler nozzles at a time to have better utilization of energy. The additional pipes for conveyance of water and installation of more sprinkler nozzles is proposed to be provided to the farmers which will cost about Rs 3000 per ha. The funds available under local initiatives of NFSM to each district may be utilized for this purpose. The appropriate modifications in the guidelines will be effected. The state-wise targets are given in following table:

State	Additional Pipes for water carrying	
	Physical	Financial (Rs in lakh)
	(ha)	
A.P	6400	192
Bihar	1350	41
Chattisgarh	700	21
Gujarat	3000	90
Haryana	350	11
Karnataka	6300	189
M.P.	6500	195
Maharashtra	17500	525
Tamilnadu	400	12
U.P.	3100	93
Total	45600	1368

3.2.6 Drips system in pigeonpea- This technology has already been established and given very promising results. The same will be replicated through public-private partnership especially in central India. Jain Irrigation is already implementing such programme in Maharashtra which is proposed to implemented in other states with the involvement of SFAC which will facilitate such activities through farmers groups or farmers producers companies. Similarly sprinklers are important for short duration pulses like urdbean, mungbean and mothbean. To facilitate this activity, it is proposed to allocate about 10% of the funds of micro-irrigation scheme in each state to Director of Agriculture.

3.2.7 Dibbling on ridges which were demonstrated by KVK, Bidar has proved promising. The promotion and creation of awareness about such technology may help in augmenting the pulses productivity and production. The public –private partnership would be appropriate mode to promote these skill intensive technologies.

3.2.8 The targets for different states is given in following table:

State	Pigeonpea		Urdbean		Mungbean		Total	
	Drip Irrigation		Sprinklers		Sprinklers		Drip/sprinklers	
	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
A.P	3016	226	1115	84	856	64	4986	374
Assam			1145	86	20	2	1165	87
Bihar	650	49	0	0	425	32	1075	81
Chattisgarh	323	24	342	26	52	4	718	54
Gujarat	1350	101	275	21	550	41	2175	163
Haryana	148	11	12	1	63	5	223	17
Karnataka	2500	225	325	24	1000	75	3825	324
M.P.	0	0	1500	113	225	17	1725	129
Maharashtra	7600	609	934	70	1546	116	10080	795
Orissa	0	0	332	25	1097	82	1429	107

Punjab	0	0	0	0	14	1	14	1
Rajasthan	0	0	401	30	3469	260	3869	290
Tamilnadu	183	14	863	65	462	35	1508	113
U.P.	1400	109	1814	136	213	16	3427	261
Uttarakhand	0	0	35	3			35	3
West Bengal	0	0	185	14	61	5	245	18
	17170	1369	9276	696	10051	754	36497	2737
Moth bean in Rajasthan							7000	525
Total							43497	3262

3.3 Critical Inputs/Catalysts

3.3.1 Sulphur is the most important secondary nutrient for pulses which when applied under deficient conditions boost the productivity by 20-25%. So far in majority of the cases they have been underfed which reflect on their dismally low productivity.

3.3.2 The TNAU, Coimbatore has developed a product called 'pulse wonder' which increases the productivity by 20% of blackgram and green gram. This product is applied as foliar application and hence the other benefits of water spray are also available to plant. The per ha cost of the product is about Rs. 700. The spray of 5 kg pulse wonder dissolved in 500 litre of water per ha is done at the time of flower initiation (35-40 DAS) in mungbean and urdbean.

3.3.3 Similarly Sri Ramicides Chemicals Pvt Ltd, Chennai has developed plant growth regulators and nutrients mixture which has been demonstrated in the field and has proven effective. This product also enhances the yield by 20% of pulses. This booster will be popularized through cluster demonstrations in identified districts.

3.3.4 The total cost @ Rs. 350/ha i.e. 50% of the cost of the product is Rs. 1.99 crores. The physical and financial targets in different crops and states for these products are given in following tables.

State	Pigeonpea		Urdbean		Mungbean		Total	
	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
A.P	3016	11	2229	8	1711	6	6956	24
Karnataka	3000	11	650	2	2000	7	5650	20
M.P.		0	3000	11	450	2	3450	12
Maharashtra	8125	28	1868	7	3091	11	13084	46
Orissa		0	664	2	2193	8	2858	10
Rajasthan		0	802	3	6937	24	7739	27
Tamilnadu	3750	13	4000	14	4000	14	11750	41
U.P.	1453	5	3628	13	426	1	5506	19
Total	19344	68	16841	59	20808	73	56993	199

3.3.5 Pendimethaline, a pre-emergence weedicide is the most effective in controlling the first flush of weeds in the kharif pulses when applied with 5-6 hours of sowing in moist conditions. The approximate cost of the chemical is about Rs.600/ per ha which is already inbuilt in NFSM-Pulses. The same will be extended for this weedicide to be adopted in the identified clusters.

3.3.6 The IPM modules developed and implemented by NCIPM under A3P may be extended to other areas also for surveillance of pest in pulses and their effective management.

4. AREA OF OPERATION:

4.1 The programme will be implemented in identified districts only. The districts have been identified based on the spread of particular crops. Top 7-8 districts depending upon their contribution to area and production to respective state's total area and production under a particular pulse crop has been identified. In every State minimum of 50% area of individual crop has been adopted for the programme.

4.2 State-wise target districts have been given at **Annexure-I**

5. SPECIFIC ROLE OF INSTITUTIONS

5.1 Fertilizer Cooperatives: IFFCO and KRIBHCO are two leading farmers' cooperatives in the fertilizer sector. Their involvement will enhance the reach of other institutions for the promotion of new products like pulses wonder or other booster product to catalyze the pulse productivity. These products will be promoted in the clusters along with other major nutrients like phosphorus, potassium which are under used in pulses. Besides, the role of sulphur in enhancing the pulses productivity is well established which may also be promoted in these clusters with the involvement of these agencies/cooperatives.

5.2 Tamilnadu Agricultural University: TNAU has developed a PGPR called 'pulse wonder' which boosts the pulses productivity by 25-30%. The University will be involved to promote this product in selected districts through cluster demonstrations to convince the farmers. The product will be supplied to the farmers by the University and other manufacturers outsourced by the University. The State Department of Agriculture will facilitate the University in terms of identification of clusters, implementation and monitoring as well as other activities for further promotion. An amount of Rs. 1.99 crore lakh would be required to promote this booster in select states-Tamilnadu, A.P. and Karnataka and Maharashtra.

5.3 Sri Ramicides Chemicals Pvt Ltd :Like TNAU, RAMCO has also developed a foliar nutrient called ramicide which also boosts the pulses productivity substantially. The RAMCO will be entrusted to promote this product in selected clusters for popularization amongst the farmers.

5.4 Jain Irrigation Ltd: The unique activities of promotion of drip irrigation in pigeaonpea along with transplanting of young seedlings on ridge and furrows (system of pulses intensification) which has already been tested at select locations in the country will be promoted with the active involvement of Jain Irrigation, IIPR, Kanpur and UAS, Bangalore. Rs. 27.72 crore funds from Micro-irrigation scheme may be allocated to Department of Agriculture of the State for utilization of this component in field crops especially pulses.

5.5 Small Farmers Agribusiness Consortium: The SFAC will be involved to promote the agro-techniques amongst farmers groups and FPCs especially ridge-furrow planting.

6. FINACIAL IMPLICATIONS:

Additional Funds for the implementation of specific components are summarized State wise in the Table below. These funds will be released to the State level agencies of NFSM.

Sl. No.	States	Intercrops with Soybean, Coarse Cereals, Groundnut and Cotton	In situ Moisture conservation practices	Pulses Growth Boosters	Total Rs in lacs
1.	Rajasthan	2486		27	2513
2.	Maharashtra	1645	813	46	2504
3.	MP	1618	65	12	1695
4.	Karnataka	667	300	20	987
5.	Gujarat	763	135		898
6.	AP	494	302	24	820
7.	UP	568	145	19	732
8.	Haryana	246	15		261
9.	Tamil Nadu	169	18	41	228
10.	Chhattisgarh	26	32		58
11.	Punjab	20			20
12.	Orissa	4		10	14
	Total	8706	1825	199	10730

7. APPROACH:

7.1 Cluster approach as in the case of A3P will be followed while implementing the special plan on pulses production in select districts.

7.2 Some of the specific interventions/innovations/new products and technologies are proposed to be implemented with the involvement of private enterprises/manufacturers/cooperatives etc.

7.3 ICAR Institutes/SAUs would be involved in monitoring & implementation as in the case of BGREI for demonstrations. The ICAR institutes located in different States may be made nodal for such activities.

7.4 Involvement of Private and public institutions like Jain Irrigation for Bidar Technology or efficient water application tools on the model of Maharashtra in other states; Fertilizer cooperative like IFFCO/KRIBCO for micronutrients and other plant growth regulators

7.5 SFAC for Farmers Producers Company to form the clusters/farmers groups for sprinklers/rain guns in the event of less rainfall/prolong dry spell or drought conditions during Kharif or Rabi.

8. IMPLEMENTATIONS AND MONITORING

8.1 State Department of Agriculture will be nodal agency for implementation of the programme with technical support from ICAR/SAUs and other lead institutions.

8.2 The monitoring of the programme will be done by ICAR institutes/SAUs on the pattern of BGREI.

8.3 The PMT Cell at National, State and District level will remain in the field for 15 days during the time of sowing for coordination with other line departments especially fertilizers.

9. LIKELY OUTCOME

9.1 The proposed interventions are planned to infuse the better technologies and enhance the capacity of the farmers for more investment in agriculture by incentivizing critical inputs.

9.2 Based on the target area under several interventions and likely increase in productivity the gain in production is expected to be about 1.2 million tones.

Identified districts of Pigeonpea

States	No of districts	Districts	Area (ha)	% of State
Andhra Pradesh	6	Adilabad, Guntur, Mahaboobnagar, Nalgonda, Prakasam, Rangareddy	301550	65
Chhattisgarh	4	Bilaspur, Durg, Kawardha, Sarguja	32334	61
Haryana	3	Jhajjar, Rohtak, Sonapat	14807	75
Madhya Pradesh	8	Betul, Chindwara, Khargone, Narshimhapur, Raisen, Rewa, Satna, Sidhi	157515	52
Maharashtra	12	Akola, Amravati, Beed, Buldhana, Latur, Nagpur, Nanded, Osmanabad, Parbhani, Wardha, Washim, Yavatmal	812500	74
Rajasthan	4	Alwar, Banswara, Dungarpur, Udaipur	13657	80
Tamil Nadu	7	Karur, Krishnagiri, Madurai, Salem, Theni, Tiruchirapalli, Vellore	18330	69
Uttar Pradesh	12	Allahabad, Banda, Bullandshahr, Chitrakut, Fatehpur, Hamirpur, Jaunpur, Mirzapur, Pratapgarh, Ramabai Nagar, Sonbhadra, Sultanpur	145312	48
Karnataka	3	Bidar, Bijapur, Gulbarga	491122	84
Gujarat	5	Baroach, Panchmahal, Sabarkantha, Surat, Vadodara	194200	76
Total	64		2181327	

Identified districts of Urdbean

State	No of districts	Districts	Area(ha)	% of State
Andhra Pradesh	3	Guntur, Krishna, Srikakulam	222910	51.9
Assam	6	Barpeta, Dhubri, Goalpara, Jorhat, Nagaon, Sonitpur	22892	52.8
Chhattisgarh	5	Bastar, Jashpur, Mahasmand, Raigarh, Sarguja	68367	64.9
Gujarat	6	Dohad, Mehsana, Patan, Sabarkantha, Vadodara, Valsad	53700	60.0
Haryana	3	Ambala, Panchkula Yamuna Nagar	2450	82.7
Karnataka	2	Bidar, Gulbarga	89833	80.5
Madhya Pradesh	6	Barwani, Chhatarpur, Dhar, Khargone, Shivpuri, Tikamgarh	300000	50
Maharashtra	5	Buldhana, Jalgaon, Nanded, Osmanabad, Washim	186800	52.8
Orissa	5	Bolangir, Jajpur, Kedrapara, Naworangpur, Puri	66441	51.1
Rajasthan	5	Ajmer, Banswara, Bhilwara, Dungarpur, Jhalawar	80161	71.1
Tamil Nadu	4	Cuddalore, Nagapattinam Thiruvarur, Thoothukudi	172556	66.44
Uttar Pradesh	7	Badaun, Barabanki, Hardoi, Lalitpur, Mahoba, Sitapur, Unnao	362777	65.6
Uttaranchal	4	Almora, Nainital, Pauri Garhwal, Tehri Garwal	6927	63.3
West Bengal	4	Malda, Murshidabad, Nadia, Purulia	36963	73.9
Total	65		1649244	

Annexure-I(c)

Identified districts of Mungbean

State	No of districts	Districts	Area(ha)	% of state
Andhra Pradesh	3	Mahaboobnagar, Medak, Srikakulam,	171122	56
Assam	5	Barpeta, Jorhat, Karbi-anglong, Nagaon, Sonitpur	4004	53
Bihar	6	Madehepura, Muzaffarpur, Saharasa, Samastipur, Supaul, Vaishali	10109	64
Chhattisgarh	2	Mahasmund, Raigarh,	10486	66
Gujarat	4	Banaskantha, Kutch, Mehsana, Patan	152500	78
Haryana	2	Bhiwani, Hisar	12562	84
Karnataka	5	Bagalkot, Belgaum, Bidar, Gadag, Gulbarga	209268	76
Madhya Pradesh	6	Barwani, Chhatarpur, Dhar, Khargone, Shivpuri, Tikamgarh	38556	51
Maharashtra	9	Akola, Amravati, Buldhana, Dhule, Jalana, Jalgaon, Nanded, Parbhani, Washim	309100	72
Orissa	6	Bolangir, Ganjam, Jagatsingpur, Kendrapara, Khurda, Nayagarh	219341	76
Punjab	1	Firozpur	2700	52
Rajasthan	6	Ajmer,barmer, Jalore.,Jodhpur Nagaur, Pali	693707	75
Tamil Nadu	3	Nagapattinam, Thiruvarur, Thoothukudi	92478	67
Uttar Pradesh	9	Aligarh, Allahabad, Etah, Fatehpur, Hamirpur, Lalitpur, Mahoba, Mainpuri, Unnao,	42557	59
West Bengal	3	24 Parganas (S), Midnapur (W), Nadia	12120	72
Total	70		1980610	