

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

Krishi Bhavan, New Delhi  
Dated: 19<sup>th</sup> 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	<b>1386.00</b>
Assam	-	-	-	-	-	-	-	88.00	<b>88.00</b>
Bihar	-	-	-	-	-	-	41.00	81.00	<b>122.00</b>
Chhattisgarh	26.00	-	-	32.00	-	58.00	21.00	54.00	<b>133.00</b>
Gujarat	304.00	107.00	352.00	135.00	-	898.00	90.00	163.00	<b>1151.00</b>
Haryana	-	23.00	223.00	15.00	-	261.00	11.00	17.00	<b>289.00</b>
Karnataka	147.00	20.00	500.00	300.00	20.00	987.00	189.00	324.00	<b>1500.00</b>
Madhya Pradesh	1166.00	25.00	427.00	65.00	12.00	1695.00	195.00	129.00	<b>2019.00</b>
Maharashtra	658.00	149.00	838.00	813.00	46.00	2504.00	525.00	795.00	<b>3824.00</b>
Orissa	-	4.00	-	-	10.00	14.00	-	107.00	<b>121.00</b>
Punjab	-	20.00	-	-	-	20.00	-	1.00	<b>21.00</b>
Rajasthan	262.00	17.00	2207.00	-	27.00	2513.00	-	815.00	<b>3328.00</b>
Tamil Nadu	46.00	5.00	118.00	18.00	41.00	228.00	12.00	113.00	<b>353.00</b>
Uttar Pradesh	-	-	568.00	145.00	19.00	732.00	93.00	261.00	<b>1086.00</b>
Uttarakhand	-	-	-	-	-	-	-	3.00	<b>3.00</b>
West Bengal	-	-	-	-	-	-	-	18.00	<b>18.00</b>
<b>Total</b>	<b>2849.00</b>	<b>438.00</b>	<b>5419.00</b>	<b>1825.00</b>	<b>199</b>	<b>10730.00</b>	<b>1369.00</b>	<b>3255.00</b>	<b>15442.00</b>

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.

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.

Yours sincerely,

Encl.: As above.

(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.



#### 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 complimentarity, 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 (ha)	Financial (Rs in lakh)
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	Ferozpur	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	