MOROCCO- OCPF- India- ICRISAT Project

Interim Progress Report

Year 1 (01 April 2013 to 31 July 2013)

Project Title:

Increasing Food Legumes Production by Small Farmers to Strengthen Food and Nutrition Security through Adoption of Improved Technologies and Governance within South-South Cooperation


Project Executing Agency (PEA)
Grain Legumes Research Program
International Crops Research Institute for Semi -Arid Tropics
Patancheru, 502 324, Andhra Pradesh, India

August 2013

Acronyms

ANGRAU	Acharya NG Ranga Agricultural University
ARS	Agricultural Research Station
DE	Director of Extension
DOA	Department of Agriculture
FFD	Farmers Field Days
FPVS	Farmer Participatory Varietal Selection
GAP	Good Agricultural Practices
GMP	Green Morocco Plan
ICM	Integrated Crop Management
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
INM	Integrated Nutrient Management
IPM	Integrated Pest Management
IDM	Integrated Disease Management
KVK	Krishi Vignana Kendra
MIFLI	Morocco- India Food Legumes Initiative
MSSRFMS	Swaminathan Research Foundation
NARS	National Agricultural Research Systems
NGO	Non-Governmental Organization
NPV	Nucleo Polyhedro Virus
NSC	National Seeds Corporation
NFSM-P	National Food Security Mission –Pulses
PEA	Project Executing Agency
RARS	Regional Agricultural Research Station
SHG	Self -Help Group
SSDC	State Seed Development Corporation
SMS	Subject Matter Specialist
SMV	Sterility Mosaic Virus
UASR	University of Agricultural Sciences, Raichur
VBSE	Village Based 'Seed Enterprise'

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Project Summary

1. Title: Increasing Food Legumes Production by Small Farmers to Strengthen Food and Nutrition Security through Adoption of Improved Technologies and Governance within South-South Co-operation

2.Project Executing Agency (PEA): International Crops Research Institute for Semi-Arid Tropics (ICRISAT), Patancheru, India.

3. Location: Andhra Pradesh and Karnataka , India

4. Starting Date: 01 April 2013

5. Completion Date: 30 March 2017

6. Financing: OCP Foundation, Morocco

OCP Financing Grant: US$ 900,000

7. Period Covered by this Report: From 01 April 2013 - 31 July 2013 (Interim Report)

8. **Conclusions /Recommendations:** The first year project activities have been launched and progressing well as per the work-plans. Hence, it is requested to release the budget for year 2, by September 2013 to facilitate implementation of the activities for the year.

Summary of Project Progress

Morocco- India Food Legumes Initiative, the OCP Foundation funded project on "Increasing Food Legumes Production by Small Farmers to Strengthen Food and Nutrition Security through Adoption of Improved Technologies and Governance within South-South Cooperation" is being implemented by ICRISAT in India starting 1st April 2013. ICRISAT is the Project Executing Agency (PEA) and the project is implemented in Andhra Pradesh (AP) and Karnataka states. The principal partners in Andhra Pradesh are Acharya NG Ranga Agricultural University (ANGRAU, Hyderabad) and University of Agricultural Sciences, Raichur (UAS-R) in Karnataka (KA). The other collaborative partners are Department of Agriculture, of respective stategovernments, local Krishi Vignana Kendras (KVKs)and non-governmental organizations (NGOs) and the , self help groups (SHGs). The ultimate aim of the project is "Dissemination and adoption of improved technologies and governance to increase productivity of food legumes through participatory knowledge management systems and South-South collaboration".
The following was the progress achieved during this April- July 2013)

1. PEA conducted project launch and work plan meeting at ICRISAT, Patancheru,(Annexure -2 Minutes of the meeting) all the partners participated actively and contributed to work plan development. Subsequently PEA conducted work plan meetings in each region to delineated responsibilities and fixing targets for each region in consultation with partners.
2. The partners identified two clusters in AP, Kodangal and Bijinpally in Mahabubnagar district, having different soil types. Kodangal is dominated by light soils and Bijinpally is having deep black soils. List of villages under each cluster is given in Annexure 2. Similarly,partners have identified two clusters in Karnataka state, Raichur and Gulbarga districts where target crops (chickpea and pigeonpea) are predominant crops.
3. Project awareness meetings conducted in the project areas in both the project regions (Region 1-AP and Region 2-KA) and farmers showing interest in joining the project and growing target crops were selected.
4. Soil samples collected from the fields of selected farmers and submitted to soil testing laboratories in respective partner institutions. Most of the sample analysis are completed and results of analysis will be ready in Q3and these results will be shared with farmers during soil health training program.
5. Baseline survey questionnaire developed by ICARDA was used for conducting survey in selected clusters in both regions and data collection is in progress. The final report will be available in Q4.
6. Farmer participatory varietal trials were conducted by respective partner organizations in last couple of years (In other ICRISAT collaborative projects) and the results of these trials were used for selecting improved farmers preferred varieties in cluster villages to demonstrate the improved cultivars and best-bet practices.

7. Seeds of selected pigeonpea cultivars (PRG 158, PRG 176, ICPL 87119, and ICPH 2740) were used for sowing in AP clusters and TS 3R and ICPH 2740 in Karnataka. These varieties have different maturity periods and adapted to different soil types. ICPH 2740 seed was supplied by ICRISAT to partners for further distribution to project farmers.
8. Project executing agency (PEA)and partners are jointly conducting on-station training programs on improved crop production practices for Pigeonpea to train the trainers (lead farmers) and newly joined field supervisors.
9. The onset of southwest monsoon was delayed by 3-4 weeks in KA and 15 days in AP.However sowings were completed in both the regions by first week of July.
10. Training programs were conducted by partners on seed treatment with bio control agents and Rhizobium cultures in both the regions.
11. Transplanting technology for pigeonpea was demonstrated in both the regions on small areas.

ABOUT THE PROJECT

MOROCCO- INDIA FOOD LEGUMES INITIATIVE (MIFLI):

Food legumes (pulses) provide an important opportunity contributing to food and nutrition security in a sustainable way, through intensification and diversification of agricultural systems and by providing a major source of nutrition for the poor. Food legumes also play a significant role in the efficient use of soil and water resources and to judicious exploitation of agricultural production systems through enhanced soil nutrition, income and employment generation, animal feed and poverty alleviation.

The overall production levels of food legumes both in India and Morocco have steadily fallen in the last decades and certainly not in accordance with their potential. Yields of food legumes have stagnated and no yield breakthroughs have occurred. Thus, one of the most salient features of the current food legumes market is the consistently lower production against the demand. This has led to increased prices worldwide. It has also made the market volatile and vulnerable to fact and fiction.

The new **Green Morocco Plan (GMP) Strategy** launched in 2008 is intended to implement an agricultural policy that will bring about: (i) the competitive upgrading of the agricultural sector in the perspective of modernization and integration into the world market, and the creation of wealth for the whole value chains; (ii) the taking into account of the whole sector in all its economical, sociological, environmental and territorial components, with priority being given to sustainable human development objectives; (iii) the greater optimization and sustainable management of natural resources; and (iv) the definition of support policies needed for sustainable growth. Food legumes set very well within the GMP with expected raise in production 40-80% by 2020.

Within this **MIFLI** initiative, **India and Morocco through South to South cooperation will join their efforts and expertise to boost food legumes production** in their respective countries. The goal of such initiative would improve food security and nutrition, soil health, income growth, employment opportunities and farmers' organizations and empowerment. Though, both countries will mutually cooperate to sustain their food security

through trade.

The **major outcomes of the initiative** are (**1**) Value chains, add value, marketing and pro-food legumes policy interventions; (**2**) Eco-technology options for sustainable food legumes productivity, profitability and product quality; (**3**) Farmer/producer aggregation and empowerment (Community Based Organisations) for technology verification to improve technology adoption and market access; (**4**) Knowledge connectivity system using different ICT tools for rural communities and project communication; (**5**) Capacity building/farmer and women empowerment and networking of all stakeholders, and South-South collaboration; and (**6**) M&E system for implementation, management and social cost benefit.

A Objectives of the Initiative

Dissemination and adoption of improved technologies and governance to increase productivity of food legumes through participatory knowledge management systems and South-South collaboration

B. Expected outputs and Activities allocated to ICRISAT

Output 2. Improved varieties tested and evaluated through on-farm participatory approach

1.Organize awareness program on project objectives/activities for all stakeholders in project area
2.Identify farmers /groups to implement farmers participatory varietal demonstrations of chickpea and pigeonpea
3. Dissemination of the technical information through flyers and posters on chickpea and pigeonpea varieties and their key traits
4.Identify farmer preferred varieties in both the regions (AP and Karnataka)

Output 3. Integrated crop management options refined and tested by farmers

1. Conduct meetings in the target villages with lead farmers and document existing crop management practices and legume productivity in different cropping systems
2. Conduct awareness meetings in the target villages on the benefits of food legumes in the crop rotation
3. Demonstrations conducted in selected villages onimproved crop production practices adopted in Chickpea and Pigeonpea

Output 4. Functional village-level based seed delivery systems established

1. Reconnaissance survey in project area to document existing seed systems
2. Develop business plan /models for village based seed enterprise
3. Selection of villages for establishing VBSE and sensitizing farmer groups on basic principles of seed enterprise
4. Initiating the process of establishing VBSE

Output 8. Back up research to enhance technology generation, including, IPM/ICM, Crop improvement, adapted mechanization carried out

1. Plans to develop new elite lines of food legume crops with improved resistance to abiotic and biotic stresses with better yield and end use quality suitable for mechanized harvesting
2. Investigate alternative IPM and ICM technologies to increase and stabilize the productivity of target legumes

Output 9.Capacity building and networking of all stakeholders achieved

1. Conduct on-station training on improved crop production practices including improved varieties, IPM, INM, HNPV to lead farmers ,NGOs, technical staff of partner institutes
2. Identifying the individual farmers /farmer groups/ self-help groups for on-station/on-farm training on establishing VBSE , seed production and storage at cluster level
3. Initiate networking between agriculture line departments, Pvt. sector, KVKs for dissemination /exchange of technical information on project activities and outcomes.

Project Performance:

A. Assessment of technical progress:

During the reporting period (01 Apr – 31 Jul 2013), the project partners devoted time in organizing the launching meeting, farmers interactionfor the selection of project sites and farmers for pigeonpea crop. PEA and partners had in-depth discussions in the selection of improved varieties, based on the earlier results of participatory selection of varieties in each region. The selected varieties for the region were procured and distributed to project farmers.Information on various constraints has been gathered for prioritization and developing workplans for the year 2013-14. The details of partners are furnished in Annexure 1. The list of different locations in each stateis given in Annexure 2. The output / activity-wise progress in the regions during this period is given in the table below:

Progress in region 1: Andhra Pradesh

Output 2. Improved varieties tested and evaluated through on-farm participatory approach		
Activity	Target	Status / Comments
1.Organize awareness program on project objectives/activities for all stakeholders in project area	i) Identification of villages in each cluster for CP and PP.	Two cluster, Bijinpally and Kodangal identified in the region; cluster 1: light soils and cluster 2 with deep black soils. A total of 316 farmers enrolled in the

		project. (Annex 2)
	ii) Conducting 2 awareness programs on project in each cluster.	Two awareness programs on project objectives and proposed activities conducted in the region respective clusters. More than 500 farmers attended the meeting.
	iii) Conduct baseline survey,data analyses, report submission to PEA (ICRISAT has to develop questioner and identify the consultant for survey).	Baseline questionnaire developed by ICARDA (a common questionnaire for all OCP partners) shared with partners and data collection is in progress
2.Identify farmers /groups to implement farmers participatory varietal demonstrations of chickpea and pigeonpea	i) Identifying 150 farmers for each crop in respective cluster villages.	Initially the project activities for pigeonpea crop is in progress and 316 farmers identified for project activities. Chickpea season starts from September 2013.
	ii) Distribution of seed to participating farmers for conducting demonstrations.	Seed of improved variety PRG 158 and a short duration variety PRG 176 seed distributed to project farmers in Bijinpally cluster and ICPH 2740 Hybrid seed supplied by ICRISAT distributed in Kodangal cluster. (Annex. 2) Q3
	iii) Supply of inputs such as seed, seed treatment chemical , pesticide, weedicide and bio-control agents to farmers.	Inputs such as seed, insecticide, micronutrients, weedicide supplied to farmers.Seed treatment method demonstrated to farmers in both the clusters.
	iv) Regular Field visits by SMS and giving technical advice to farmers.	Regular field visits will be conducted by field supervisors and periodical visits will be done by SMS.
	v) One on-farm training and one on-station of farmers on improved cultivars and production techniques including IPM and IDM.	one on-station training program was conducted to 150 farmers in Kodangal and Bijinpally clusters and planned to conduct on-farm training at flowering stage of the crop
3.Dissemination of the technical information through flyers and posters on chickpea and	i) Updating the available information on varieties and production technology in local languages and distribution to farmers(600 copies each crop).	PEA and partners jointly developing the training materials on crop production and IPM methods in local languages

pigeonpea varieties and their key traits		is in progress. The translations are made available by the end of Q4
4.Identify farmer preferred varieties in both the regions (AP and Karnataka)	i) Identifying and sourcing the seeds of farmer preferred verities of both the crops and distributing to farmers.	The sources for farmerpreferred pigeonpea varieties were identified by the concern partners at their location and the Hybrid was supplied by ICRISAT (Table 1)
Output 3. Integrated crop management options refined and tested by farmers		
1. **Conduct meetings in the target villages with lead farmers and document existing crop management practices and legume productivity in different cropping systems**	i) Conduct RRA on crop management practices and document the farmer's practices.	PRA is in progress in the region to identify the constraints in crop production. Report will be made available during Q4.
	ii) Demonstrate on-station improved crop management practices in farmers' fields (3 farmers per village/crop).	Demonstration (best-bet practices) was planned and sowings completed on selected farmers field. Awareness programs about best bet practices will be demonstrated during flowering period.
	iii) Collection of soil samples from project areas (AP and KA) and analyze the samples. iv) Geo-referencing of farmers' fields fornutrients mapping.	Soil samples from selected farmers (316) were collected and sent for analysis. 150 samples analysis completed. GPS reading of farmers fields are in progress.
	i) Conduct meetings in the villages and disseminate soil health results to respective farmers. Recommended foliar application of micronutrients.	Q3-Q4
2. **Conduct awareness meetings in the target villages on the benefits of food legumes in the crop rotation**	i) Conduct awareness meeting in the project villages on soil health management through intercropping and cropping system in general (1 meeting in each cluster).	Awareness meetings on intercropping have been conducted during inputs distribution meetings. emphasis laid on maintain soil heath through crop rotation.
	ii) Documentation of economics of intercropping with food legumes/cropping system in the project area.	This aspect will be covered during Q4.
3.Demonstrations conducted in selected villages on improved crop production	i) On-station demonstrations with improved varieties and crop production practices (3 demonstrations / cluster/crop).	On-station demonstration on improved crop production practices will be conducted during Q3 and

practices adopted in Chickpea and Pigeonpea	ii) demonstration of BBF for CP crop.	Q4.
	ii) Demonstration of seed treatment with manual operated seed treatment drum with appropriate chemical and bio-control agents.	Demonstrated seed treatment methods in both the clusters to > 230 farmers.
	iii) Integrated pest management practices (IPM) demonstrations.	This will be taken up in Q3 and Q4 for pigeonpea and Q1 and Q2 of year 2 chickpea.
Output 4. Functional village based seed delivery systems established		
1.Reconnaissance survey in project area to document existing seed systems	i) Conduct a survey in project villages to understand the existing seed systems-a report developed.	A survey on seed system is in progress, report on this will be available in Q4.
2.Develop business plan /models for village based seed enterprise	i) Develop a model for implementing village based seed enterprise (VBSE).	This will be organized in collaboration with farmers during this cropping period. Q4 and Q1-2 of year 2.
	ii) Identification of villages and farmers/association to implement VBSE.	Potential villages identified and farmers groups and other aspects of VBSE is in progress. Q4
3. Selection of villages for establishing VBSE and sensitizing farmer groups on basic principles of seed enterprise.	i) Conduct "GramaSabhas" in cluster to sensitize the farmers about the VBSE and its objectives and benefits of developing VBSE.	This is planned during the field days.Q3-4
	ii) Formation of groups for implementation of VBSE.	During this cropping period Q4 for pigeonpea and Q1-2 for chickpea in year 2
4. Initiating the process of establishing VBSE .	i)Meetings with selected groups in selected villages on developing VBSE and initiating the process of establishing VBSE.	This is planned during the field days when more clusters of farmers are at one place. Q3-4
	ii)Identifying farmers in each cluster and for each crop for seed production.	For pigeonpeaQ3-4, and for chickpea Q1-2 of year 2 .
	iii) Training farmers in seed production techniques, quality control and seed storage methods.	This will be taken-up at cluster level meetings during Q3-Q4...
Output 8. Back up research to enhance technology generation, including, IPM/ICM, Crop improvement, adapted mechanization carried out		
1.Plans to develop new elite lines of food legume crops with improved resistance to abiotic	i) Research on developing elite line is carried out at ICRISAT and adaptation trials will be conducted at other research stations.	Selected lines from various international trials in chickpea and pigeonpea are identified and tested at RARS, Palem and concerned

and biotic stresses with better yield and end use quality suitable for mechanized harvesting		KVKs during year 2.
2.Investigate alternative IPM and ICM technologies to increase and stabilize the productivity of target legumes	i) Dissemination /demonstration of new technologies developed by partner institutions or research institutes (state or central/Pvt.)	The potential IPM options will be shared with the farmers during the peak cropping period. Q3-4
Output 9. Capacity building and networking of all stakeholders achieved		
1.Conduct on-station training on improved crop production practices including improved varieties, IPM, INM, HNPV to lead farmers ,NGOs, technical staff of partner institutes	i)One on-station training organized for cluster farmers and partners staff on CPP including IPM and INM; field visits to show improved varieties; watershed management; Vermi-compost preparation; farm machinery; cultivation aspects.	One on-station training program conducted each cluster on improved crop production technologies. Similarly, it will be donefor chickpea crop during Q3.
2.Identifying the individual farmers /farmer groups/ self-help groups for on-station/on-farm training on establishing VBSE , seed production and storage at cluster level	i) One Training program for selected groups for establishing VBSE including seed production, storage and marketing and book keeping.	This is clubbed with the above activity during Q3-Q4
3. Initiate networking between agriculture line departments, Pvt. sector, KVKs for dissemination /exchange of technical information on project activities and outcomes.	i) Identify the line departments for networking and convergence to implement project activities.	Capacity building activities are organized involving DOA, NGOs, KVKs, SHGs, and the private seed producers in the area for better convergence and wider dissemination of information.
	ii) One meeting with partners and co-partners and CBO, KVKs, NGOs to sensitize about the project objectives/activities and disseminate outcomes.	One project level meeting conducted at respective clusters with all partners and co-partners ,and lead farmers , village leaders, to sensitize about the project objectives and activities for better convergence and effective participation of stake holders.
	iii) Compilation of project progress reports from partners	Every year two reports (half yearly and annual report)

	and updating project web site for wider dissemination of project findings.	will be submitted to donor as agreed during the project launch meeting. Web site design and launching responsibility was given to MSSRF-Chennai.

B. Progress in region 2: Karnataka

Output 2. Improved varieties tested and evaluated through on-farm participatory approach		
Activity	Target	Status / Comments
1.Organize awareness program on project objectives/activities for all stakeholders in project area	i) Identification of villages in each cluster for CP and PP.	Two cluster, (Manvi and Raichur) (Gulbarga and Jewergi) identified in the region; cluster involved 120 a farmers and the second has180(Annex 2)
	ii) Conducting 2 awareness programs on project in each cluster.	Two awareness programs on project objectives and proposed activities conducted in the region respective clusters. more than 200 farmers attended the meeting.
	iii) Conduct baseline survey, data analyses, report submission to PEA (ICRISAT has to develop questioner and identify the consultant for survey).	Baseline questionnaire developed by ICARDA (a common questionnaire for all OCP partners) shared with partners and data collection is in progress
2.Identify farmers /groups to implement farmers participatory varietal demonstrations of chickpea and pigeonpea	i) Identifying 150 farmers for each crop in respective cluster villages.	Initially the project activities for pigeonpea crop is in progress and 300 farmers identified for project activities. Chickpea season starts from September 2013.
	ii) distribution of seed to participating farmers for conducting demonstrations.	Seed of improved variety TS3 R distributed to 600 project farmers in Manvi and Raichurcluster and ICPH 2740 Hybrid seed supplied by ICRISAT was distributed to 18 farmers in Raichur cluster (Annex2) Q3
	iii) supply of inputs such as seed, seed treatment chemical , pesticide, weedicide and bio-control agents to farmers.	Inputs such as seed, insecticide, micronutrients, weedicide supplied to farmers. Seed treatment

		method demonstrated to farmers in both the clusters.
	iv) Regular Field visits by SMS and giving technical advice to farmers.	Regular field visits will be conducted by field supervisors and periodical visits will be done by SMS.
	v) One on-farm training and one on-station of farmers on improved cultivars and production techniques including IPM and IDM.	one on-station training program was conducted to 150 farmers in Kodangal and Bijinpally clusters and planned to conduct on-farm training at flowering stage of the crop
3.Dissemination of the technical information through flyers and posters on chickpea and pigeonpea varieties and their key traits	i) updating the available information on varieties and production technology in local languages and distribution to farmers(600 copies each crop).	PEA and partners jointly developing the training materials on crop production and IPM methods in local languages is in progress. The translations are made available by the end of Q4
4.Identify farmer preferred varieties in both the regions (AP and Karnataka)	i) Identifying and sourcing the seeds of farmer preferred verities of both the crops and distributing to farmers.	The sources for farmer preferred pigeonpea varieties were identified by the concern partners at their location and the Hybrid was supplied by ICRISAT (Table 1)
Output 3. Integrated crop management options refined and tested by farmers		
1.**Conduct meetings in the target villages with lead farmers and document existing crop management practices and legume productivity in different cropping systems**	i) Conduct RRA on crop management practices and document the farmer's practices.	PRA is in progress in the region to identify the constraints in crop production. Report will be made available during Q4.
	ii) Demonstrate on-station improved crop management practices in farmers' fields (3 farmers per village/crop).	Demonstration (best-bet practices) was planned and sowings completed on selected farmers field. Awareness programs about best bet practices will be demonstrated during flowering period.
	iii) Collection of soil samples from project areas (AP and KA) and analyze the samples. iv) Geo-referencing of farmers' fields for nutrients mapping.	Soil samples from selected farmers (305) were collected and sent for analysis. 150 samples analysis completed. GPS reading of farmers fields are in progress.
	v) Conduct meetings in the villages and disseminate soil	Q3-Q4

	health results to respective farmers. Recommended foliar application of micronutrients.	
2. **Conduct awareness meetings in the target villages on the benefits of food legumes in the crop rotation**	i) Conduct awareness meeting in the project villages on soil health management through intercropping and cropping system in general (1 meetings in each cluster).	Awareness meetings on intercropping have been conducted during inputs distribution meetings. emphasis laid on maintain soil heath through crop rotation.
	ii) Documentation of economics of intercropping with food legumes/cropping system in the project area.	This aspect will be covered during Q4.
3.Demonstrations conducted in selected villages on improved crop production practices adopted in Chickpea and Pigeonpea	i) On-station demonstrations with improved varieties and crop production practices (3 demonstrations / cluster/crop). ii) demonstration of BBF for CP crop.	On-station demonstration on improved crop production practices will be conducted during Q3 and Q4.
	ii) Demonstration of seed treatment with manual operated seed treatment drum with appropriate chemical and bio-control agents.	Demonstrated seed treatment methods in both the clusters to > 230 farmers.
	iii) Integrated pest management (IPM) demonstrations.	This will be taken up in Q3 and Q4 for pigeonpea and Q1 and Q2 of year 2 chickpea.
Output 4. Functional village based seed delivery systems established		
1.Reconnaissance survey in project area to document existing seed systems	i) Conduct a survey in project villages to understand the existing seed systems-a report developed.	A survey on seed system is in progress, report on this will be available in Q4.
2.Develop business plan /models for village based seed enterprise	i) Develop a model for implementing village based seed enterprise (VBSE).	This will be organized in collaboration with farmers during this cropping period. Q4 and Q1-2 of year 2.
	ii) Identification of villages and farmers/association to implement VBSE.	Potential villages identified and farmers groups and other aspects of VBSE is in progress. Q4
3. Selection of villages for establishing VBSE and sensitizing farmer groups on basic principles of seed enterprise.	i) Conduct "GramaSabhas" in cluster to sensitize the farmers about the VBSE and its objectives and benefits of developing VBSE.	This is planned during the field days. Q3-4
	ii) Formation of groups for implementation of VBSE.	During this cropping period Q4 for pigeonpea and Q1-2 for chickpea in year 2
4. Initiating the process of	i)Meetings with selected groups in selected villages on	This is planned during the field days when more

establishing VBSE .	developing VBSE and initiating the process of establishing VBSE.	clusters of farmers are at one place. Q3-4
	ii)Identifying farmers in each cluster and for each crop for seed production.	For pigeonpea Q3-4, and for chickpea Q1-2 of year 2 .
	iii) Training farmers in seed production techniques, quality control and seed storage methods.	This will be taken-up at cluster level meetings during Q3-Q4...
Output 8. Back up research to enhance technology generation, including, IPM/ICM, Crop improvement, adapted mechanization carried out		
1.Plans to develop new elite lines of food legume crops with improved resistance to abiotic and biotic stresses with better yield and end use quality suitable for mechanized harvesting	i) Research on developing elite line is carried out at ICRISAT and adaptation trials will be conducted at other research stations.	Selected lines from various international trials in chickpea and pigeonpea will be tested at RARS, Palem and concerned KVKs during year 2.
2.Investigate alternative IPM and ICM technologies to increase and stabilize the productivity of target legumes	i) Dissemination /demonstration of new technologies developed by partner institutions or research institutes (state or central/Pvt.).	The potential IPM options will be shared with the farmers during the peak cropping period. Q3-4
Output 9. Capacity building and networking of all stakeholders achieved		
1.Conduct on-station training on improved crop production practices including improved varieties, IPM, INM, HNPV to lead farmers ,NGOs, technical staff of partner institutes	i)One on-station training organized for cluster farmers and partners staff on CPP including IPM and INM; field visits to show improved varieties; watershed management; Vermi-compost preparation; farm machinery; cultivation aspects.	One on-station training program conducted each cluster on improved crop production technologies. Similarly, it will be done for chickpea crop during Q3.
2.Identifying the individual farmers /farmer groups/ self-help groups for on-station/on-farm training on establishing VBSE , seed production and storage at cluster level	i) One Training program for selected groups for establishing VBSE including seed production, storage and marketing and book keeping.	This is clubbed with the above activity during Q3-Q4
3. Initiate networking between agriculture line	i) Identify the line departments for networking and convergence to implement project activities.	Capacity building activities are organized involving DOA, NGOs, KVKs, SHGs,

departments, Pvt. sector, KVKs for dissemination /exchange of technical information on project activities and outcomes.		and the private seed producers in the area for better convergence and wider dissemination of information.
	ii) One meeting with partners and co-partners and CBO, KVKs, NGOs to sensitize about the project objectives/activities and disseminate outcomes.	One project level meeting conducted at respective clusters with all partners and co-partners ,and lead farmers , village leaders, to sensitize about the project objectives and activities for better convergence and effective participation of stake holders.
	iii) Compilation of project progress reports from partners and updating project web site for wider dissemination of project findings.	Every year two reports (half yearly and annual report) will be submitted to donor as agreed during the project launch meeting. Web site design and launching responsibility was given to MSSRF-Chennai.

C. Project implementation strategies and approach

To achieve this project goal of dissemination and adoption of improved technologies and governance to enhance the productivity of food legumes,by following participatory approach. The project is implemented through an international consortium of partners composed of OCP Foundation, M.S. Swaminathan Research Foundation, 2 Moroccan research institutes: INRA & IAV Hassan II, and 2 international CGIAR Centers: ICARDA and ICRISAT.

Objectives 2,3,4,8 and 9 are being implemented by a consortium of partners led by the designated ICRISAT coordinator. A Steering Committee comprising representatives from the partnersis to provide overall guidance. Responsibilities were assigned to each institution through yearly work plans. The Project Coordinator facilitates the project under the overall guidance of the Director-Grain Legumes Research Program, ICRISAT.

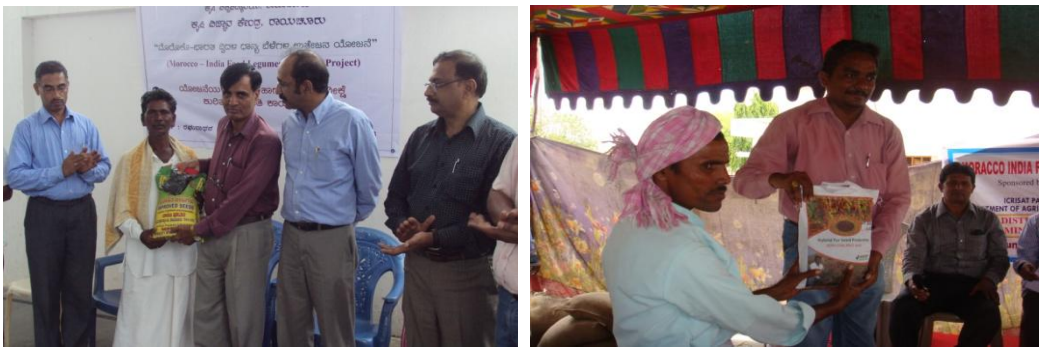
D. Selection of varieties, seed procurement and distribution:

During this phase, the project has selected best performing varieties in pigeonpea through researcher and farmer discussion and also based on the performance of these lines in various farmer participatory research trials. For Mahabubnagar the farmers preferred PRG 158 which is medium duration (150-160 days),large seeded, resistant to wilt, sterility mosaic disease (SMD), tolerant to terminal moisture stress and suitable for light soils, yields upto 2-2.5 t ha^{-1}; PRG 176 is short duration (120

days) wilt and SMD resistant, tolerant to moisture stress, yields up to 1.5-2.0 t ha^{-1}. ICPL 87119 which has duration of 170-180 days, bold seeded, wilt and SMD resistant and widely suitable for heavy soils, yields upto 2-2.5 t ha^{-1}. Besides these two varieties, the researchers have also selected a latest pigeonpea hybrid ICPH 2740, which has high yield potential (2.5-3 t ha^{-1}) in optimal conditions and has wilt and SMD resistance. In Karnataka, farmers prefer TS 3R pigeonpea variety which is short duration (130-140 days) and drought tolerance. The parties in the two states have supplied the respective pigeonpea seeds (3kg each) to the concern farmers (300 in each state) in the selected locations. The detailed hybrid seed supply is furnished in the given Table 1.

Table 1. Details of seed distribution of pigeonpea organized at different locations during 2013 rainy season.

Seeds supplied by ICRISAT			
State	Hybrid / variety	Qty (kgs)	Kits (2 kg per hybrid and 3 kg per variety)
Andhra Pradesh	ICPH 2740	176	88
Karnataka	ICPH 2740	36	18
Total		212	106
Seeds supplied by NARES			
Andhra Pradesh	PRG 158	225	75
	PRG 176	225	75
	ICPL 87119	450	150
Karnataka	TS 3R	900	300
Total		1800	600



Seed distribution at Raghunathahalli (Raichur) and Tunkimetla (Mahabubnagar)

E. Steering Committee: All the project partners,after throughdiscussions selected the following steering committee to facilitate the project activities for the year 1 (2013-14).

Dr CLL Gowda, DDG-R, ICRISAT,Chairman
Dr SV Patil Co-Chairman, OCPF Advisor to India
Dr BS Janagoudar, Director of Research, UASR, Member
Dr R Sudhakar Rao, Director of Research, ANGRAU, Member
Dr GV Ranga Rao, MemberSecretary

F. Conclusions

This project has executed the planned activities satisfactorily. The procurement of large quantities of seed of farmer preferred varieties in the project states was achieved through the committed and timely efforts by the partners. At present, the agriculture season is progressing well with sowings, completed. The activities for chickpea crop will be initiated by September 2013 to assist farmers in selected locations with appropriate varieties and technologies. Since the project is addressing a wide range of activities such as varietal, mechanization, post-harvest, hence need for more resources in the first year, the release of second year funds will be highly appreciated to fulfill the committed agenda.

Observations during farmers interactions

Andhra Pradesh

i) The Farmer interaction during 6th June 2013 at Tunkimetla, MahabubnagarDt, farmers showed lot of enthusiasm to work with researchers under this project. They expressed several pigeonpea crop management problems that include disease management (wilt, sterility mosaic) spacing and plant population, weed management with cultural and chemical means, sprinkler irrigation, white grubs in crop establishment and different maturity groups and their seed quality.

ii) A progressive farmer Mr. Rami Reddy from Kodangal village took up pigeonpea nursery in an innovative way in different trays (fifty seedlings each tray) and planning to grow 2.5 ha of transplanted pigeonpea in this season. The nursery was in excellent shape and ready to transplant in the next week. This activity will be shared with other pigeonpea farmers from Karnataka and Andhra Pradesh.

Karnataka

During the farmer interaction farmers brought out several constraints related to pigeonpea cultivation such as, disease/insect management (wilt, sterility mosaic) spacing and maintain plant population, various ways to overcome the drought. They also expressed the need for efficient storage facility for seed as well as value addition.

Budget Summary

Details of the expenses report will be submitted with Annual Report

Acknowledgements

The project team sincerely acknowledges the OCPF support in strengthening legume improvement in India. Sincere appreciation to all the collaborators including farmers, who are involved in this project.

Annexure 1. Details of Project partners and locations

Location / Collaborator	Contact details
Karnataka	
Dr BV Patil Vice chancellor UASR Raichur 584102	Mobile: 094481 20629 Phone: 08532-221444 Email: vcuasraichur10@rediffmail.com
Dr K Viswanatha Director of Extension UASR Raichur 585102	Mobile: 9480696313; 9448325444 Phone: O8532- 220152 Email: deasrcr09@rediffmail.com deuasr@gamil.com
DrPramodkatti Program Co-Ordinator KVK, Raichur UASR Raichur 584102	Mobile: 9480696314 Phone: 91- 08532- 220196 Residence: 91-08532- 223201 Email: kvkraichur@yahoo.co.in
Dr BS Janagoudar, Director of Research UASR Raichur 584102	Mobile: 08532-220154, e-mail: druasr@rediffmail.com
Mr Mohan Chavan Subject Matter Specialist (Agronomy) KVK, Raichur UASR Raichur 584102	Mobile: 7795684656
Dr SB Goudappa Programme Co-ordinator KVK, Gulbarga, 585101	Mobile : 9480696348, 9448577654 pckvkrwd@gmail.com
Andhra Pradesh	
Dr K Dharma Reddy Associate Director of Research RARS, Palem Mahabubnagar District Andhra Pradesh	Land line office: 08008311779/09441258473 Mobile: 08540 228646 adr_palem@rediffmail.com
Dr R Sudhakar Rao Director of Research ANGRAU Rajendra Nagar 500030 Andhra Pradesh	Mobile : 9989625219
Dr V Swarnalatha, Scientist, Pulses RARS, Palem 509 215 Mahabubnagar District Andhra Pradesh	Mobile: +91 98850422831 Vswarnalatha1980@rediffmail.com

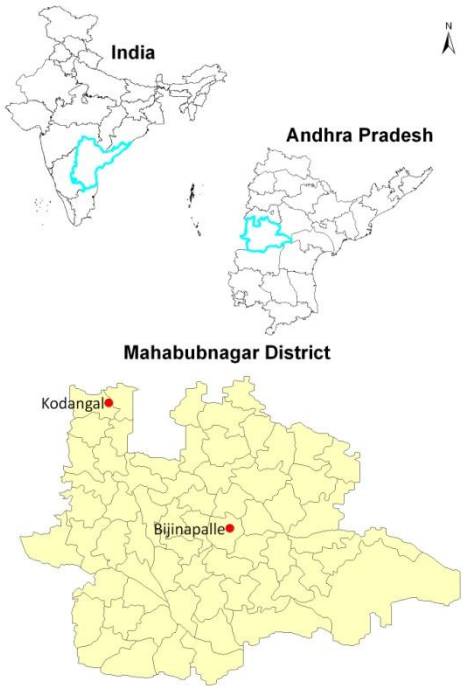
Mr MJsudhakar, Asst. director of Agriculture, Department of agriculture, Govt. of Andhra Pradesh	sudhakarada79@gmail.com 9505518358
MrMohd. Ayud Agriculture officer, Department of agriculture, Govt. of Andhra Pradesh.	8096697731
Dr C Sudhakar (Agronomist) ARS, Tandur ANGRAU Ranga Reddy District Andhra Pradesh	Mobile: 91-9849626318 Mobile: 91-9849626312 Email:sudhakar79@gmail.com
M Anuradha Assistant professor, (Pigeonpea Breeder) RARS, Palem , ANGRAU,	muthyalaanuradha18@gmail.com 8096696470
AE Kamal Kumar Agriculture officer, Department of agriculture, Govt. of Andhra Pradesh.	keleazar@gmail.com 8096697707
MMadhusudhan Reddy Agriculture officer Mahabubnagar district Department of agriculture, Govt. of Andhra Pradesh.	8096605055
Dr CLL Gowda Director RP-Grain Legumes ICRISAT	c.gowda@cgiar.org 9849053475
Dr PM Gaur Principal Scientist - Chickpea ICRISAT	p.gaur@cgiar.org 9866080915
Dr CV Sameer Kumar Sr Scientist – Pigeonpea ICRISAT	c.sameerkumar@cgiar.org 9704157788
Dr GV Ranga Rao Special Project Scientist – IPM ICRISAT	g.rangarao@cgiar.org 9440222016
DrChRavinder Reddy Sr Scientist – ICRISAT	c.reddy@cgiar.org 9441887197

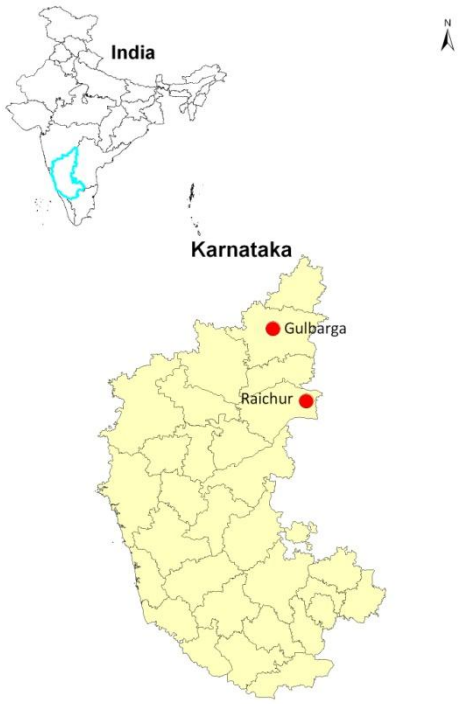
Annexure 2.Details of Pigeonpea Project locations and farmers involved during 2013-14

State	District	Taluka/Mandal	Village	No. of farmers
Andhra Pradesh	Mahabubnagar	Kodangal	Chilmulmailwar	50
			Tunkimetla	50
			Chowderpally	29
			Nanderpur	17
		Bijinpally	Gangaram	11
			Garkonda	3
			Waddeman	7
			Allipur	6
			Manganoor	12
			Bijinaplly	5
			Venkatapur	2
			Mahdevpet	1
			Lattupally	23
			Boyapur	29
			Polpally	3
			Mammaipalli	1
			Vattem	2
			Gourarm	11
			Peddamaddanoor	1
			Velgonda	24
			Salkaripeta	9
			Shainpally	7
			Ankampalli	13
Total				**316**
Karnataka	Raichur	Manvi block	a) Kurdi	32
			b) Kallur	8
			c)Raghunathanahalli	60
		and Raichur block	d) Haranappanahuda	20
	Total			**120**
	Gulbarga	Gulbarga Block	a) Somanathhalli	14
			b) Firozabad	10
			c) Nadibinnur	14
			d) Naduvinahalli	12
			e) Hasanpur	10
		Jewargi Block	a) Raddewadgi	15
			b) Kolkur	15
			c) Kudi	20
			d) Mandarwad	10
			e) Kobal	10
		Sedam Block	a)Malkhed	14
			b) Bijnahalli	10
			c) Totanalli	10
			d) Huda B	06
			e) Huda K	10
Total				180
Grand total				300

Annex. 2..contd

Maps depicting project locations in Andhra Pradesh and Karnataka





Annexure 3. Minutes of the project launch meeting held on April 3rd 2013 at ICRISAT Patancheru.

Minute of the Project Launch and Planning Meeting
Morocco India Food Legumes Initiative,

Place: 307 seminar hall, Patancheru, ICRISAT
Date: 03-04-2013

List of Participants

OCPF-India
Dr SA Patil - OCP Advisor to India

Partners
ANGRAU-Hyderabad

1. Dr K Dharma Reddy , Associate Director of Research
2. Dr V Swarnalatha, Pigeonpea Breeder

UAS-Raichur

3. Dr BV Patil , Vice-Chancellor
4. Dr BS Janagoudar, Director of Research
5. Dr KP Vishwanatha, Director of Extension
6. DrPramodKatti, Programme Coordinator
7. Mr Mohan Chavan, Subject Matter Specialist (Agronomy)
8. Dr SB Goudappa, Programme Coordinator
9. DrKantharaju, Programme Coordinator
10. Dr DH Patil , Subject Matter Specialist (Agronomy)

Private Sector Industry (Karnataka)

11. DrBasavarajaGirennavar , Managing Director
12. DrJagadeeshSunkad, Head of Business - Perpetual Resources Division

Department of Agriculture (Andhra Pradesh)

13. MrRaghuramulu, Deputy Director of Agriculture (PP) I/C
14. Mr John Sudhakar, Assistant Director of Agriculture (R)
15. MrAyub, MAO, Department of Agriculture

Department of Agriculture (Karnataka)

16. Ms AN Roopa, Deputy Director of Agriculture
17. MrJalinderGundappa, Assistant Director of Agriculture

Non-Government Organizations (NGOs)

18. Mr G Thirupathi Reddy, Chief Executive Officer

ICRISAT–Patancheru

19. Dr CL LaxmipathiGowda, Research Program Director
20. Dr PM Gaur, Principal Scientist (Chickpea Breeding)
21. Dr Ch Ravinder Reddy, Senior Scientist (Technology Exchange)
22. Dr CV Sameer Kumar, Senior Scientist (Pigeonpea Breeding)
23. Dr KB Saxena, Principal Scientist (Pigeonpea Breeding)
24. Dr S Srinivasan, Special Project Scientist (Chickpea Breeding)
25. Mr BV Rao, Manager, Field Research Operations (Chickpea Breeding)

- The meeting was preside by Dr SA Patil OCPF advisor to India and representatives of partner institutes Drs. JV Patil Vice Chancellor, University of Agricultural Sciences ,Raichur , K Dharma Reddy Associate Director of Research, Regional Agricultural Research Station, Palem, Mahabubnagar District and other participants (given above) represented Directorate of Agriculture, NGOs, and KVK from AP and Karnataka states. The meeting proceedings conducted by Dr CLL Gowda, Research program Director, Grain Legumes, ICRISAT.
- Dr CLL Gowda, welcomed the participants on behalf of Dr William Dar, Director General, and elaborated on the overall objective of the Morocco-India Food Legumes Initiative (MIFLI), especially on the smallholder adoption of improved technologies to increase productivity of food legumes through participatory knowledge management systems and South-South collaboration. The project is implemented in Morocco and 6 states in India (Tamil Nadu and Orissa (Covered by MSSRF); Tripura, Madhya Pradesh and West Bengal (by ICARDA); and in Andhra Pradesh and Karnataka is Covered by ICRISAT.
- Project overview was presented by Dr. CLL Gowda, mentioned that project will be executed in two states of India namely Andhra Pradesh and Karnataka in one cluster comprising of 3-5 villages in each state covering 300 farmers for each crop and state. ICRISAT is reasonable to implement 5 outputs out of 11 outputs developed by MIFLI for global activities.
- Dr SA Patil in his address has out lined on the concept and objectives of OCPF to sponsor this project. He also out lined the success stories in Karnataka state which has transformed the lives of small and marginal farmers in Bidar district where in integrated approach of all aspects such as demonstration of technology, soil test based fertilizer recommendation, application of bio fertilizers, use of hydrogel , water harvesting structures , management of crop geometry, pruning, encouragement of seed production to build village based seed entrepreneurship, business development through mini dal mills, establishment of agribusiness complexes ,custom hiring facilities creation and establishment of call centres for problem solution has led to increase in farm income.

- He also stressed on pigeonpea inter cropping with water melon where in farm income per acre was obtained up to Rs I lakh/acre. He emphasised that similar kind of efforts should be put in this project.
- Dr J V Patil in his remarks has mentioned that there is a need to improve pulse productivity since we are importing pulses. There is a need to tackle the problem of poor productivity in all angles and through awareness of best management practices. This project is a total project as it involves seed to market linkage and a good opportunity for all of us to meet the demand of pulses.
- Dr Dharma Reddy stressed that yields in Andhra Pradesh are unacceptably low and there is a need to replace absolute verities with high yielding varieties. Mahabubnagar is the largest pigeonpea cultivating district in the state with 100000 ha area and terminal drought is the major concern apart from *fusarium* wilt. He pointed that chickpea is totally mechanised in the some parts of the state and there is a need to spread this owing to shortage of labour. The efforts of ICRISAT are commendable in developing CGMS based hybrid ICPH 2740 which is suitable for deep black soils and scientists should focus on developing early hybrid for light soils of Mahabubnagar district.
- During work plan presentations Dr Gowda mentioned that any intervention should not lead to increase in cost of cultivation and our approach should be balanced.
- DrChRavinder Reddy presented activities to be taken up under each output in the project for open discussion and suggestions from the partners. The key points on activities agreed upon by the partners are given below.
- Dr K B Saxenaemphasised the need to add market value to the produce and provision of processing facilities.
- Detailed discussions were made on selection of sites agronomic management and allocation of budget.

Key points agreed:

- Based on the present funding availability this project will implement 5 outputs out of the 11 project outputs.
- Project will be implemented in one district each in two states 1) Andhra Pradesh (AP) and 2) Karnataka (KA) of India. In each district one cluster (3-5 villages) will be identified for chickpea (CP) and pigeonpea (PP) demonstrations.

AP: 1 cluster for CP -- Manavapadumandal
1 cluster for PP -- Nagarkurnoolmandal (light soils) and Kodangal (Black soils)

KA: 1 cluster for CP Yet to decide from the following districts (Raichur, Mandvi, Devadur, Devargi, Gulbarga and Sedan)
1 cluster for PP

- 300 farmers in each cluster and each crop (CP or PP) per state will be covered per year to conduct demonstrations. Demonstration area is 1 acre per farmer.

- Baseline survey will be conducted in target areas using questionnaire supplied by ICARDA and baseline survey questionnaire will be made available to partners (Action : ChRR)

Output 2: Improved varieties tested and evaluated through on-farm participatory approach

- Farm facilitator will be identified and recruited locally with a remuneration up to Rs. 10,000/- (Ten thousands) per month to implement and monitor the project activities and demonstrations (50) personally, or hiring technical people will be done by respective partner universities based on their best experiences.(Action: partner institutions UAS, RARS)
- Soil sampling and analysis need to be conducted immediately in all the demonstration farms for developing soil health map of target areas and to provide optimum fertilizer and micro nutrient recommendations to farmers; analysis will be done at respective soil testing laboratories attached to Research stations or University. RARS Palem has to decide on the sending soil samples to UAS or conducting soil analysis at Hyderabad. (Action: partner institutions RARS)
- Update the information bulletins /flyers on improved cultivars and production technologies (CP and PP) in local languages and print them for distribution to farmers in the target areas for enhancing the awareness and knowledge of stakeholders. 3 logos (OCP, Partner institute and ICRISAT) must be printed on training materials and banners.
- There is no need to conduct farmer participatory varietal selection trials, the varieties already identified by the university/ICRISAT will be used in demonstrations in both the crops CP and PP and areas.

Output 3: Integrated crop management options refined and tested by farmers

- Fertilizer recommendations should be given based on soil analysis results. Hence collection of soil samples and analysis has to be done immediately.
- As soon as the farm facilitator identified, analysis of important nutrients (N, P. K, B, Zn, Fe, S, Mg) should be finished quickly as there is less time available to start kharif crop (PP).
- Follow best cultivation practices by supplying inputs to farmers for conducting demonstrations at respective states. One acre per farmer.
- Availability of seed of selected varieties for conducting demonstrations has to be provided by the receptive partners at different locations; the verities recommended for both the regions and crops are given below.

    - AP PP: PRG 158 (for light soils) plan in 200 ac
    - ICPH 2740 (for heavy soils) plan in 100 ac

- CP: JAKI 9218 or NBeG 3 (in desi); Vihar (kabuli)
- KA PP: PS 3R (for light soils) plan in 250 ac
- ICPH 2740 (for heavy soils) in 50 ac
  CP: JG 11. JG 14 ; MNK-1, (Kabuli), GBM-2

Agronomics practices:

- Spacing: Follow University recommendations for spacing, seed rate in each crop; for hybrids more spacing than varieties.
- Fertilizers: As recommended by respective Universities.
- Seed treatment: PP: Seed hardening with CaCl2 (2%) followed by *Trichoderma*treatment.
- CP: Use Rhizobium + PSB available at the university research stations. Make sure that the rhizobium inoculum is active in the supplied material especially if we buy it from private companies.
- Hydrogel: It is a Biopolymer made from cellulose which can act like a sponge that absorbs water from soil and releases slowly to the plant when it is required. It was developed at IARI. Cost of this product Rs 1600 per kg.
- General recommendation is 1-2 kg per acre; applied during land preparation along with the basal fertilizer. Need to irrigate the field after application of hydrogel, and this compound will be active for 1 year in the field and later on it degrades into the soil with no residual effect.
- Use of this hydrogel will help saving 50% of irrigations.
- In AP: For 50 demonstrations hydrogel will be applied in PP and in Karnataka 50% of demonstrations.
  Bio fertilizers - DNP:- 50 kg per acre @ Rs 595
- Micronutrients (Zn, Mn, Fe, B) - 1L - @ Rs 490
- The above nutrients are biological in origin.
- The above nutrients will be supplied at 50% subsidy by respective manufacturers. 25% of the price should be borne by the farmer and 25% by the project. Decision on using bio fertilizer in demonstrations is left to partner's decision.
- Herbicides: As recommended by respective partner Universities
- Pest management: IPM practices recommended by respective universities

Output 4: Functional village based seed delivery systems established

- Need to develop different seed systems for AP and KA.
- Mainly seed production of CP will be undertaken in this output; Isolation is required for PP (not feasible). An alternative locations need to be identified for seed production of PP.

Output 8: Backup research to enhance technology generation, includingIPM/ICM, crop improvement, adopted mechanization carried out

- Scientist at ICRISAT and partners will work on developing new elite breeding lines tolerant to biotic and abiotic stresses in CP and PP to continue the basic research required to help on-going activities of demonstrations.

Output 9: Capacity building and networking of all stakeholders achieved

- Training sessions will be conducted to farmers on different IPM practices, and specifically cultivation of PP hybrids at respective universities
- Exposure visit of scientists and selected farmers/NGO/KVK staff from one state to other and vice versa.
- Training sessions will be conducted by subject matter specialists of university as and when required during the project.
- Farmer days, Krishimela, Field days, visit to ICRISAT and other programs needs to be conducted to enhance the awareness among farmers about the improved cultivation practices of CP and PP.

Dr. ChRavinder Reddy presented reporting schedule comprising of timelines of project reporting, starting date, annual meetings, progress reports and financial statements submission dates, and nomination of representatives of partner institutions for project implementation and correspondence. A copy of the presentation was given to all participants for their reference.
The meeting concluded at 1630 hrs.

Annexure 4. Project activities covered in the media

రైతులు శాస్త్రవేత్తలు కావాలి

- ఇక్రిసాట్ ముఖ్య శాస్త్రవేత్త డాక్టర్ జీవీ. రంగారావు
- మొరాకో ప్రాజెక్టు కింద ఎంపికైన బొంరాస్‌పేట
- ప్రయోగాత్మక సాగుకు కింది విత్తనాల పంపిణీ

బొంరాస్‌పేట, న్యూస్‌లైన్:

వ్యవసాయంలో వచ్చే అధునాతన విధానాలను అవగాహన చేసుకొని సాగులో ప్రయోగిస్తూ శాస్త్రవేత్తలుగా కావాలని ఇక్రిసాట్ ముఖ్య శాస్త్రవేత్త డాక్టర్ జీవీ. రంగారావు అన్నారు. రాష్ట్రంలోనే నూతనంగా ప్రవేశపెట్టిన మొరాకో-ఇండియా పప్పు ధాన్యాల అభివృద్ధి ప్రాజెక్టుకు బొంరాస్‌పేట మండలం ఎంపికైంది. ఈ కార్యక్రమం ప్రారంభంలో భాగంగా గురువారం మండల పరిధిలోని తుంకిమెట్లలో ఏర్పాటు చేసిన కార్యక్రమానికి ఆయన ముఖ్య అతిథిగా హాజరై మాట్లాడారు. సాంప్రదాయ పద్ధతులు, వంగడాలకు స్వస్తి చెప్పి అధిక దిగుబడులు పొందే ఆధునిక పద్ధతులు, హైబ్రిడ్ రకాలను సాగు చేసి వాటిలోని సాదకభాధకాలను తెలుసుకొని మరెంద రికో ఆదర్శంగా నిలువాలని సూచించారు. ఈ ప్రాజెక్టు కింద మండలంలోని తుంకిమెట్ల, చిల్మల్‌మైలారం, నాగిరెడ్డి

మాట్లాడుతున్న ఇక్రిసాట్‌శాస్త్రవేత్త డాక్టర్ జీవీ. రంగారావు

విత్తనాలను రైతులకు అందజేస్తున్న శాస్త్రవేత్తలు, అధికారులు

పల్లి, నాందార్‌పూర్, చౌదర్‌పల్లి గ్రామాల్లోని 150 మంది రైతులను ఎంపిక చేసినట్లు చెప్పారు. ఈ రైతులతో రానున్న 5 సంవత్సరాల్లో కందిలోని హైబ్రిడ్ రకాల సాగు చేయించనున్నట్లు చెప్పారు. హైబ్రిడ్ రకం ఐసీపీహెచ్ 2740రకం కంది విత్తనాలను రైతులకు ఉచితంగా అందజేశారు. మూడు సంవత్సరాల్లో 6వేల మంది రైతులను హైబ్రిడ్ సాగు రైతులుగా వ్యాప్తి చేయనున్నట్లు రానున్న కాలంలో ప్రతి గ్రామంలోని రైతు హైబ్రిడ్ రకాలను సాగు చేసి లాభం పొందేందుకు లక్ష్యంగా ఈ కార్యక్రమాన్ని అమలు చేస్తున్నట్లు చెప్పారు. వ్యవసాయ బోర్ల కింద రెట్టింపు దిగుబడి పొందవచ్చునని అన్నారు. రైతులు వ్యవసాయంపై శ్రద్ధ వహించి కొత్త పద్ధతులను పాటిస్తే శాస్త్రవేత్తల కన్న అధికంగా పండించవచ్చునని తెలియజేశారు. ఈ కార్యక్రమం కింద ఎంపికైన రైతులు అందజేసిన హైబ్రిడ్‌రకం కందిని ప్రయోగాత్మకంగా సాగు చేయాల్సి ఉంటుందన్నారు. నిత్యం శాస్త్రవేత్తగా పరిశోధించి సాగు చేయాలని సూచించారు. హైబ్రిడ్ రకాన్ని ప్రోత్సహిస్తూ ఆహార పప్పు ధాన్యాలను విస్తరించేవిధంగా కృషి చేయాలని రైతులకు సూచించారు. రంగారెడ్డిజిల్లా తాండూరు వ్యవసాయ పరిశోధన కేంద్రం శాస్త్రవేత్త డాక్టర్ సుధాకర్ వర్షాధార భూముల్లో కంది పంట సాగు, యాజమాన్య పద్ధతుల గురించి వివరించారు. మొక్కల సాంద్రత, పూత దశలో పదును పెట్టడం, ఎరువుల వాడకం, పోషకాల యాజమాన్యం, కలుపు నివారణ వంటి పద్ధతుల గురించి క్షుణ్ణంగా వివరించారు. కంది సాగులో ఎదుర్కొంటున్న సమస్యలను, తెగుళ్లను రైతులు శాస్త్రవేత్తలను అడిగి తెలుసుకున్నారు. పండించిన పంటలకు మార్కెటింగ్ సౌకర్యాన్ని కూడా మరింత సులభతరం చేసేందుకు ప్రభుత్వం చర్యలు తీసుకుంటుందని కోస్గి మార్కెట్ కమిటీ చైర్మన్ వెంకట్రాములుగౌడ్ అన్నారు. మొరాకో ప్రాజెక్టును విజయవంతంగా పూర్తి చేసేందుకు రైతులు సహకరించాలని జేడీఏ రామరాజు తెలియజేశారు. ఇందులో మొరాకో ప్రాజెక్టు కోఆర్డినేటర్ డాక్టర్ రవీందర్‌రెడ్డి, ఏడీఏ జాన్ సుధాకర్, వ్యవసాయాధికారిణి అరుణ, ఆదర్శ రైతులు నర్సయ్య, నర్సింహులు, నసీర్‌మియాతోపాటు ఆయా గ్రామాల రైతులు పాల్గొన్నారు.

సాక్షి

వ్యవసాయం వ్యాపారంగా మారాలి

బొంరాస్‌పేట న్యూస్‌లైన్

- మొరాకో ప్రాజెక్టు కో-ఆర్డినేటర్ రవీందర్‌రెడ్డి
- పప్పు ధాన్యాల అభివృద్ధి ప్రాజెక్టు ప్రారంభం

మాట్లాడుతున్న రవీందర్‌రెడ్డి