Government of Karnataka-ICRISAT **Initiatives**

Review and Planning Workshop Proceedings

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Organizing Committee

SP Wani (Chair)

KH Anantha

Girish Chander

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Government of Karnataka-ICRISAT Initiatives

Review and Planning Workshop Proceedings

28 February – 2 March 2013

ICRISAT, Patancheru, India

Editors

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ICRISAT, Patancheru

PROGRAM

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Rapporteur *Girish Chander*

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1740–1750	Chair's remarks	KV Raju	
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Friday, 01 March 2013

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Rapporteur *Girish Chander*

0900–0905	Welcome	
0905–0920	Overview of Bhoochetana progress and learnings	Suhas P Wani
0920–0935	Challenges faced for mobilizing inputs and solutions	KV Sarvesh
0935–0950	Capturing data from crop cutting experiments in state production	KV Raju

0950–1005	Recommendation of the BC2 Kharif plan workshop held at Belgaum on 28th Jan 2013	BK Dharmarajan
1005–1050	Discussions	
1050–1100	*Health break*	

Session 7 **Technical Session IV: Sharing of Experiences from Districts: Innovations, Learnings and Challenges**

Chair *Shankarlinge Gowda*
Rapporteur *Mukund D Patil*

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Presentation by ADAs

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1215–1230	ADA, Saundatti taluk, Belgaum district	
1230–1300	Discussions	
1300–1400	*Lunch*	

Session 8 **Technical Session V: Bhoochetana Mission Program (BCMP-BCIP)**

Chair *KV Raju*
Rapporteur *Gajanan L Sawargaonkar*

1400–1420	What is new in Bhoochetana II	Suhas P Wani
1420–1445	Bhoochetana II: Challenges and opportunities	KV Sarvesh
1445–1505	Improved new cultivars seed introduction strategy	K Anandakrishna
1505–1530	Health break	

Session 9 **Technical Session VI: Group Work**

Chair *BK Dharmarajan*
Rapporteur *KH Anantha*

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	Group 2: Capacity building: Innovative extension and awareness building	MA Shankar
	Group 3: Documents and dissemination	Krishna Naik
	Group 4: Convergence to enhance impact and data recording	BK Dharmarajan
	Group 5: Climate change network (invited group meets for monitoring and evaluation, convergence, acceleration of space etc.,)	VS Prakash
	Group 6: Seed Production Action Plan with special reference to new cultivars	Siddaraju & Anandakrishna
1730–1930	Get-together and experience sharing	IMOD Plaza

Saturday, 02 March 2013

0900–0915	Overview of the Day 2	
0915–1030	Group reporting and discussion	
1030–1100	*Health break*	

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Chair *KV Sarvesh*
Rapporteur *KL Sahrawat*

1100–1300	District plan compilation and finalization, taluk-wise crops, areas, inputs, farm facilitators etc.	
1300–1400	*Lunch*	
1400–1500	Group presentation	
1400–1410	Group 1: Inputs requirement	
1410–1420	Group 2: Capacity building: Innovative extension and awareness building	
1420–1430	Group 3: Documents and dissemination	
1430–1445	Group 4: Convergence to enhance impact and data recording	
1445–1500	Group 5: Climate change network	
1500–1530	*Health break*	

Session 11 Concluding Session

Chair *KV Raju*
Rapporteur *K Krishnappa*

1530–1545	Vision of agricultural development in Karnataka through Bhoochetana II and CGIAR initiative	KV Sarvesh
1545–1555	Chair's remarks	KV Raju
1555–1600	Vote of thanks	KH Anantha

Background

Karnataka is the largest dryland agriculture state in the country with 60% of its population dependent on agriculture for their livelihoods. For improving the livelihoods of small farm holders in the state by increasing agricultural growth rate, Government of Karnataka launched in 2009 a mission program "Bhoochetana" for bridging the yield gaps through science-led interventions. The goal of this mission program is to increase average productivity of selected crops in the 30 districts by 20% in four years. The specific objectives are: (i) to identify and scale-up best-bet options (soil, crop and water management) including improved cultivars to enhance productivity by 20% of the selected crops in selected 24 (later extended to 30) districts; (ii) to train DoA staff in stratified soil sampling at villages, analysis of macro- and micronutrients, preparation of GIS-based soil maps; and (iii) to guide DoA to establish high-quality soil analytical laboratory at Bengaluru and to undertake stratified soil sampling, their analyses and sharing results in nine districts; and (iv) to build capacity of the stake holders (farmers and consortium partners) in the sustainable management of natural resources and enhancing productivity in dryland areas.

During the year 2012, a Review and Planning Workshop for the Bhoochetana and Government of Karnataka, a CGIAR initiative (Bhoochetana Plus) was held at ICRISAT during July 2012 at Patancheru. Based on the success of the Bhoochetana, during the last four years (2009-2012), Government of Karnataka has undertaken a holistic integrated systems approach for converging all sectors of agriculture namely rainfed agriculture, irrigated agriculture, horticulture, livestock, cooperation and marketing, for enhancing the incomes of the farmers with technical backstopping by ICRISAT-led consortium of eight CGIAR institutions. The institutions are International Water Management Institute (IWMI), International Livestock Research Institute (ILRI), International Rice Research Institute (IRRI), International Maize and Wheat Improvement Center (CIMMYT), International Center for Agricultural Research in the Dry Areas (ICARDA), The International Food Policy Research Institute (IFPRI), The World Agroforestry Centre (ICRAF). The World Vegetable Center (AVRDC), state agricultural and horticultural universities and different line departments of Government of Karnataka also partnered. This GoK-CGIAR initiative is referred as "Bhoochetana Plus". Following planning workshops in Bengaluru, Karnataka and Patancheru, Andhra Pradesh, detailed planning for four benchmark sites namely, Tumkur,

Raichur, Chikballapur and Bijapur was conducted along with Bhoochetana workshop. In all, 250 participants representing Department of Agriculture officials from 30 districts along with headquarter officials including Shri. SV Ranganth (CS), Shri. Kaushik Mukherjee (ACS&DC), Dr. KV Raju, Economic Advisor to Hon'ble CM, Shri. Shankarlinge Gowda, Principal Secretary (Ag&Hort), Shri. GVK Rau, Principal Secretary (Co-op), Shri. V Chandrasekhar, Commissioner (Ag), Dr. KV Sarvesh, Director (Ag) and Dr. SA Patil, Chairman, Karnataka Krishi Mission, district CEOs along with the representatives from DoA Karnataka, CGIAR institutes, AVRDC, State Universities, Corporates, NGOs, Farm Facilitators (FFs) and farmers participated in the workshop. The executive summary of Review and Planning workshop has been put together.

Snap Shots of Workshop Deliberations

Inaugural Session

During the three days Review and Planning meeting, the progress of GoK-CGIAR initiative during last one year and the Bhoochetana during the last four years along with detailed planning for the GoK-CGIAR initiative and Bhoochetana Mission Program (Bhoochetana II) were deliberated and finalized. The workshop reviewed key drivers of success and identified critical areas for building on earlier successes during the Bhoochetana II which included strategies to address climate related risks and improve livelihood.

1. Dr Peter Craufurd welcomed the dignitaries (M/S. SV Ranganath, IAS, Chief Secretary, Kaushik Mukherji, IAS, Additional Chief Secretary & Development Commissioner, Dr. KV Raju, Economic Advisor to Hon. Chief Minister of Karnataka, M/S. Shankarlinge Gowda, IAS, Principal Secretary (Ag & Hort), GV Krishna Rau, IAS, Principal Secretary (Cooperation), V Chandrasekhar, IAS, Commissioner (Agriculture), Dr. KV Sarvesh, Director (Agriculture) and Dr SA Patil, Chairman, Karnataka Krishi Mission, district CEOs, JDAs and ADAs of all the districts, Farm Facilitators, representatives of SAUs, CGIAR centers, private corporates, and ICRISAT team members.

2. Dr Suhas P Wani presented in a nutshell the journey during the last four years of Bhoochetana implementation, identified the drivers of success, key areas which need to be built further such as strengthening of farm facilitators which is a novel mechanism to reach millions of farmers, inputs delivery system, data recording, effective convergence

and establishing climate change researchers network in the state, inclusive livelihood approach and value addition for linking farmers to the market. The progress of baseline characterization of the selected four benchmark sites for the GoK-CGIAR initiative (Bijapur, Raichur, Tumkur, and Chikmagluru) and detailed plan of works to be undertaken by different CGIAR partner institutions where also briefed.

3. Mr Kaushik Mukherji appreciated the benefits of Bhoochetana and stressed the need to strengthen extension system for sustaining Bhoochetana possibly through public private partnerships and address the challenges during the Bhoochetana II. Mr Kaushik Mukherjee raised queries about the *ex-ante* benefits (additional household income) from the project and it was clarified and agreed to revisit the analysis to examine the higher level of benefits from the initiative.

4. Dr William D Dar, Director General of ICRISAT appreciated Bhoochetana initiative and acknowledged different stakeholders during his opening remarks. Dr Dar congratulated the DoA team for their hard team work as well as team led by Dr Wani for impressive achievements of Bhoochetana. Dr Dar noted that Bhoochetana has played a crucial role in inclusive market oriented development of farmers in Karnataka. It has not only improved the livelihoods of farm families but also enabled them to manage risks like droughts by building resilience in production systems.

5. Dr Sarvesh stressed the importance of collective action in Bhoochetana I for operationalizing the holistic solution at farm level and challenge to improve the timely supply of quality inputs to cover all 7.4 m ha in the state, Mr Chandrashekhar, highlighted the importance of holistic approach, Dr SA Patil, highlighted the need to ensure regular/ sustainable income for the farmers. Mr Shankarlinge Gowda identified the missing link of farmers to the market and suggested due attention should be given to address the missing link for sustainability.

6. Mr SV Ranganath, Chief Secretary, lauded the success of Bhoochetana which enabled Karnataka to achieve 5-6% annual growth rate in agriculture during last four years as compared to stagnant 2% growth and appreciated efforts of the ICRISAT and DoA team. He stressed the need to address the missing links in the system like livestock, horticulture, agro-forestry and market linkages. He also identified persistence, persuasion and ensuring inclusiveness of small farmers in

agricultural development as the drivers of Bhoochetana's success. He also ensured full support and help of GoK for the Bhoochetana II and GoK CGIAR initiative. He recommended to name GoK-CGIAR initiative as Bhoochetana Plus**.** He emphasized on the need to strengthen involvement of private players in extension system and also address the issue of reducing the gap between rural and urban incomes for reducing migration.

Technical Session

7. In the Technical Session I, co-chaired by Dr KV Raju and Mr Kaushik Mukherjee, a detailed presentation on baseline characterization including GIS layer maps of four benchmark sites for Bhoochetana Plus was given by Dr Suhas P Wani along with different activities to be undertaken. Detailed discussion took place on the ex-ante economic benefit analysis and suggested that benefits from Bhoochetana Plus will be far more than projected, though, it was indicated that conservative calculations are made with adoption ceilings and ground realities. Dr KV Raju appreciated the progress made by the partner institutions and suggested to identify specific interventions with measurable monitoring indicators with timeline. The role of SAUs was clarified and made it clear that the SAUs are involved in all the programs at various levels. They were appreciated for their participation in taking science-led approach to the farmers' doorstep.

8. In the parallel sessions on convergence, inputs, capacity building, interventions and demonstrations, and public private partnerships (PPP) for extension were deliberated by the groups. The PPP session was for the private corporate representatives and the group discussion was steered by Kaushik Mukherjee and KV Raju with support from Dr Suhas Wani. During the discussions presentations were made by the corporate representatives and what is expected by the GoK was highlighted. It was stressed that the extension bundled with inputs supply and machine hiring is expected and payment need to be based on performance and partial recovery of charges from the farmers as per the GoK guidelines. Suggestions were sought from the private corporate on what they can provide, what they expect from the government and how it can be made an exemplar system in the country.

9. Drs Siddaraju/Subbaiah presented the summary of discussions from the Inputs Mobilisation group including Machinery with the salient recommendations being: to ensure timely inputs availability focus on assessment of requirement finalisation of rate contract; indenting ; ensuring quality; adequate godown facilities and timely payment to the vendors. It was agreed to have all inputs in place 15 days to 1 month before actual start of the season. Dr BK Dharmarajan summarized the recommendations from the Convergence group, which suggested establishment of state, district and taluk level committees to plug issues in convergence of on-shelf technologies and demonstration, supply of inputs, credit linkage, integrated farming system, farm mechanization, micro-irrigation, capacity building, post-harvest technologies, value addition, and market linkages. Capacity building group led by Shankarappa suggested to consider the existing constraints in benchmark sites, to follow improved production technologies, use of natural resources and external inputs, post-harvest technologies, and market information. Dr Prabhakara Setty for interventions/demonstrations group suggested output oriented interventions with measurable monitoring indicators. The potential interventions suggested include soil-water conservation and management, productivity enhancement, increasing labour efficiency, increasing livestock productivity, nutritional insecurity, and market linkages, etc.

10. On second day, Dr Suhas Wani presented detailed synthesis of Bhoochetana progress during four years and stated that area coverage increased progressively from 0.2, 1.2, 2.85 to 3.73 m ha by 2012-13 with impressive yield gains of 23 to 66 per cent over farmers' practice. Even during the low rainfall years during 2011 and 2012, yield gains saw 25-38% increase and touched lives of 3.6 million families particularly small and marginal farmers. Soil mapping was completed, soil health information was effectively shared with all the stakeholders and use of balanced nutrient management including use of micronutrients was promoted amongst the farmers as entry point. In addition, crop diversification like castor in Kolar, coriander and pigeonpea as intercrop were introduced which significantly raised farmers' incomes. Various farmers' success stories have been compiled in a book and released. An economic assessment showed increased economic value to the tune of ₹ 646 crores in Karnataka due to adoption of improved management under Bhoochetana. This initiative

is now widely publicized at international and national fora. Key drivers of success identified are:

- Convergence, collective action, capacity building and consortium approach
- Holistic and integrated approach
- Effective monitoring and evaluation
- Innovative extension system using farm facilitators and lead farmers
- Champions at policy level
- Working passionately and persistently
- Tangible economic benefits for small farmers (inclusiveness)
- Broke vicious cycle of supply driven approach

11. Dr Sarvesh, recommended to strengthen the concept of FFs through quality assuarance and effective monitoring on weekly basis by the ADAs, communicating deliberations from the Video Conference (VC) to FFs, replacing new cultivars, timely reporting, and on-line communication with inputs supplying companies.

12. Dr KV Raju highlighted the challenges of crop cutting experiments (CCEs) and inclusion of CCE's data in to state statistics. A committee consisting of representatives from revenue department, RDPR department, watershed department, along with agriculture and DES is constituted to report within one month. He sought suggestions from the house to incorporate in the ToRs of the committee.

13. Dr Dharmarajan presented the recommendations of the Bhoochetana II Kharif plan workshop held at Belgaum on 28 January 2013.

- During kharif plan 50 lakh ha rainfed area plus 6 lakh paddy area and 2 lakh sugarcane area are targeted.
- Establishment seed villages and agri machinery hiring centers in the villages.
- For FFs minimum qualification recommended is 10th standard (SSLC) and need to be engaged for 180 days during *kharif* season and 270 days for *kharif* and *rabi* seasons.
- The area per FF will be 500 ha in all areas and they receive the honorarium and not salary; their honorarium may be increased to ₹ 200 against 150 per day.

- All FFs to be provided with similar T shirt, cap and a bag from the centralized place.
- Two Lead Farmers are recommended per FF for 15 days.
- All existing trainings to continue along with two additional days for all FFs/extension agents on climate change.
- Current wall writings to continue, but other possible means such as tractors etc. may also be used for dissemination of Bhoochetana information. The information must be crisp and eye catching.
- Establishment of district level technical committee with JDA as chairman and DWDO, DDA, KVK head, ICRISAT scientist as members for convergence and monitoring.
- Establishment of demonstrations in 5 ha per hobli @ ₹ 2,000 ha^{-1} under KVK scientist
- Conduct of exposure visits for 50 farmers/extension workers in the neighboring districts @ ₹ 25,000 per visit
- Studies on climate resilient agriculture to be undertaken and pilot the ICT Tablet-based extension system in a few districts.
- Setting up of kiosks in the districts.
- Incentives and awards for good farmers, FF's and extension officers along with competitions for farmers

The estimated budget is ₹ 172 crores. Dr Dharamarajan listed the responsibilities as under:

- ICRISAT – technical recommendations, reports and climate studies
- KSNMDC – climate studies
- KSSC – seed production
- Universities – guidance for kiosks, crop research and recommendations, capacity building through KVK's
- DoA – guidance for crop cutting experiments.

14. The innovative extension system established by the DoA in Karnataka need to be nurtured properly and made sustainable through ensuring quality, close monitoring, taking precautions that this cadre remains as honorary cadre and does not proliferate. There is an urgent need to converge FFs of various departments to avoid over populating the FFs in villages. There is need to internalize that FFs are paid honorarium and not the salary as they are not full time service providers. Also there

is need to build their capacity and ensure quality support delivery for the farmers.

15. Joint Directors of Agriculture (JDAs) of Mysore, Bidar, and Bellary districts and Assistant Director of Agriculture, Hassan highlighted best practices adopted in their districts for Bhoochetana.

- In Mysore district Bhoochetana rally during Dassera festival proved quite effective for dissemination along with seed treatment campaigns and farmers' field schools. Crop diversification with maize in place of paddy covered 5,446 ha with 3,630 farmers resulted in additional income of ₹ 12,000 ha^{-1}. Similarly, introduction of maize in tribal area (538 ha) of Hunsur taluk have generated net profit of ₹ 32,000 ha^{-1}. For rice farmers, mechanical rice transplanter was introduced to address the problem of labor shortage.
- JDA Bidar indicated well distributed rainfall during 2012 resulted in good agricultural productivity with increase of 30%. He told that farmers have realized the importance of soil-test based fertilizer application and following integrated nutrient management method. Sugarcane farmers have adapted drip irrigation system to improve water use efficiency. *Krishi Raths* showed greater reach and impact on the information sharing among farmers. Need for increased involvement of KVK Scientist & Watershed Department with effective Convergence of different dept Schemes with Bhoochetana was highlighted.
- JDA Bellary highlighted the need for timely actions for CB, inputs delivery. A big achievement during 2012 *kharif* season was that the crop yield increased in the range of 17 to 45%.
- Assistant Director of Agriculture, Hassan shared experiences of Bhoochetana initiative in the district and pointed out that regular capacity building training programs helped FFs and lead farmers to act as effective extension agents. The regular awareness programs and publicity strategies worked well in spreading the awareness and information about the program.

16. In the Technical session V, Suhas Wani highlighted the vision of Bhoochetana Mission Program (BCMP) and mentioned that the focus is on sustainable improvement of livelihoods of small and marginal farmers in the state by developing farmers' centric, science-led inclusive market-oriented integrated farming systems participatory development approach. The objectives of Bhoochetana II Mission Program are:

- Strengthening the Bhoochetana consortium for increasing the crops (irrigated and rain-fed) yields by 20 per cent in five years in 30 districts of Karnataka through science-led development and new innovation systems;
- Strengthening the institutional mechanisms such as seed villages, village seed banks, participatory research for development (PR4D), inputs supply, agricultural machinery hiring centers, farm extension through farm facilitators and communication systems for small and marginal farmers in the state for the DoA through capacity development, convergence, collective action, and partnerships;
- To assess the impact of climate change in different agro-eco regions of the state in terms of anticipated shifts in the crop growing periods, water availability, major crop yields, and evaluate adaptation strategies for developing climate resilient farming systems; and
- To document the process of consortium functioning, learning, and impact of BCMP in terms of increased crop yields, institutional development and capacity building of different stakeholders in the state.

17. He urged all the stakeholders and policy makers to make this initiative a grand success, by harnessing the positive energy generated in the DoA and to adopt and institutionalize the science-led development approach in the state. Strengthen the consortium and linkages with SAUs e.g. India-EU Project, Indo-US, special projects etc. He also felt that small farm holders should be treated as equal partners through inclusive growth and there is an urgent need to develop sustainable agricultural practices considering the vulnerability of the fragile rain-fed agro-ecosystems while intensifying the systems. Similarly, he stressed that we need to enhance not only the productivity but also should focus on enhancing incomes, linking farmers to markets, improving nitrogen use efficiency (NUE) and water use efficiency (WUE) besides better soil health management.

18. The new initiatives in the second phase of Bhoochetana are to assess the impact of climate change in different agro-eco regions of the state in terms of anticipated shifts in the crop growing periods, water availability, major crop yields, and evaluate adaptation strategies for developing climate resilient farming systems. He also expressed that we need to identify and train suitable team members from the SAUs and form a Climate Change Team (CCT) at state level to handle assessment of impacts of climate change at micro level in a coordinated manner. He also highlighted that Climate Change Network will assess the

impacts in the state through collating the historical weather data sets, soils information and quality checking and assessing the impacts of climate change on changes in the agro-eco regions in the state, crop growing period, crop yields, and identify suitable crops as adaptation strategy to cope with the impacts of climate change. He stressed need for climate resilient agriculture and evaluation of suitable strategies in the benchmark locations of the target agro-eco regions in the state and develop awareness amongst the farmers in the state about the potential impacts of climate change on their crops and livelihoods and potential adaptation strategies based on the results of the participatory evaluation of adaptation strategies in the bench mark locations. He emphasized better convergence among all the stakeholders and need for strengthening of new extension system through farmer facilitators. Piloting of innovative Tablet-based as well as farmer to farmer videos using Pico projectors are also proposed as new interventions.

19. Mr. Rikin Gandhi from Digital Green described the role of 'Social Networks for Agricultural Development'. He shared his experience of shooting 5-10 minutes videos of the farmers, basically to share their views and experiences about agriculture for the (other) farmers. This 5-10 minutes shoot will be useful in showcaseing through battery operated small Pico projector to other farmers about getting practical information about any particular technology besides giving them a chance of having ownership in the project. He informed that they have plan to train 4-6 people in each group (either SHGs or others) about its handling and usage.

20. Improved new cultivars – seed introduction strategies in state was described in detail by Dr Ananda Krishna K, Managing Director, Karnataka State Seeds Corporation. He elaborated the concept of introducing and promoting new varieties and hybrids in the market and also highlighted strategies/steps involved in introducing new cultivars. He discussed existing situation in public sector and in today's context he pointed out that there is need to have i) varietal replacement perspective plan – for a period of 5/10 years, ii) planning for product development strategies. iii) monitoring for new variety development and replacement, iv) institutional mechanisms and working together by DOA, SAUs and SSCS.

21. During presentation by the group leaders the difficulties in pre-positioning of new crop varieties like paddy, groundnut, soybean,

red gram and green manuring crop seeds, lack of storage in Hassan, Dakshina Kannada and Yadgir were highlighted. Cooperative societies could be rolled in to reduce the burden on DoA.

22. As regards to capacity building, group leader told to effectively use video conferencing for experience sharing; to have satellite-based training program; establish electronic display boards at GPs; farm schools; issue regular press releases; services of local TV channels; video shows; street plays; Krishi Melas; distribute CDs on crop and farm enterprises; effective extension literature and acknowledge achievers.

23. The group leader on documentation and dissemination suggested having one handicam per taluk. Group suggested using radio, TV local channels, mobile messages, etc., for effective dissemination. The group also pointed the idea of having a slot in online farmers' query call centers. The Convergence group leader suggested to have district and taluk level committees to plug issues in convergence. The areas targeted for convergence included seed production, fodder production, capacity building, farm mechanization, micro irrigation, post-harvest technologies, market linkages, and credit linkages.

24. The group leader on climate change suggested adaptive strategies and group leader on seed production expressed need to replace absolute varieties and suggested to have SAU's concerned breeder to inspect seed production farms. There was a need to subsidize regulation and inspection charges and provide incentives to popular and new varieties.

25. During the centenary year of the DoA it was suggested to provide Tablets for ICT-based dissemination and collection of data up to ADAs for BC II. Dr Sarvesh also stressed the need to enhance the efficiency and effectiveness in implementing Bhoochetana during the second phase.

Concluding Session

26. During the concluding session, in order to bring competitiveness and efficiency in Bhoochetana, Dr. Wani announced awards from ICRISAT side for the leading blocks/taluks in respect of developing 1,000 ha as climate smart benchmark site and develop suitable interventions. Some of the interventions proposed are:

- Glyricidia plantation
- Soil water conservation (*In-situ*, Land form treatment, contour farming)

- Convergence (MGNREGA)
- Vermicomposting
- New cultivars
- New extension system
- Documentation
- Conduct of Farmers day
- Crop replacement
- SRI, Direct seeding
- Market linkages
- Value addition
- Seed production/Seed bank
- Crop cutting experiment
- Fodder production
- Micro-irrigation
- Bio-fertilizer
- Any other climate change interventions

The program ended with vote of thanks by Drs Sarvesh (DoA, Bengaluru) and Anantha (ICRISAT).

Workshop Deliberations through Lens

Inaugural Session

Sri SV Ranganath, Chief Secretary, GoK, delivering the Inaugural address.

Dr William D Dar addressing the participants and highlighting the hard work of Bhoochetana team

Participants at the planning and review workshop

Suhas P Wani presenting the brief progress of the Bhoochetana during the last four years.

Sri KV Sarvesh, Director, DoA addressing the participants.

WD Dar presenting the memento to Chief Secretary Sri SV Ranganath.

Dignitaries releasing the BC Success Stories book and Directory of BC team.

Technical Session

Drs Kaushik Mukherji, Suhas P Wani and KV Sarvesh clarifying the doubts for the team members

Sri V Chandrasekhar, Commissioner, DoA, addressing the participants.

Dr GVK, Rao addressing the participants on market linkages.

Dr. Kaushik Mukherji addressing the participants.

Dr KV Raju addressing the participants

KV Raju presenting the award to Mr CM Patgar, AAO Mirjan RSK.

Dr Suhas P Wani along with Mr. Kemparaju, JDA, Uttara Kannada clarifying doubts.

Participants listening to the presentation.

Group Discussion

Participants discussing in group as part of group activity.

Field Visit

Participants visiting the watershed development at ICRISAT campus

Group Photograph

GoK-ICRISAT Initiatives
Review and Planning Workshop:
Bhoochetana II and GoK-CGIAR Initiative

28 February – 2 March 2013
ICRISAT, Patancheru, AP, India

Approved Proceedings

Proceedings of the Bhoochetana State Level Co-ordination Committee Meeting

Held on 19th March 2013

Members present: List Enclosed

At the outset, Additional Chief Secretary and Development Commissioner welcomed the participants. Detailed discussions were held regarding converging activities of Departments of Horticulture, Watershed Development Department, Sericulture, and Animal husbandry and Veterinary Services for integrated development of farmers.

Director of Agriculture presented the proposed implementation guidelines for the year 2013-14 in detail with modifications in some components and some new components.

After detailed deliberations, the guidelines for implementing Bhoochetana during the year 2013-14 were approved as below.

- Utilizing the services of farmer facilitators for a period of maximum of 180 days in Kharif season predominant districts in dry land area and for irrigated paddy. In districts with both Kharif and Rabi seasons predominant District sugarcane area, duration of work will be max of 270 days @ Rs 175 per working day.
- Two lead farmers per farmer facilitator @ Rs. 100 per day for 15 days.
- One Science graduate/Diploma holder in Agriculture or allied fields with computer knowledge per hobli @Rs 8000 per month for six months in kharif season predominant districts and Paddy areas, Nine months for kharif+Rabi crop season districts & Sugarcane crop area.
- Two days training to all extension officers on Farmer Field School and climate change studies in addition to existing trainings/workshops.
- In addition to wall writings, captions can also be written on tractors and other hitech machineries about Bhoochetana Programme.
- Formation of District level Technical Core Committee with Joint Director of Agriculture Department as convener and members will be DRCS, DSO, DWDO, DDH, JD (Sericulture), DD (A&H), DDA (DATC), ADA (SMS/HQ), KVK Head/ICRISAT Scientist/Any one Taluk ADA and other co-opted

members to be decided at district level. The committees to scrutinize and approve the district action plan, Review and recommend modifications based on local problems/recommend innovative technologies for adoption. Action plan should be prepared how to converge the extension officers in Bhoochetana and their role.

- To form a similar committee at Taluka level with concerned Departments.
- To layout a model 5 ha Bhoochetana technology demonstration per hobli @ Rs.2000/ha. Under the supervision of KVK Scientist. Field days to be conducted in these demonstration plots on priority.
- Two days exposure visit to other districts for a batch of 50 comprising of extension officers, farmer facilitators and farmers @ Rs 25000 per visit.
- 10. Seed production plan with specific action plan for introduction of new varieties to be drafted by KSSC in consultation with other major seed producing agencies like KOF, NSC, and also district technical core committee
- To finalize action plan for climate change resilient studies in consultation with KSNDMC and State Agriculture and related Universities and also to design the lesson plans for training programmes on climate change studies. (Action: ICRISAT)
- ICT Tablets will be distributed to all 747 Rsks, talukas and districts for ICT Tablet based extension networking. ICRISAT to monitor this pilot extension and procurement of these ICT Tablets will be through ICRISAT. Pico Projectors will also b distributed.
- To Set up of information Kiosks in Tumkur, Raichur, Bijapur and Chickmagalur districts in remote taluka headquarters and these Kiosks to be run and monitored by the Universities.
- Incentives/Awards for best performing farmers/farmer facilitators/ Extension officers/ Farmer Field Schools.
- Creative component: To conduct competitions for farmers from village level to state level.
- Introduction of other innovative components like formation of commodity groups for market linkages in the model of SFAC, Providing pico projectors and other AV aids to RSK's for documentation and message dissemination.
- Purchase of T-shirts, Bags and caps for Farmer facilitators under publicity component.
- To continue other components as per 2012-13 guidelines.

- Budget Requirement will be met out of funds under Integrated Agriculture Extension System, Soil Enrichment Programmee , Rashtriya Krishi Vikas Yojane and also by converging funds under other ongoing schemes.
- Roles and Responsibilities: Annexure-1.

Other decisions/suggestions in the meeting are;

- In the identified IWMP areas, Bhoochetana action plan to be prepared based on watershed areas.
- Extension personnel of Watershed Development department, Horticulture department etc., including NGOs or farmer representatives associated with activities of various agri related departments to be involved for all Bhoochetana activities. Concerned Departments to issue necessary orders in this direction.
- A note on possible convergence of various activities of watershed development department to be submitted to Additional Chief Secretory and Development Commissioner. (Action: Commissioner for WDD).
- Net planning of taluk Water shed development department to be finalized in consultation with the Dept of Agriculture.
- Micronutrient requirements of horticulture crops and supply programme by the Department of Horticulture to be prepared and communicated to the committee
- To take Bhoochetana beneficiaries list and link fertigation benefits and also sapling distribution. .(Action: Director, Horticulture Department)
- Specific roles of allied departments to be elaborated in consultation with the concerned departments (Action: ICRISAT).
- RSK's to function as single extension point at Hobli level for departments of Horticulture, Watershed Development Department, Animal Husbandry &Veterinary Services, Sericulture, Fisheries, Agriculture Marketing, Social Forestry and other agri related departments.
- Concerned Departments to issue necessary orders so that on a particular day all extension officials sit in RSKs, atleast once in a week and are available to farmers at RSK.
- Universities to attach students for a period of two months to all RSKs. Universities to communicate names and contact numbers of all students attached to RSK's to all agri & allied departments.

- One Scientist to be nominated for 10 RSK's and their names with contact numbers to be communicated to all agri allied departments.
- A common multi department extension training curriculum to be developed by ICRISAT in consultation with SAU's by 15th April 2013. This manual will be circulated to extension personnel of agri & allied departments and an online test will be conducted on 31st May 2013. (Action: Director of Agriculture)
- Thousand good performing societies/farmer groups to be selected across all the talukas. (Action: Secretary, Co-Operation)
- These society/groups to be linked to nearby RSKs. These society/groups trained on farmer extension services and would be expected to deliver extension and related services like custom hiring, input distribution etc.,
- These society/groups should also function as local produce procurement centres which would take the responsibility of providing further forward market linkages.
- Selected society/groups to be trained on grading, sorting and value addition (both agri and horticulture produce) at gross root level to help farmers to fetch better price for their produce.
- Quality standards for grading of four to five important fruits and vegetables to be drafted in consultation with AVRDC.
- A notification to be issued in this regard at the earliest (Action: Director, Horticulture Department.)
- Good performing Farmer Field School group may be converted into commodity groups and these may also be considered to perform procurement, grading and processing activities.
- All agriculture related departments may give their publicity messages for display on hoardings at RSK.

Meeting was concluded with vote of thanks.

Sd/-

Additional Chief Secretary &
Development Commissioner,
Govt. of Karnataka

List of Members Present in Bhoochetana State Level Co-ordination Committee Meeting held on 19-03-20123

Additional Chief Secretary & Development Commissioner, GoK- In Chair

1. Shri Krishna Rao, **IAS**, Principal Secretary, Co-operation Dept.
2. Shri Bharatlal Meena, **IAS,** Principal Secretary, Agriculture.
3. Shri Shankar Linge Gowda, **IAS**, Principal Secretory, Horticulture.
4. Dr KV Raju, Economic Advisor to Hon'ble Chief Minister
5. Dr V Chandrashekar, **IAS**, Commissioner for Agriculture.
6. Shri Kanwer Pal, **IAS,** Commissioner for watershed.
7. Dr KV Sarvesh, Director of Agriculture.
8. Shri Jagadish, **IAS**, Director of Horticulture.
9. Smt. Deepa Cholan, **IAS**, Director of SEP RDP
10. Dr SP Wani, Project Coordinator, ICRISAT, Hyderabad.
11. Dr KKrishnappa, Resident Project Scientist for Bhoochetana, ICRISAT
12. Dr BK Dharmarajan, Additional Director of Agriculture (Crop Dev. & Planning).
13. Dr H Subbayya, Additional Director of Agriculture (organic Planning)
14. Dr K Nagaraj Shetty, Additional Director Animal Husbandry.
15. Dr Anand Krishnan. K. Manging Director, KSSC.
16. Dr Anil Kumar S. University of Horticulture, Bagalkote.
17. Dr ST Hundekar, SMS Soil Scientist, UAS Dharwad.
18. Dr MB Ravi, Liason Officer, Bhoochetana, UAS Raichur.
19. Dr T Sheshadri, Professor, UAS Bangalore, Director of Research.
20. Dr K Naga Bhooshanam, Director of Extension, UAS Bangalore.
21. Dr A Satish, GKVK, UAS Bangalore.

22. Dr BS Janagondar, Director of Research, UAS Raichur.
23. Shri Subramanyam K.V. Joint Director, Director of Economics & Statistics.
24. Shri K. Hanumanth Reddy, Joint Director of agriculture (Development).
25. Shri Sidaraju, Joint Director of agriculture (Inputs).
26. Smt SM Deepaja, Deputy Director of Agriculture (Food Crops).
27. Smt Poornima G.C. Deputy Director of Agriculture (Seeds).
28. Shri SR Nagaraj, Assistant Director of Fisheries.
29. Shri GM Bommai, KSSC.
30. Smt KN Shrmila, Agriculture officer (Food Crops).
31. Smt Mathura S Pai, Agriculture officer (Food Crops).

Annexure-1: Roles and Responsibilities

A. Karnataka State Department of Agriculture:

- Director, Agriculture is the nodal officer and Department of Agriculture will implement the project in all the districts
- Department of Agriculture will prepare detailed action plans and organize timely availability of necessary quality inputs.
- Department will provide day-to-day supervision, timely supply of nutrients and ensure required target to be made to cover planned areas in the district.
- Department staff along with other consortium partners will undertake crop cutting experiments to record yield data.

B. ICRISAT:

- To give technical recommendations.
- Participation in district level technical committee meetings.
- To appoint and monitor the activities of research technicians.
- To monitor crop cutting experiments and documentation.
- To submit half yearly and annual reports inclusive of all activities of Bhoochetana.
- To pilot run Tablet based extension in four districts.
- To come out with action plan for climate resilient studies and give suitable recommendations.

C. Karnataka State Natural Disaster Management Center :

- Provide guidance for action plan climate resilient studies and give suitable recommendations.

D. Karnataka State Seed Corporation :

- To monitor seed production programme.
- To introduce new varieties.
- Provide guidance for setting up of Seed banks.

E. Universities:

- Provide guidance and monitor the functioning of KIOSKS.
- To guide Climate resilient studies and give suitable recommendations.
- Capacity building activities.
- To make action plan for multiplication of new varieties.

F. Department of Economics and Statistics :

- To utilize the services of farmer facilitators for crop cutting experiments in the selected villages
- Provide guidance for crop cutting experiments in the Bhoochetana plots

G. Watershed Development Department:

- Watershed Development Department would converge IWMP's productivity enhancement activities with BCM program.
- The AGs, SHGs and WCs of IWMP would actively participate in village seed banks, nursery raising and other collective action activities.
- IWMP watersheds would undertake Gliricidia plantation to cover 100% areas of field bunds as a model for other farmers.
- WDD staff's active participation in training, development and M & E activities is critical.

H. Department of Horticulture:

- Coveregence of their Extension Officers and Schemes in Bhoochetana Blocks.

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PowerPoint Presentations

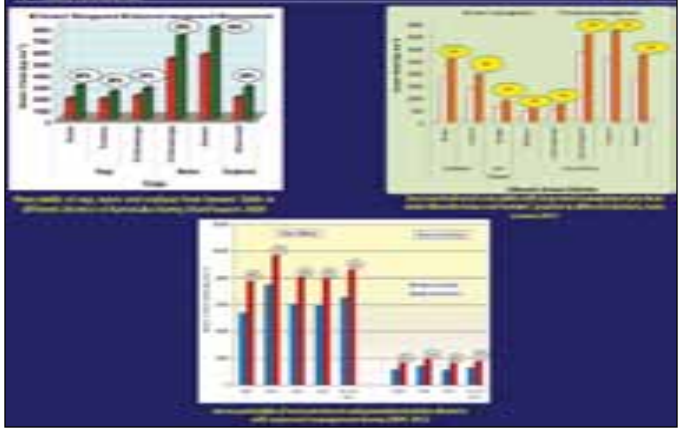
Objectives

1. To review the progress of Bhoochetana during last four years, assess the strengths and weaknesses based on the lessons learnt
2. To plan for strengthening gains of Bhoochetana thru a Bhoochetana Mission Program (BCMP) for maintaining increased agricultural production in the state and building climate resilient and inclusive market oriented development (IMOD) in the state.
3. To prepare detailed operational plans for GoK-CGIAR initiative to establish an evidence-based and science-led scaling-up model for integrated rural development at four benchmark sites thru IMOD strategy with partnership and empowerment for sustainable development

Bhoochetana: Year-wise Area Coverage

Component	2009-10	2010-11	2011-12	2012 Kharif
Area (million ha)	0.1	1.2	2.85	3.73
No. of districts	06	16	30	30
No of Villages	1440	5020	14014	26293
No of farmers (millions)	0.2	0.8	2.2	4.39
No. of farmer facilitators for extension activities	317	2500	5688	8700
No. of lead farmers	1867	10500		45000

Increased Crop Yields by 23 to 66 per cent for Small Farmholders



Enhancing Family Incomes and State's Gross Production, Rainy Season 2011

Crop	Production with FM (Million t)	Production increase with IM (Million t)	Price (Rs t⁻¹)	Increase economic value with IM (Rs in crores)	Total production (Million t)
Grand Total (Cereals)	4.05	0.48	9,700	463.56	4.53
Grand Total (Oilseeds)	0.35	0.05	23,967	109.81	0.40
Grand Total (Pulses)	0.22	0.02	31,000	73.34	0.24
Total	**4.62**	**0.55**		**646.71**	**5.17**

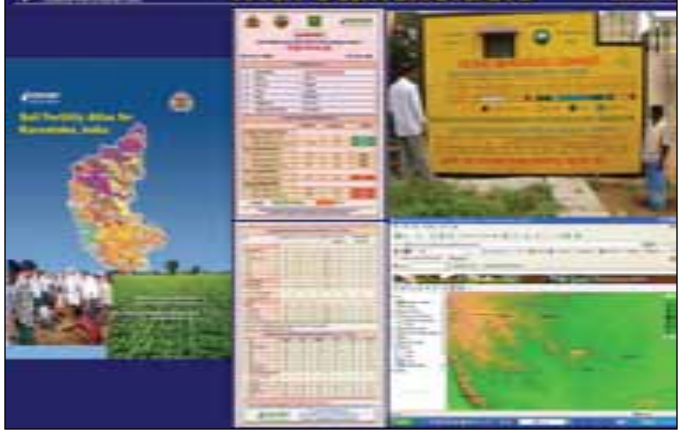
Regular and Effective Monitoring and Evaluation Systems alongwith Capacity Building

- Video conferencing empowered SLCCs
- District and Taluk level CCs
- Field Days and regular training

Empowered Farmers as Extension Agents

- Farm Facilitators (FF) and Lead Farmers (LF) Every 500 ha one FF and 2-3 LFs
- Training and empowering FFs and LFs
- Certified and quality assurance
- We need to strengthen this novel extension approach

Sharing Soil-test Results with Stakeholders



New Innovative Extension Systems

Drivers of Success

- Translated rhetoric of inclusiveness and enhancing input use efficiency into action thru science-led R4D scaling-up – holistic inclusive approach
- Working passionately and persistently for productivity enhancement by bringing all stakeholders on the same page – Good team work
- Tangible economic benefits to small and marginal farmers in rainfed areas
- Broke vicious cycle of supply driven approach and established demand driven mindset—Change of mindset of actors
- Strengthened innovative extension and knowledge sharing systems – Effective dissemination

Strengthening Bhoochetana a Sustainable Agriculture Mission for Improved Livelihoods in Karnataka

The vision of Bhoochetana Mission Program (BCMP) is to sustainably improve the livelihoods of farmers in the state by developing farmers' centric, science-led inclusive market-oriented integrated farming systems participatory development approach

What We Need to Address in BC II Phase

- Sustainable growth in agriculture thru taking science at farmers' doorstep and reduce poverty thru enabling institutions and policies by linking farmers to markets
- Climate change adaptive and resilient agriculture for small farmers
- Institutionalise the process of science-led development and Research4Development (impact)
- Strengthen innovation platform and decentralized coordinated extension system
- Evaluate spectral analysis method for soil samples
- Institutional learnings and share with other states

Government of Karnataka-CGIAR Initiative

Improving Rural Livelihoods through Innovative Scaling-up of Science-led Participatory Research for Development

System-level Outcomes

- Improving livelihoods
- Ensuring ecosystem services
- Sustainability (Production – Profits – Sustainability)
- Building Resilience (ability to cope with shocks or variations

Pilot and Innovations

Four Revenue Divisions & Pilot Districts

1. Bengaluru
   Tumkur
2. Mysore
   Chikamangluru
3. Raichur
   Raichur
4. Belgaum
   Bijapur

Synergy

- Convergence of CG and GoK – which is unique on its own for scaling up PR4D research
- Drought proofing of the state through innovative techniques, policies and institutions for impact
- Enabling drivers for Research for Development (R4D)
- It will be a model in Asia and the world
- Win-win situation as the platform also build capacity of State Agricultural Universities (SAUs) to emerging challenges of climate change and poverty reduction

Ex-ante Impact: Additional Benefits from GoK-CGIAR Initiative in Karnataka (Rs in crore)

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Income from agriculture	80	167	250	333	333	1163
Income from livestock development & allied livelihood activities	1	3	5	8	9	27
Total benefit	81	169	255	342	342	1190

BoC ratio with full cost 1:8.3

Partners

Nine CG and International Centres

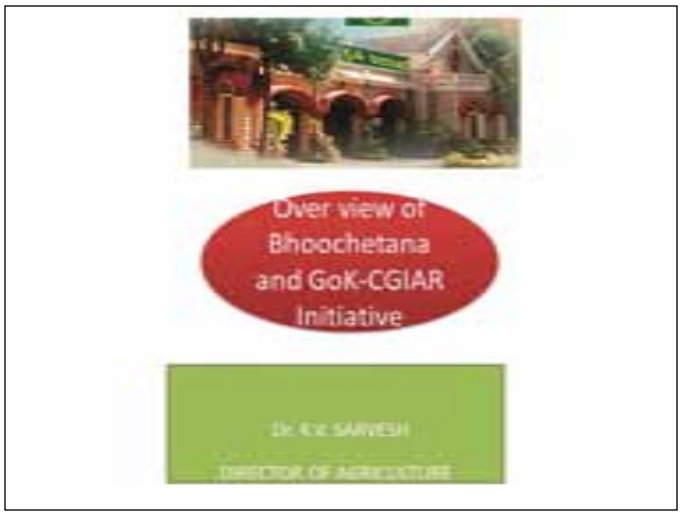
- International Crops Research Institute for the Semi-Arid Tropics (ICIRSAT)
- International Water Management Institute (IWMI)
- International Livestock Research Institute (ILRI)
- International Rice Research Institute (IRRI)
- Center for International Maize and Wheat Improvement Center (CIMMYT)
- International Food Policy Research Institute (IFPRI)
- International Center for Agricultural Research in the Dry Areas (ICARDA)
- International Center for Research in Agroforestry (ICRAF)
- The World Vegetable Center (AVRDC)

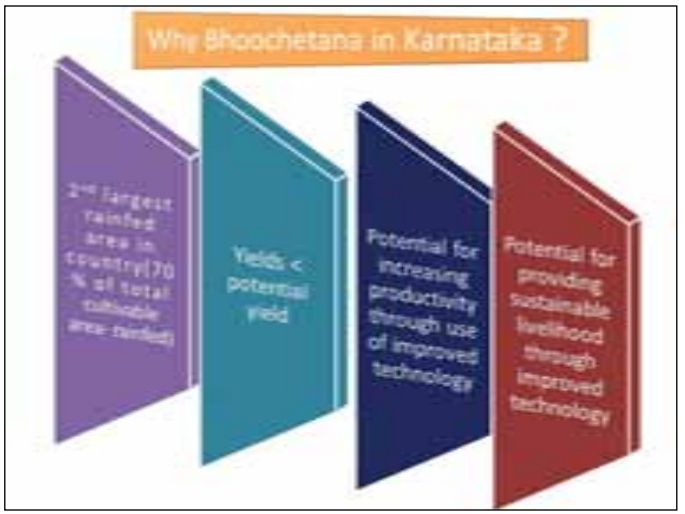
Partners (Contd..)

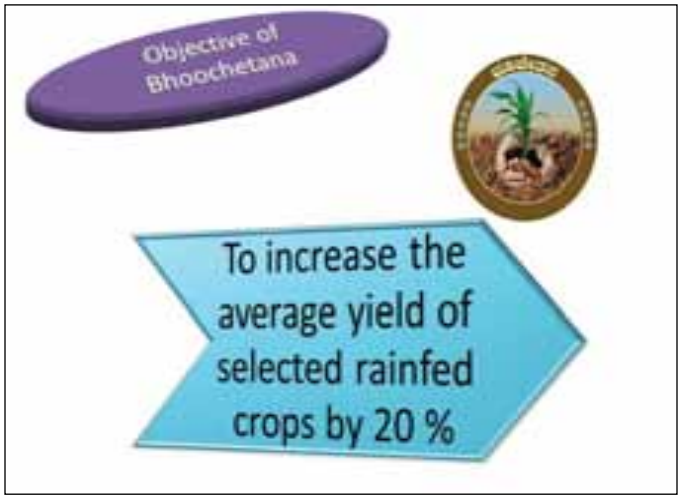
- University of Agricultural Sciences, Bengaluru (UASB)
- University of Agricultural Sciences, Dharwad (UASD)
- University of Agricultural Sciences, Raichur (UASR)
- University of Agricultural Sciences, Bagalkote (UASB)
- University of Horticultural Sciences, Bagalkote (UHSB)
- Department of Agriculture (DoA), Government of Karnataka
- Department of Horticulture (DoH), Government of Karnataka
- Department of Water Resources (WRD)
- Department of Animal Husbandry
- Department of Rural Development

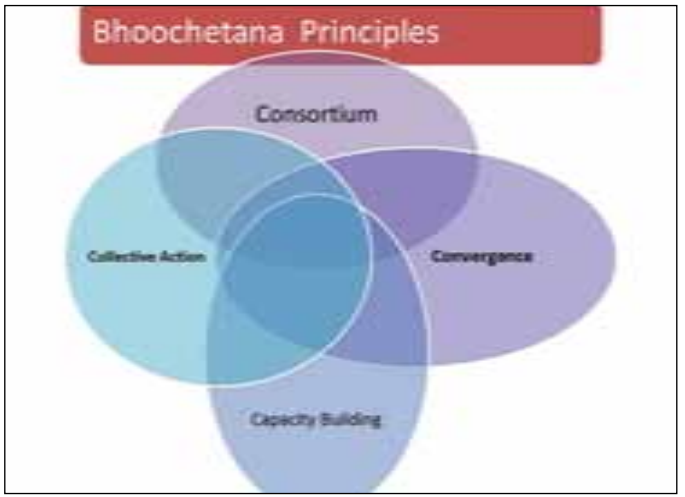
ICRISAT
Science with a human face

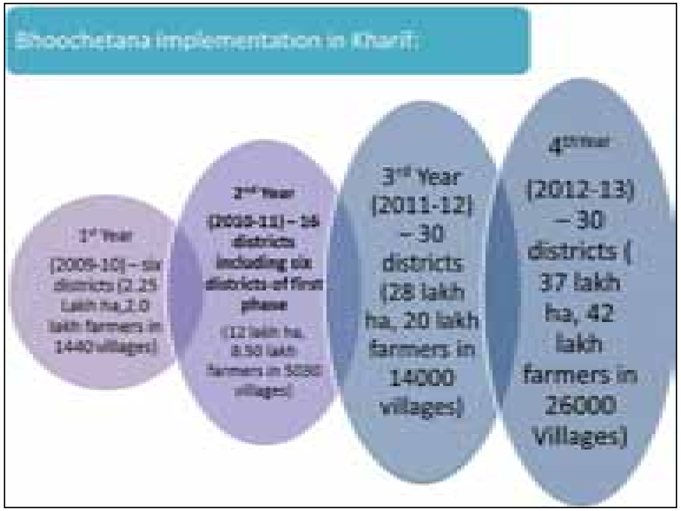
Thank you!

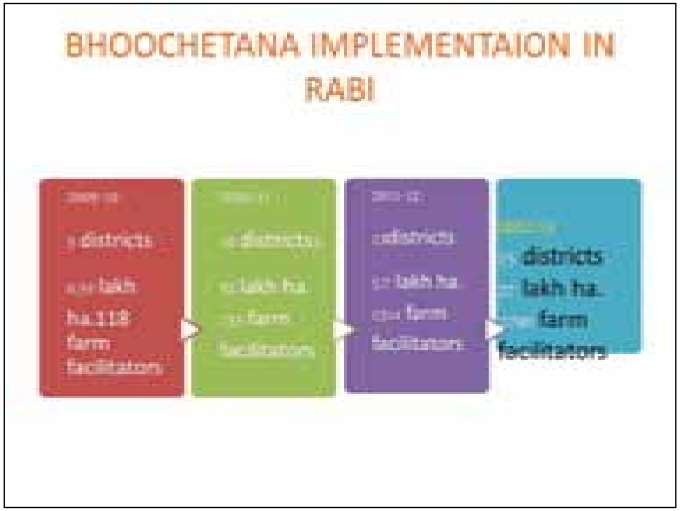

Over view of Bhoochetana and GoK-CGIAR Initiative
Dr. K.V. SARVESH
DIRECTOR OF AGRICULTURE

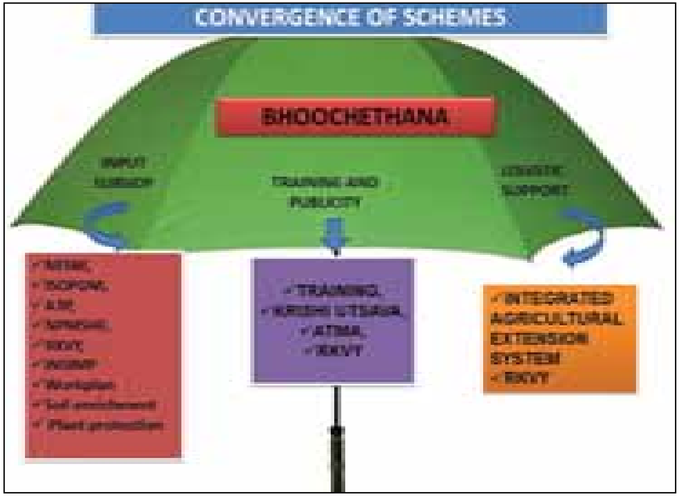

Why Bhoochetana in Karnataka ?
2nd largest rainfed area in country(70 % of total cultivable area rainfed)
Yields < potential yield
Potential for increasing productivity through use of improved technology
Potential for providing sustainable livelihood through improved technology

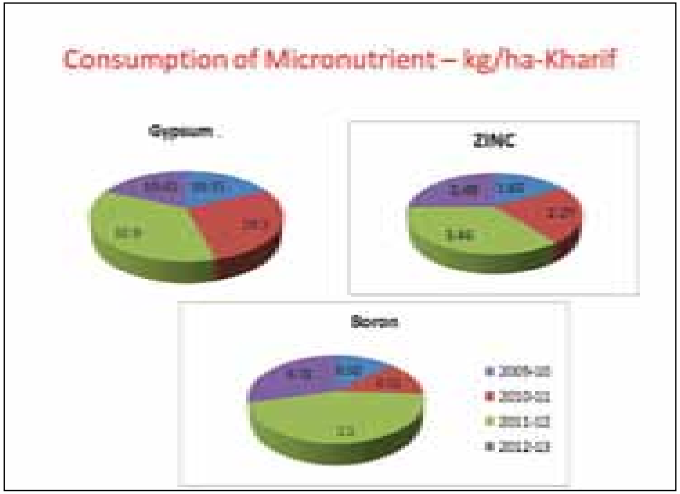

Objective of Bhoochetana
To increase the average yield of selected rainfed crops by 20 %


Bhoochetana Principles
Consortium
Collective Action
Convergence
Capacity Building

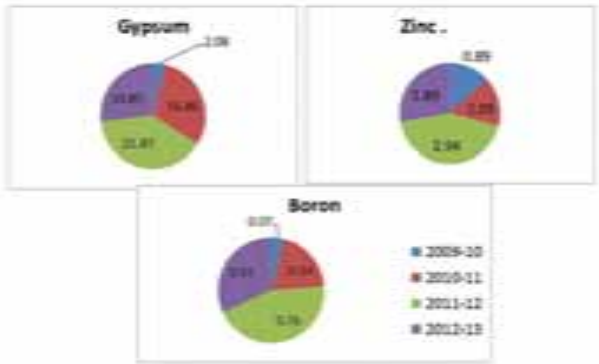

Bhoochetana implementation in Kharif:
1st Year (2009-10) – six districts (2.25 Lakh ha,2.0 lakh farmers in 1440 villages)
2nd Year (2010-11) – 16 districts including six districts of first phase (12 lakh ha, 8.50 lakh farmers in 5550 villages)
3rd Year (2011-12) – 30 districts (28 lakh ha, 20 lakh farmers in 14000 villages)
4th Year (2012-13) – 30 districts (37 lakh ha, 42 lakh farmers in 26000 Villages)


BHOOCHETANA IMPLEMENTAION IN RABI
districts
lakh ha.
farm facilitators


CONVERGENCE OF SCHEMES
BHOOCHETHANA
INPUT SUBSIDY
TRAINING AND PUBLICITY
LOGISTIC SUPPORT
TRAINING
KRISHI UTSAVA
ATMA
RKVY
INTEGRATED AGRICULTURAL EXTENSION SYSTEM
RKVY


Consumption of Micronutrient – kg/ha-Kharif
Gypsum
ZINC
Boron
2009-10
2010-11
2011-12
2012-13

Consumption of Micronutrient – kg/ha- Rabi



PRODUCTIVITY IN BHOOCHETANA PROJECT AREA- KHARIF

	2009-10	
Crops	CheckplotYield (q/ha.)	Demonstration plot Yield(q/ha.)
Ragi	18.42	25.66
Maize	52.5	74.2
Groundnut	11.36	15.16
Soybean	15.8	21.9

PRODUCTIVITY IN BHOOCHETANA PROJECT AREA

CROPS	2010-11 KHARIF		
	Check plot Yield(q/ha)	Bhoochetana Plot Yield(q/ha)	% increase
Ragi	1705.1	2326.6	36.45
Maize	4976.6	6688.3	34.39
Pearl millet	1665.0	2205.0	32.43
Sorghum	1612.7	2275.0	41.07
Black gram	930.0	1260.0	35.48
Green gram	496.0	684.0	37.90
Pigeonpea	1224.0	1648.0	34.64
Groundnut	1433.8	1862.4	29.89
Soybean	1802.0	2491.0	38.24
Sunflower	648	775	21.09

The abstract of yield estimation as per annual report submitted by ICRISAT(2011-12)

Crop	YIELD (in kg/ha)		
	Farmer's Management (Non Bhoochetana plots)	Improved management + Micronutrients (Bhoochetana plots)	% yield increase
Ragi	1450	1904	31.35
Maize	4018	5302	32.13
Pearl millet	1693	2343	39.26
Sorghum	1945	2735	40.32
Black gram	615	825	34.76
Green gram	540	765	40.46
Pigeonpea	824	1100	33.22
Groundnut	1632	2260	38.99
Soybean	1377	1876	37.88
Sunflower	1286	1736	34.77

MILES STONES OF BHOOCHETANA – 1 ST PHASE

BRINGING OUT SOIL ATLAS FOR KARNATAKA STATE

AWARENESS ON INTEGRATED NUTRIENT MANAGEMENT SPECIAL EMPHASIS ON DEFICIT MICRO NUTRIENTS LIKE ZINC, BORON, GYPSUM.

CONVERGENCE OF DIFFERENT SCHEMES IN DEPARTMENT

INCREASE IN YIELD BY 25-40% IN RAINFED CROPS THROUGH IMPROVED MANAGEMENT

TRAINING & PUBLICITY : PUBLICITY THROUGH NEWS PAPERS, WALL WRITINGS, STREET PLAYS AND PADAYATRAS . TRAININGS IN DIFFERENT LEVELS FROM CLUSTER VILLAGE TO DISTRICTS.

TECHNOLOGY TRANSFER TO FARMERS THROUGH FARMER FACILITATORS AND LEAD FARMERS.

ESTABLISHMENT OF GODOWNS IN CLUSTER VILLAGES TO TAKE INPUTS TO THE DOOR STEPS OF FARMERS.

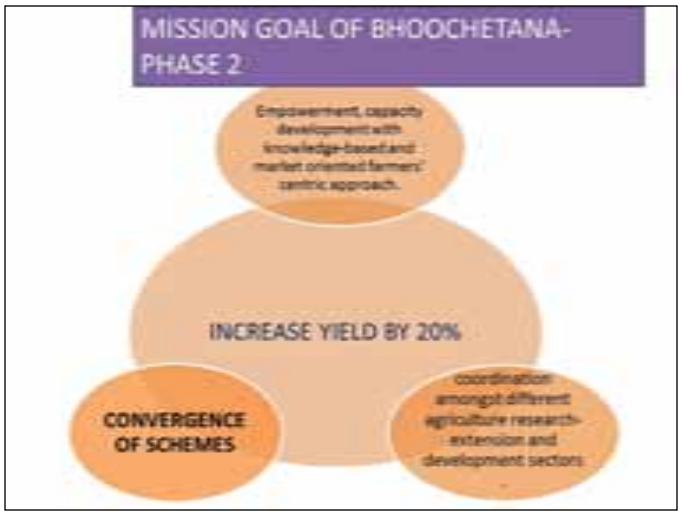
IMPLEMENTATION OF FARMERS FIELD SCHOOLS THROUGH OUT STATE TO CREATE AWARENESS ON NEW TECHNOLOGIES.

Challenges Ahead

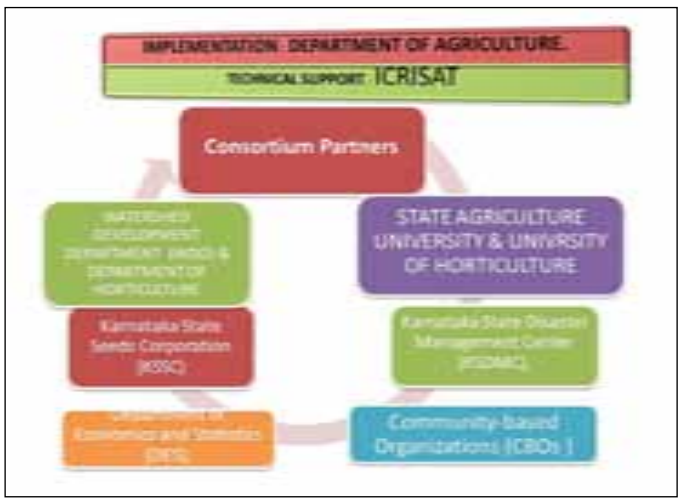
- To cover entire dryland area with improved technology
- to sustain productivity and production
- Establish market linkages
- Promote group activities
- Adoption of innovative information communication technologis

Vision of Bhoochetana - Phase 2

To sustainably improve the livelihoods of all categories of farmers in the state by developing farmers' centric, science-led inclusive market-oriented integrated farming systems participatory development approach.


MISSION GOAL OF BHOOCHETANA-PHASE 2
Empowerment, capacity development with knowledge-based and market oriented farmers' centric approach.
INCREASE YIELD BY 20%
CONVERGENCE OF SCHEMES
coordination amongst different agriculture research-extension and development sectors


DETAILS OF NEW COMPONENTS
CLIMATE CHANGE
INNOVATIVE COMPONENTS
SEED PRODUCTION
EVALUATION
• MONITORING AT DIFFERENT LEVELS.


IMPLEMENTATION: DEPARTMENT OF AGRICULTURE.
TECHNICAL SUPPORT: ICRISAT
Consortium Partners
STATE AGRICULTURE UNIVERSITY & UNIVERSITY OF HORTICULTURE
Karnataka State Seeds Corporation (KSSC)
Community-based Organizations (CBOs)


GoK – CGIAR
Initiative
for
Improving
Rural Livelihoods
in Karnataka

Budget announcement

The Hon'ble Chief Minister, Government of Karnataka, in his 2012-13 budget speech, has announced that "In order to ensure that our farmers in the coming years are protected from facing frequent drought conditions, steps have been taken to formulate special action plans in collaboration with international level scientific institutions such as International Crops Research Institute for the Semi-Arid Tropics, International Rice Research Institute, Maize and Wheat Research Institute, International Animal Husbandry Research Institute and International Food Policy Research Institute. Right strategies will be designed with assistance from these institutes, and implemented on pilot basis in some taluks/districts, which will then be extended to other areas".

BACKGROUND

- The Department of Agriculture is closely working with International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in the implementation of Bhoochetana, for increasing productivity of rainfed crops in 30 districts.
- The impact of Bhoochetana during the last three years has clearly demonstrated that farmers are benefitted with increased crop productivity ranging from 23 to 66% in different districts with different crops.
- Realizing high impacts in terms of increased agricultural productivity, the State Government desired to partner with the CGIAR institutions working in India in a consortium approach led by ICRISAT for " Improving rural livelihoods in Karnataka".

OBJECTIVES

- To increase the productivity of agricultural systems by 20%
- To enhance average family income by 25%
- To establish pilots and innovation platforms for farmers – line departments – researchers – policymakers
- To reduce vulnerability of farmers to changes due to climate variability and market forces
- To develop strategy for sustainable eco friendly production systems using selected system-level interventions.

Consortium Partners

Pilot Sites Selected

Revenue Division	District
• Bangalore	Tumkur
• Mysore	Chikmagalur
• Belgaum	Bijapur
•Gulbarga	Raichur

•Conducted bench mark survey in four selected districts.
• The survey has been conducted involving the district officers of Agriculture and line Departments
•The area of operation is 20,000, 40,000,80,000 and 1,20,000 hectares respectively for four years in the selected pilot sites.

Operational Details

The GoK-CGIAR initiative will be implemented for four years (2012-13 to 2015-16) in a phased manner.

In the first phase four pilot districts selected viz., Tumkur, Chikkamagalur, Bijapur and Raichur, representing four revenue divisions Bangalore, Mysore, Belgaum and Gulbarga of the State.

Department of Agriculture shall be the nominated as nodal department and ICRISAT as the nodal institute for the consortium group of CGIAR institutions.

To implement and monitor the initiative, at the State Level, Co-ordination Committee and at the District Level, implementation committees to be constituted.

The sites of learning will be established in the four selected pilot districts

Four sites in the pilot districts will cover 10,000 ha area in each site during the first year and progressively will increase to cover 80,000 ha (by the end of fourth year) each in four districts as mentioned below.

The size of the pilot site in a district may vary depending on the area covered by the selected villages and will adopt the cluster approach.

BUDGET REQUIREMENT

PART A

Rs. in crores

Sl.no	Particulars	2012-13	2013-14	2014-15	2015-16	Total
1	Area (in ha) for plot sites in four pilot districts	40000	80000	160000	320000	320000
2	Budget proposed for implementing Depts/Universities	15.00	50.00	100.00	200.00	365.00
3	Budget met out by down scaling the provisions under the on going schemes	5.00	22.00	44.00	88.00	159.00
4	Budget requirement for implementing the project by dept/Universities (2-3)	10.00	28.00	56.00	112.00	206.00

- The budget provision of Rs.206 crores for four years has to be earmarked exclusively for GoK-CGIAR initiative by providing new head of account and allocate the amount to the nodal department.

- An amount of Rs.10.00 crores to be earmarked for the year 2012-13 and to be released to the nodal department for implementation of the initiative.

BUDGET REQUIREMENT

PART B

Rs. in crores

Sl.no	Particulars	2012-13	2013-14	2014-15	2015-16	Total
1	Human Resources	3.00	3.30	3.70	4.10	14.10
2	Travel	0.50	0.60	0.60	0.60	2.30
3	POE – Operational costs	1.70	1.60	1.50	1.50	6.30
4	Capacity Building and Team Building	0.50	0.60	0.70	0.60	2.40
5	Communications and Publications	0.20	0.30	0.30	0.30	1.10
6	Administrative and contingencies	0.60	0.70	0.70	0.80	2.80

- Provision to be made with an out lay of Rs.25.00 crores for four years, under Sujala III Scheme, 2403-00-102-0-28, Head of Account of the Water Shed Development Department, out of which an amount of Rs.6.5 crores to be released to ICRISAT for the year 2012-2013.

STATUS OF THE INITIATIVE

- *As per the decision taken in the meeting of SLCC held on 21-09-2012, the ICRISAT has been requested vide GoK letter no. DO.No.AD/ PRS/2012-13/753 dated 17-10-2012 to implement the initiative during the rabi season 2012-13 in the selected pilot sites pending approval of the State Cabinet.*

- *The revised proposal is submitted to Government for seeking the approval of the State Cabinet.*

STATUS OF THE INITIATIVE

- *Two day brain storming workshop was held on 3rd and 4th January 2013, in the department of Agriculture, inviting the District Collectors, CEOs of Zilla Panchyath, District Implementing officers of Agriculture Dept. and line departments of the four pilot districts to draw the action plan for implementing the GoK-CGIAR initiative in Kharif-2013.*

STATUS OF THE INITIATIVE

The Hon'ble Chief Minister of Karnataka, in his agriculture budget speech 2013-14 Para no17 has announced "New MoU for improvement of life to farmers: With a view to improve the economic condition of the farmers along with agricultural wealth, Farmers Income commission will be set up as per the recommendations of Dr.Swaminathan. In order to formulate a programme to protect the farmers of Karnataka from the effect of frequent droughts, the State Government has entered int o MoU with 9 Internation CGIAR organizations. Basic status survey and activities as per the action plan is under progress in one district each in the four revenue divisions (Tumkur, Chikkamagalur, Bijapur and Raichur) for implementation of the said programme. Rs.50.00 crore will be provided as funding to extend this programme to all the districts in the coming years in a phased manner.

STATUS OF THE INITIATIVE

CONSUETITIVE GROUP OF INTERNATIONAL AGRICULTURE RESEARCH INSTITUTES ARE:-

- International Crops Research Institute for the Semi Arid Tropics (ICRISAT)
- International Water Management Institute (IWMI)
- International Livestock Research Institute (ILRI)
- International Rice Research Institute (IRRI)
- Center for International Maize and Wheat Improvement Center (CIMMYT)
- International Food Policy Research Institute (IFPRI)
- International Center for Agricultural Research in the Dry Areas (ICARDA)
- The World Agroforestry Centre (ICRAF)
- The World Vegetable Centre (AVRDC)

STATUS OF THE INITIATIVE

- The pilot districts have identified 10000 hectares in each district.
- The Scientist from the CGIAR institutions have visited the identified pilot sites of the districts and have interacted with the farmers, and conducted bench mark survey.
- Based on the SWOT analysis of the districts the district officers of agriculture and line departments have formulated sector wise Detailed Project Report for the GoK-CGIAR initiative.

STATUS OF THE INITIATIVE

The pilot districts – Tumkur,Chikkamagalur, Bijapur and Raichur will make the detailed sector wise action plan presentation inclusive of:-

- Area of operation of selected 10000 hectares
- Constraints in increasing the productivity
- Stratergies drawn to enhance productivity
- Sector wise fund requirement for the GoK-CGIAR initiative
- Fund available by dove tailing existing schemes of the respective departments
- Expected outcome of the initiative.

cgiar

Government of Karnataka-CGIAR Initiative

Improving Rural Livelihoods through Innovative Scaling-up of Science-led Participatory Research for Development

System-level Outcomes

- Improving livelihoods
- Ensuring ecosystem services
- Sustainability (Production – Profits – Sustainability)
- Building Resilience (ability to cope with shocks or variations

Objectives of the Proposed Approach

- To form action oriented consortium of CGIAR institutions to operationalize action research scaling-up model in partnership with line departments in the State of Karnataka to increase crop yields by 20 per cent and farmers incomes by 25% in four years
- To establish sites of learning of integrated participatory research for development to benefit small and marginal farmers in irrigated and rainfed agriculture areas
- To develop the capacity of the agricultural related development agencies in the state for enhancing the impact of the development programs through science-led support systems

Pilot and Innovations

Four Revenue Divisions & Pilot Districts

1. **Bengaluru**
   Tumkur
2. **Mysore**
   Chikamangluru
3. **Raichur**
   Raichur
4. **Belgaum**
   Bijapur

Criteria Used for Identifying Benchmark Sites

ICRISAT

- Representative site for revenue division
- Good potential for impact to bridge the gaps
- Accessibility
- Willingness to adopt new
- Presence of suitable institutions
- Predisposition for change

Constraints Across Revenue Divisions Based on Stakeholders Consultations

ICRISAT

- Water scarcity
- Labor scarcity
- Lack of access to market
- Acute power shortage
- High cost of cultivation – Low resource use efficiency
- Lack of storage facility – Narrow window of procurement Post harvest losses – lack of processing units – minimum support price
- Fodder scarcity
- Poor mechanization
- Lack of access to real time information
- Lack of convergence of schemes
- Mono-cropping with subsistence

Constraints Identified during Field Visit and Stakeholders' Consultation

ICRISAT

Chikkamagalur	Tumkur	Bijapur	Raichur
•Lack of Allied activities • lack of improved seeds •Infrastructure – connectivity •Poor Mechanization •Indiscriminate use of fertilizer •Poor productivity and WUE •Groundwater depletion •Fodder scarcity •Credit constraints •Forest Encroachment	•Depleting water table •Poor crop establishment •Poor productivity •Low WUE & NUE •Non availability of timely inputs •Pest and diseases •Poor infrastructure •Poor market linkages •Credit constraints •Fallow land	•Depleting water table •Water quality •Low forest cover •Low yield •Low WUE & NUE •Fallow land •Local low yielding non-descriptive breeds •Improper utilization of dry fodder •Low per capita availability of animal foods	•Over use of fertilizer •Ground water quality •Low forest cover •Single and mono cropping system •Fodder quantity and quality •Depleting water table •Poor productivity and WUE •Poor access to input/output market

Strategy

ICRISAT

- The main strategy will be to build the partnerships and harness the synergy to benefit the farmers through science-led development
- Principle of consortium and linking knowledge-generating institutions like CGIAR institutions, SAUs with development oriented line departments and extension systems
- The convergence of the line departments as well as SAUs in this innovation will involve the institutionalization of the principle of convergence of different line departments'
- To internalize the "must win/succeed mindset
- The approach will be a missionary one to harness the benefits

Strategy (Contd..)

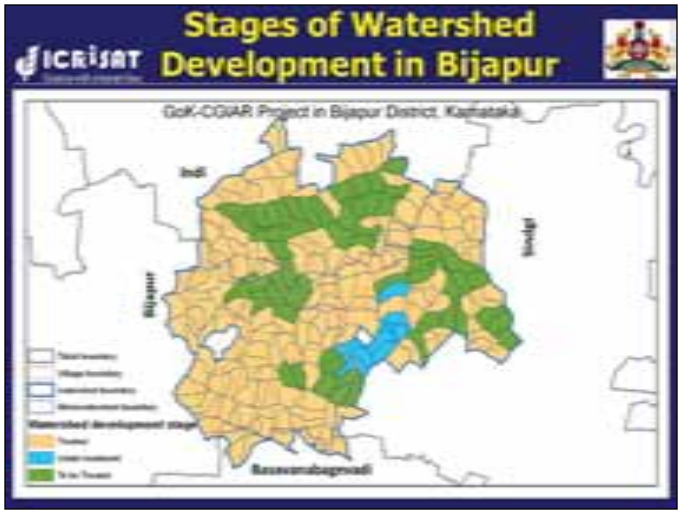
- The science-led systems approach will ensure that we build the capacity of the farmers
- The pilot sites will become the "Sites of Learning" and the consortium will adopt the principle of "Seeing is Believing"
- Strengthening Capacity Building of human resources
- By adopting the principle of 4 Cs we will address the consortium goal through 4 Es i.e, Efficiency, Economic gain, Equity and Environment protection

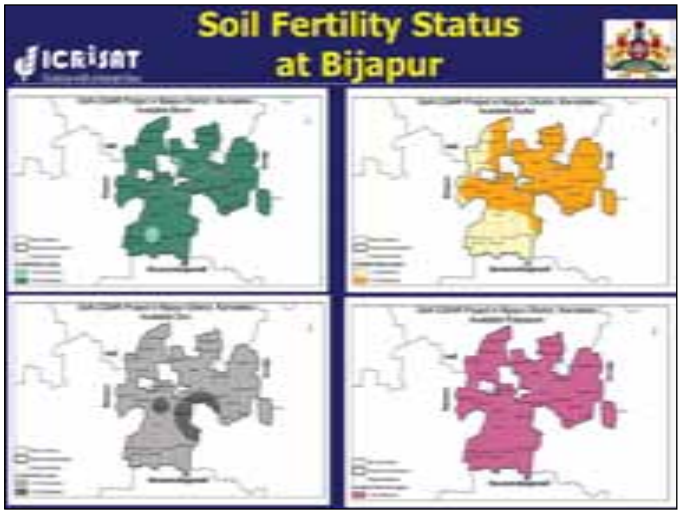
Consortium

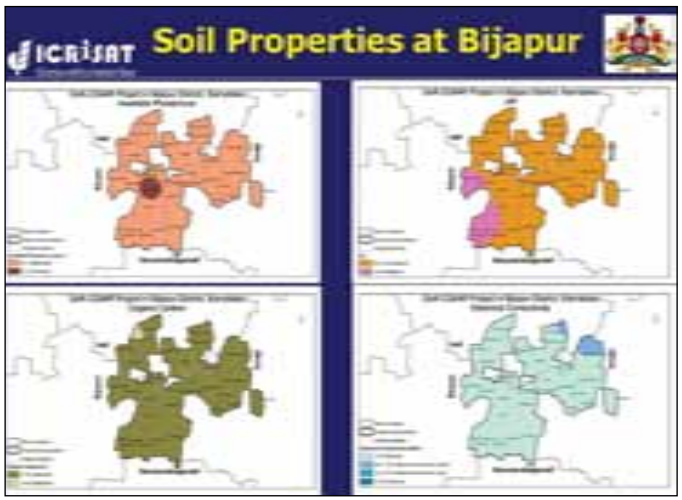
Area Coverage under Pilot

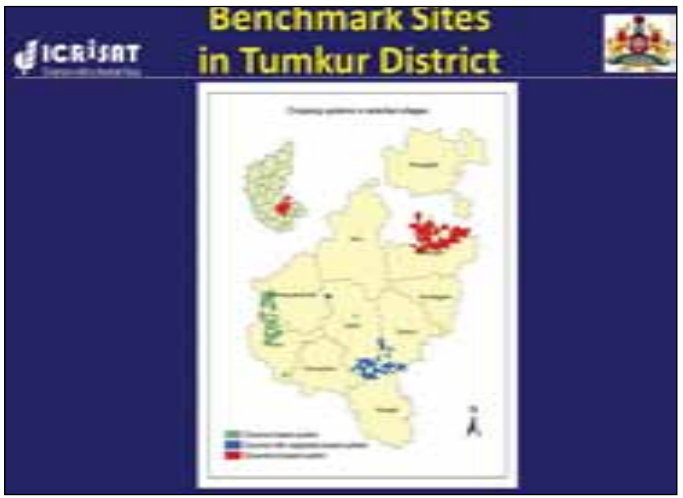
	Year 1	Year 2	Year 3	Year 4
Area (ha) in each pilot district	10000	20000	40000	80000

GoK-CGIAR Project Bijapur Site


Stages of Watershed Development in Bijapur
ICRISAT
GoK-CGIAR Project in Bijapur District, Karnataka
Indi
Bijapur
Sindgi
Basavanabagewadi

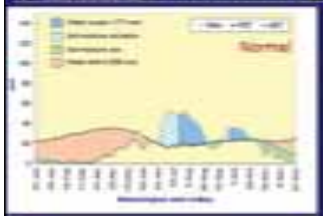

Soil Fertility Status at Bijapur
ICRISAT

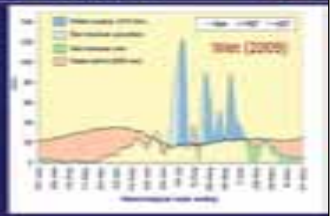

Soil Properties at Bijapur
ICRISAT

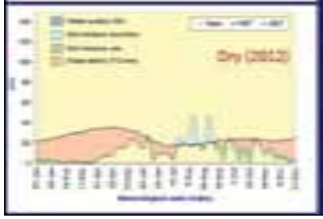

Benchmark Sites in Tumkur District
ICRISAT

Benchmark Sites in Chikmagaluru District

Climatic Water Balances of Tarikere, Chikkamagalur District







Climatic water balances computed based on Thornthwaite method

- Water surpluses vary from 171 mm in normal year up to 410 mm in wet year. No surplus in dry year
- Even in wet years, water deficits are high. Water harvesting plays an important role

CGIAR Center-wise Interventions

CG centers	Tumkur	Bijapur	Raichur	Chikmagaluru
ICRISAT	▫ Soil test based fertilizer recommendations ▫ Introduction of stress tolerant short duration legumes and cereals ▫ Climate change impacts and adaptation strategies ▫ In-situ and ex-situ soil and water conservation for enhancing WUE ▫ Building system resilience through crop diversification ▫ Enhancing WUE thru waste water treatment and reuse in agriculture			
IWMI	▫ Intensification of micro-irrigation methods in irrigated and dryland areas ▫ Enabling policies			
CYMMIT	▫ Participatory evaluation of improved maize cultivars ▫ Evaluation and refinement of farm machinery for CA ▫ Crop intensification and diversification in rice-rice systems			

CGIAR Center-wise Interventions

CG centers	Tumkur	Bijapur	Raichur	Chikmagaluru
IRRI	▫ Direct seeded rice for dryland and irrigated areas ▫ Participatory evaluation of improved rice cultivars ▫ Mechanization of rice planting and crop intensification			
ILRI	▫ Enhancing feed, fodder quality thru PPP model ▫ Mapping and characterization of feed and fodder resources			
ICARDA	▫ Establishing edible cacti nursery and propagation at benchmark sites ▫ Wasteland rehabilitation using edible cacti to be used for animal feed ▫ Screening of lentil cultivars for introduction in the systems			

CGIAR Center-wise Interventions

CG centers	Tumkur	Bijapur	Raichur	Chikmagaluru
ICRAF	❑ Fodder and tree species ❑ Agro-forestry ❑ Wasteland rehabilitation			
IFPRI	❑ Baseline characterization and impact monitoring ❑ Policy interventions ❑ Capacity building (knowledge integration)			
AVRDC	❑ Expand/improved vegetable cultivation including IPM in dryland and irrigated areas ❑ high value vegetables – greengram, veg. soybean ❑ Micro-entrepreneurship thru value chain ❑ Capacity building and awareness raising			

Project Outputs

- Established pilots and innovation platforms for farmers – line departments – researchers – policymakers
- Increasing productivity of agricultural systems at pilot sites by 20% in four years
- Increasing average family incomes by 25% in four years
- Reduced vulnerability to changes due to climate change, climate variability and market forces
- Strategy for sustainable intensification using selected system-level interventions
- Build capacity of the stakeholders to operationalize science-led development approach taking holistic system-level interventions

Additional benefits from GoK-CGIAR initiative in Karnataka (Rs in crore)

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Income from agriculture	80	167	250	333	333	1163
Income from livestock development & allied livelihood activities	1	2	5	9	9	27
Total benefit	81	169	255	342	342	1190

Partners

Nine CG and International Centres

- International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
- International Water Management Institute (IWMI)
- International Livestock Research Institute (ILRI)
- International Rice Research Institute (IRRI)
- Center for International Maize and Wheat Improvement Center (CIMMYT)
- International Food Policy Research Institute (IFPRI)
- International Center for Agricultural Research in the Dry Areas (ICARDA)
- International Center for Research in Agroforestry (ICRAF)
- The World Vegetable Center (AVRDC)

Partners (Contd..)

- University of Agricultural Sciences, Bengaluru (UASB)
- University of Agricultural Sciences, Dharwad (UASD)
- University of Agricultural Sciences, Raichur (UASR)
- University of Agricultural Sciences, Bagalkote (UASB)
- University of Horticultural Sciences, Bagalkote (UHSB)
- Department of Agriculture (DoA), Government of Karnataka
- Department of Horticulture (DoH), Government of Karnataka
- Department of Water Resources (WRD)
- Department of Animal Husbandry
- Department of Rural Development

Thank you!

Group 1: Input Mobilization including machineries for bench mark sites

Facilitator: Siddaraju
Joint Director of Agriculture

Issues

- Seeds
- Micro nutrient
- Biofertilizers
- Balanced application of NPK
- Organic manures
- Soil ammendments
- Water

Seeds

- Inadequate godowns
- Timely suply of seeds and inputs

Suggetions

- Assesment of requirement
- Rate contract is being finalised
- Timely placement of indents by implementing officers
- Supply of required qty and variety
- Ensuring quality
- Timely payment to supply agencies

Fertilizers

- **Requirement assessment**
- **Buffer stocking and preposition at socities**
- **Severe problem of godowns (Chikmagalore)**
- **Supply regulation**

Suggetions

- Encouraging organic fertilizers through
- Green manure
- Vermicompost
- Bio fertilizers, Etc.,

Micro nutrients

- Assessments
- Issue Rate contract
- Timely placing indents
- Storage facility
- Ensure quality
- Timely payment for regular supply and usage

Farm machinaries

- Assessment of required machinary as per the needs
- Issue of RC in time
- Monitoring the supply and quality
- CHC numbers and in service condition

Mico irrigation

- Exploring community sprinkler and rain gun on pilot basis system
- Sprinkler, rain gun and drip irrigation on individual community basis

Credit

- Review the scale of finances for crop loan
- Liaison with Bankers and timely loan sanctions

Labour Problem

- Use of Farm equipment to solve labour problem
- Better Convergence with MGNREGA

Horticulture Sector

- In Adequate supply of Seedlings and nurseries
- Crop diversification

- Input requirement
- Inadequate storage facilities
- Adequate Logistic support
- Providing marketing facilities

Animal husbandry

- Supply of suffecient of Feed/ fodder and seed material
- Enhancing the feed and fodder quality
- Supply of improved sheep/Goat breeds
- Encourage more poultry units

Forestry/ agro forestry

- Supply of suitable forest seedlings
- Tree Fodder species

Sericulture

- Supply of improved HYV planting material
- Supply of Shoot rearing equipments
- Timely supply of soil treatment chemicals

Fisheries

Timely supply fast growing fingrelings

Timelines

- Preposition of all inputs before commencement of the season
- Seeds- 15 days before commencement of the season
- Fertilizers- one month before commencement of the season
- Micro nutrients- one month before commencement of the season

- Bio fertlizers- one month before commencement of the season
- Farm Machineries and Agro processing units, - one month before commencement of the season
- Sowing equipments , PP equipments and chemicals- one month before thecommencement of the season
- Timely supply of bio agents and bio fertlizers

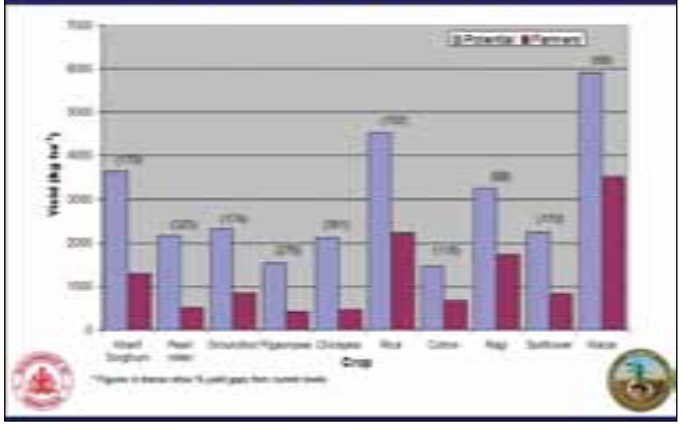
Output

- With better adoption of all practices/ tehniques we can anticipate in enhancement of 25-30% farmers income

Thanks

Bhoochetana: Achievements, Opportunities and Learnings to Benefit Farmers

Opportunities: Large Yield Gaps for Rainfed Crops in Karnataka



Objectives of Mission Mode Project

- To identify and scale-up best management practices (soil, crop, nutrient and water management) to enhance productivity by 20% of crops in 30 districts
- To train DoA staff in stratified soil sampling in villages, analysis of micronutrients, preparation of GIS-based soil maps. To guide DoA to establish high-quality Soil Analysis Laboratory in Bangalore. Training field staff of DoA for implementing the NRM technologies
- To build the capacity of the stake holders (farmers and consortium partners) to implement practices in the sustainable management of natural resources and enhancing productivity in dryland areas

Consortium Approach

Project Launching

The Bhoo Chetana project was launched on 23rd May 2009 by the Hon'ble Chief Minister of Karnataka Sri B. S. Yeddyurappa at Haveri. ICRISAT and Government of Karnataka signed an MOU on providing technical backstopping for this mission mode project

Bhoochetana: Mission Goal

What We have Achieved

Distribution of micronutrients in total (tons) and per hectare (kg) under Bhoochetana project

Year consumed	Season	Area covered (Lakhs ha)	Quantity Consumed (t)			Nutrient used (kg ha^{-1})		
			$ZnSO_4$	Gypsum	Borax	$ZnSO_4$	Gypsum	Borax
2009	Kharif	2.25	372	4309	53	1.65	19.15	0.23
	Rabi	0.59	-	-	-	-	-	-
2010	Kharif	12.72	2723	35376	389	2.27	29.50	0.32
	Rabi	3.70	362	5595	113	1.09	16.86	0.34
2011	Kharif	28.44	8775	96234	2781	3.46	37.90	1.10
	Rabi	6.60	1678	12475	432	2.94	21.87	0.76
2012	Kharif	35.70	6803	59935	3104	2.25	21.5	0.77

Bhoochetana: Year-wise Area Coverage

Component	2009-10	2010-11	2011-12	2012 Kharif
Area (million ha)	0.1	1.2	2.85	3.73
No. of districts	06	16	30	30
No of Villages	1440	5030	14014	26293
No of farmers (millions)	0.2	0.8	2.2	4.39
No. of farmer facilitators for extension activities	317	2500	5688	8700
No. of lead farmers	1867	10500		45000

Sharing Soil-test Results with Stakeholders

Soil Fertility Atlas Released

Regular and Effective Monitoring and Evaluation Systems alongwith Capacity Building

- Video conferencing empowered SLCCs
- District and Taluk level CCs
- Field Days and regular training

Empowered Farmers as Extension Agents

- Farm Facilitators (FF) and Lead Farmers (LF)
  Every 500 ha one FF and 2-3 LFs
- Training and empowering FFs and LFs
- Certified and quality assurance
- We need to strengthen this novel extension approach

New Innovative Extension Systems

Crop Diversification Opportunities

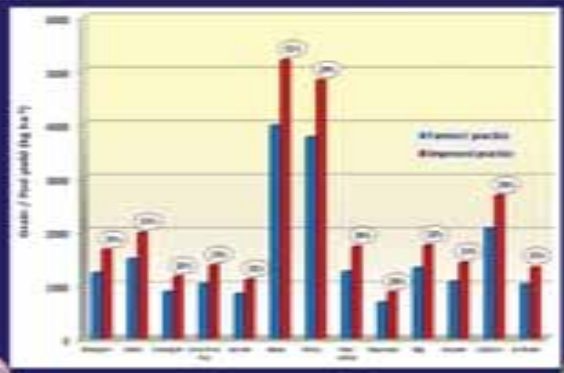
- From 1 acre farmer has harvested coriander worth Rs. 15000
- 1.2 t castor worth Rs. 50,000 is expected
- Farmer grew pigeonpea as a intercrop where farmers applied Bhoochetana package with micronutrients

Groundnut – Success Story from Bhoochetana

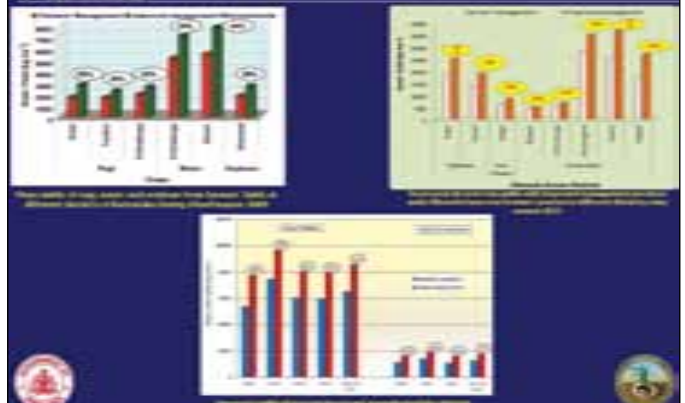
Knowledge Sharing: Field Days

Increased Productivity of Groundnut with Bhoochetana

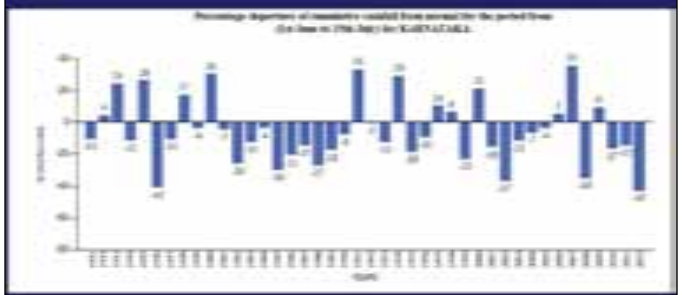
Increased Yields of Different Crops in Karnataka, Rainy Season 2012



Increased Crop Yields by 23 to 66 per cent for Small Farmholders



Percentage departure of cumulative rainfall as on 15th July 2012 is -43%, which is the lowest in the corresponding period of last 42 years



Enhancing Family Incomes and State's Gross Production, Rainy Season 2011

Crop	Production with FM (Million t)	Production increase with IM (Million t)	Price (Rs t-1)	Increase economic value with IM (Rs in crores)	Total production (Million t)
Grand Total (Cereals)	4.05	0.48	9,700	463.56	4.53
Grand Total (Oilseeds)	0.35	0.05	23,967	109.81	0.40
Grand Total (Pulses)	0.22	0.02	33,000	73.34	0.24
Total	**4.62**	**0.55**		**646.71**	**5.17**

Bhoochetana in the Limelight

Bhoochetana in the Limelight (Contd...)

- National Level
  - MoA
  - ICAR
- International Level
  - BBC
  - Alertnet
  - What ICRISAT thinks
  - Philippines
  - The Guardian
  - World Water Week

Awards and Recognitions

- Krishi Karman Award for the highest productivity of Coarse Cereals thru Bhoochetana. This award was instituted to recognize state's contribution to increase the food production in the country.
- Agriculture Leadership Award – 2011 as a best performing State by Agriculture Today

Drivers of Success

- Converge – Collective action – Capacity building – Consortium
- Efficient M&E mechanisms
- Holistic and integrated approach
- Galvanized and transformed DoA
- Innovative and empowered extension and delivery system
- Champions at higher policy level

Drivers of Success (Contd.)

- Translated rhetoric of inclusiveness and enhancing input use efficiency into action thru science-led R4D scaling-up – holistic inclusive approach
- Working passionately and persistently for productivity enhancement by bringing all stakeholders on the same page – Good team work
- Tangible economic benefits to small and marginal farmers in rainfed areas
- Broke vicious cycle of supply driven approach and established demand driven mindset—Change of mindset of actors
- Strengthened innovative extension and knowledge sharing systems – Effective dissemination

Thank you!

Group 2: Convergence and district coordination

Facilitator: Dr. B K Dharmesha
(Addl. Dir. Agri.)

Departments / Partners

- Agriculture
- Watershed
- Horticulture
- Animal Husbandry
- Sericulture
- Fisheries
- Cooperation
- Forest (Social)
- Ag. Marketing
- KVIC
- RDPR
- Irrigation
- Geology
- SAUs
- NGOs
- Credit institutes
- DES

Committees

- **State level committee**
  - Once in month
- **District level committee**
  - CEO (chairperson)
  - JDA (Member Sec)
  - All district officers of line departments (Members)
  - Once in Month

Committees

- **Taluk level committee**
  - EO (chairperson)
  - ADA (Member Sec.)
  - All taluk level officers of line departments (Members)
  - Once in 15 days
  - Sensitization of activities at project site

Convergence

- Technologies and demonstration
- Supply of inputs
- Credit linkage
- Integrated farming system
- Training and capacity building
- Farm mechanization and micro-irrigation (uniform pattern)
- Schemes of different departments
- Flow of information
- Post harvest technology- value addition and market linkage
- Single window delivery system

Thank You

GoK-CGIAR Initiative

Improving Rural Livelihoods through Innovative Scaling-up of Science-led Participatory Research for Development

GoK-CGIAR

Capacity building and awareness enhancement

Group III
Shankarappa and Team

Constraints

- Water scarcity
- Labour scarcity
- Monoculture
- Lack of access to market
- Acute power shortage
- High cost of cultivation
- Low resource use efficiency (WUE and NUE)
- Lack of storage facility (Narrow window of procurement)
- Post harvest losses – lack of processing units – minimum support price – Exploitation of Middleman
- Fodder scarcity

Constraints

- Poor mechanization
- Lack of access to information
- Lack of convergence of schemes
- Soil erosion (Soil and Water Conservation)
- Low yield of dryland crops
- Lack of Allied activities
- lack of improved seeds
- Pests and diseases (Yellow leaf disease)
- Infrastructure – Connectivity - Floriculture
- Indiscriminate use of fertilizer and water
- Forest denudation
- Unavailability of credit on time
- Reclamation of soil

Stakeholders

- SAUs and KVKs
- Agriculture and other Line departments
- NGOs and cooperatives
- Farmer facilitators
- Farmers
- Landless farmers

Capacity building

Capacity building to all the stake holders in terms of

1. Awareness of the existing constraints
2. Awareness of the improved production technologies
3. Awareness of the precise use of natural resources and external inputs
4. Awareness of the post harvest technologies and marketing technologies
5. Development of small entrepreneurship

Strategies and timeline

Masters trainers training (2 days) – March end

- 2-3 persons from each disciplines
- SAUs and KVKs
- Agriculture (DOA, DDA (DATC) , ADA SMS / ADA
- District level officers from other line departments

Strategies and timeline

Block level training (3 days) – Mid April

- Agriculture and allied field level officers
- Farmer Facilitators

Village levels Training (1 day) (April end)

- Farmers


Thank you

Interventions and Demonstration

Group-4

Major issues

- Varietals Replacement/Poor productivity
- Poor soil fertility
- Water scarcity/Poor WUE
- Mono cropping
- Labour shortage
- Marketing linkages issues
- Excess use of pesticide
- Fodder scarcity

Major issues

- Processing and values chain
- Fish seed production shortage
- Livestock breed
- Sericulture in dryland areas
- Capacity building
- Sericulture in dryland areas
- Agro-forestry
- Land reclamation of problematic soils

Soil-Water conservation and management

Interventions	Output	Indicators and monitoring mechanism
In-situ moisture conservation	Reduce water stress	i) Cropping intensity ii) green coverage iii) GW quality and duration
Reclamation of problematic soil	Enhanced cultivable area	
Promotion of fish culture	Food security and income/ Nutritional security	

Poor productivity

Interventions	Output	Indicators and monitoring mechanism
Soil fertility management	Restoration of soil health, NUE, Productivity	i) Crop yield ii) Cropping system
Varietal replacement		
Short duration legumes and cereals		
Maintenance of optimum plant population		

Labour shortages

Interventions	Output	Indicators and monitoring mechanism
Farm mechanization	Reduced drudgery, Less post harvesting losses, timely operation	Level of mechanization
Custom hiring centers		
Capacity building		

Livestock

Interventions	Output	Indicators and monitoring mechanism
Breed improvement	Increased income ; Employment generation; nutritional security	i) Milk and meat production, ii) Organic manure production
Stall feeding and sheep and goats		
Animal health camps		
Fodder production and fortification		
Back yard poultry		

Nutritional insecurity

Interventions	Output	Indicators and monitoring mechanism
Home stead garden (Kitchen garden)	Improved health status	Diversified Diet
	Income	

Market linkages and value addition

Interventions	Output	Indicators and monitoring mechanism
Formation of commodity groups	Reduction in wastage, income Better price	i) Quality and Market arrivals ii) Price for the produce iii) Holding capacity
Establishing of processing units		
Capacity building		
IT enabled information system		

Shortage of power

Interventions	Output	Indicators and monitoring mechanism
Solar energy	Effective use of renewable energy resources	i) Power availability ii) Increase in crop production
Biogas		
Biofuel plantation in waste land		

Pests and diseases

Interventions	Output	Indicators and monitoring mechanism
Crop rotation	Reduction in pest and diseases incidence	Reduced cost of cultivation Quality of produce Healthy
IPM and IDM		

Sericulture

Interventions	Output	Indicators and monitoring mechanism
Mulbery cultivation in dry-lands Promotion of tree mulbery	Employment generation and Income Cattle fodder	i) Silk production and income

ZACL- Bhoochetana...

Partnering for better farming

Reaching up to farmers to make farming a sustainable growth model & prosperous enterprise

Zuari Agro Chemicals Ltd

adventz – an overview

- About 3 billion USD turnover
- Advantage Axiom: 23 Companies, 1 Vision
- Adventz: is a future full of promise and opens up a whole new world of opportunity for the Group companies, individually and collectively.
- **This promise is based on four fundamental principles:**

Collaboration: Adventz seeks to leverage the power of diversity in terms of knowledge, best practices and technological excellence to spur growth in each sector.

Sustainability: Adventz makes a conscious effort to employ India's natural resources in an eco-friendly and renewable manner, so that the fruits of our labour are not only enjoyed by the current generation but also by the next.

Inclusiveness: The positive impact of what we do collectively must be felt not only by our stakeholders but by all sections of society. It must be a win-win situation for all.

Global: Adventz is a global player and will actively seek relevant opportunities across the world to augment its market coverage, technological expertise and manpower.

ZACL – Journey:

The Group Reach in Agribusiness

Dealer Network	
ZIL	2600
PPL	1550
Total	4150
CFCL	1400

Retail Network	
ZIL	17200
PPL	5000
Total	22200
CFCL	12500

Farmers Catered	
ZIL	8.5 Mn
PPL	8.0 Mn
Total	16.5 Mn
CFCL	8.2 Mn

Almost pan India coverage with group & associate companies

Group's presence in 90% of the available irrigated area of the country

Excellent brand equity in respective territories

Zuari Agro Chemicals Ltd

ZACL presence in Karnataka

- Regional offices - At Hubli, Bangalore & Bellary
- ADL, Bangalore – Well equipped with latest technology like ICP-OES
- Dealers Network – 931 in no.
- Field staffs - 57 market development staff and 72 JKSs.
- Key Activities:

Agri Input supplier

Extension activities

- Creating awareness
- Soil testing
- Farmers meeting
- Dealers training programme
- Scientists – Farmers interface
- Visit to research station
- Special projects viz. Watershed development, Soil reclamation, etc

Rationale for collaboration

- Knowledge up-gradation & experience sharing
- Integration of training facilities
- Addressing Soil health issues
- Technology dissemination as per Agro-climatic situation
- Strengthening private extn system, (e.g. Collaboration with MANAGE & Govt. of Karnataka to train Agri Inputs dealers)
- Efficient use of Public and Private sector resources

Zuari Agro Chemicals Ltd

ZACL can ..

- Farmers access through JKSs
- Integrate ADL's services
- In preparation of Soil health card, Soil map
- Empanel ZACL technical team for knowledge dissemination
- Provide training to farmers
- Provide training to Agri Inputs dealers to operationalise private extn system
- Participate in govt development programmes
- Ensuring availability of quality Agri Inputs as per location specific requirements

Zuari Agro Chemicals Ltd

ZACL Product portfolio:

adventz

Zuari Agro Chemicals Ltd

Strengthening Bhoochetana a Sustainable Agriculture Mission for Improved Livelihoods in Karnataka

Bhoochetana Mission Program (BCMP)

The vision of Bhoochetana Mission Program (BCMP) is to sustainably improve the livelihoods of small and marginal farmers in the state by developing farmers' centric, science-led inclusive market-oriented integrated farming systems participatory development approach

Mission Goal of the BCMP

The goal of the Bhoochetana Mission Program (BCMP) is to operationalise an integrated and participatory farming systems development approach for increasing agricultural productivity by 20 per cent in five years through convergence and better coordination amongst different agriculture research- extension and development sectors in the state for sustainably improving the livelihoods of the farmers through empowerment, capacity development with knowledge-based and market oriented farmers' centric partnership approach

Objectives

1. To strengthen the Bhoochetana consortium for increasing the crops (irrigated and rain-fed) yields by 20 per cent in five years in 30 districts of Karnataka through science-led development and new innovation systems
2. To strengthen the institutional mechanisms such as seed villages, village seed banks, participatory research for development (PR4D), inputs supply, agricultural machinery hiring centres, farm extension thru farm facilitators and communication systems for small and marginal farmers in the state for the DoA through capacity development, convergence, collective action, and partnerships
3. To assess the impact of climate change in different agro-eco regions of the state in terms of anticipated shifts in the crop growing periods, water availability, major crop yields, and evaluate adaptation strategies for developing climate resilient farming systems
4. To document the process of consortium functioning, learning, and impact of BCMP in terms of increased crop yields, institutional development and capacity building of different stakeholders in the state

What is Needed

- Opportune time to harness the positive energy generated in the DoA and to adopt and institutionalise the science-led development approach in the state
- Strengthen the consortium and linkages with SAUs e.g. India-EU Project, Indo-US, special projects etc.
- Urgent need to develop sustainable agricultural practices considering the vulnerability of the fragile rain-fed agro-ecosystems while intensifying the systems.
- To enhance not only the productivity but also to enhance the nitrogen use efficiency (NUE) and water use efficiency (WUE)
- Efficient soil health assessment methods
- Make small farm holders equal partners thru inclusive growth

What is New?

To assess the impact of climate change in different agro-eco regions of the state in terms of anticipated shifts in the crop growing periods, water availability, major crop yields, and evaluate adaptation strategies for developing climate resilient farming systems

- Identify suitable team members from the SAUs and form a Climate Change Team (CCT) at state level to handle assessment of impacts of climate change at micro level in a coordinated manner
- Train the CCT members and identify suitable simulation models to assess the impacts of climate change on the selected crops in the different districts and agro-eco regions in the state.

Impacts of Climate Change: Increased Dryland Areas

Climate Change Network in the State

- Collate the historical weather data sets, soils information and put them in suitable format after quality check for use in the CC models.
- Assess the impacts of climate change on changes in the agro-eco regions in the state, crop growing period, crop yields, and identify suitable crops as adaptation strategy to cope with the impacts of climate change.
- Evaluate selected adaptation strategies in the benchmark locations of the target agro-eco regions in the state.
- Develop awareness amongst the farmers in the state about the potential impacts of climate change on their crops and livelihoods and potential adaptation strategies based on the results of the participatory evaluation of adaptation strategies in the bench mark locations.

Need for Climate Resilient Agriculture

- Establish a network of researchers
- Converge researchers and development arms to provide timely information to farmers
- Understand effects of climate change at local levels and build awareness amongst stakeholders

Needed Convergence

- All IWMP watersheds have productivity enhancement activities
- All seed production blocks to be linked with Bhoochetana
- All fodder production to be linked

Strengthening Innovative Extension Systems

- Document success stories in each taluk with farmers interviews videographed with crops
- Capturing productivity gains in statistics
- Develop and adopt GIS-based yield estimates thru consortium
- Effective convergence with DE&S thru enabling policies and mechanisms

Expected Outputs

- Increased yields of major crops by 20 per cent in five years over average yields recorded in the state during first phase of BC mission project
- Increased agricultural income of the small and marginal farmers and gross value of agricultural produce in the state
- Established institutional arrangements in selected districts for seed villages, village seed banks, custom hiring centres for agricultural equipment
- Strengthening of new extension system to reach millions of small and marginal farmers

Expected Outputs (Contd..)

- Increased awareness amongst the development department staff, farmers and policy makers about the anticipated impacts of climate change
- Tested interventions as adaptation strategy for the farmers to cope with the impacts of climate change
- Trained and climate ready human resource and inventory of good success stories from the BCMP for scaling-up in other states of the country
- Sustainable intensification of agriculture for improving livelihoods of farmers thru innovative science-led and farmers centric BCMP

New Extension System to be Strengthened thru FFSs

New Extension System to be Strengthened thru FFSs

- Tablet-based knowledge sharing

Thank you!

FORMULATION OF NEW VARIETAL DEMONSTRATION DURING KHARIF-2012

CROP	VARIETY	QUANTITY		PROGRESS		BALANCE STOCKS	REMARKS
		INDENTED	RECEIVED	DEMO	QUANTITY		
UAS, DHARWAR							
Soyabean	JS-9305	20	10.51	1	0.30	10.20	
	DSB-21	5	5.40	3	0.70	04.70	Normal Yield 8 to 9 qtls/ acre
	DSB-1	5	1.80	3	0.90	0.90	

FORMULATION OF NEW VARIETAL DEMONSTRATION DURING KHARIF-2012

CROP	VARIETY	QUANTITY		PROGRESS		BALANCE STOCKS	REMARKS
		INDENTED	RECEIVED	DEMO	QUANTITY		
ICRISAT, HYDERABAD							
Groundnut	ICGV-06038(SB)	20	8.8	10	8.8		Crop failure due to scarcity of water
	ICGV-91114	20	10	10	9.00		
Redgram	ICPH-2671(SB)	0.20	0.20	4	0.20	0.20	Robust vegetative growth – not suitable for north Karnataka. Yield expected 2.5 – 3 qtls /acre

FORMULATION OF NEW VARIETAL DEMONSTRATION DURING KHARIF-2012

CROP	VARIETY	QUANTITY		PROGRESS		BALANCE STOCKS	REMARKS
		INDENTED	RECEIVED	DEMO	QUANTITY		
UAS, RAICHUR							
Paddy	GGV05-01 [Gangavati hi Sona]	90	90	30	7.50	82.50	Accepted by the Farmers because of its High yield under medium salime soil in Raichur District. Expected yield 34 qtls/acre.
	CSR-22	12	8.25	25	2.75	5.50	Accepted by the Farmers because of its High yield under High saline soil. Expected yield 23 qtls/acre.

FORMULATION OF NEW VARIETAL DEMONSTRATION DURING KHARIF-2012

CROP	VARIETY	QUANTITY		PROGRESS		BALANCE STOCKS	REMARKS
		INDENTED	RECEIVED	DEMO	QUANTITY		
UAS, RAICHUR							
Greengram	BSS-6	15	05	–	–	05	Demos not conducted due to non receipt of rain during sowing season.
Redgram	TS-3R	50	50		10	40	Crops is normal 4 to 5 qtls/acre
Sunflower	130	1.30	1.30		0.00	1.30	Crop failure due to scarcesity of water

TARGETS SALE FOR THE KHARIF 2013-2014

CEREALS

S N	CROP/ VARIETY	Sales during 2012-13	Sales Target		Availability				
			Kharif 2013	Total	C/o	Own Produ	UAS	MOU	Total
1	HYBRIDS	1299	2000	2100	725	1250	0	0	1975
2	FODDER MAIZE	0	7000	7000	0	2000	360	5000	7360
3	BAJRA	236	450	450	50	400	0	0	450
4	RAGI	13474	23930	24380	1375	14341	2518	0	18434
5	PADDY	154951	207500	235400	15975	164625	25280	0	205880
6	NAVANE	0	500	500	0	250	50	0	300
7	SAWI		25	25			25		25
	CEREALS TOTAL	171280	239905	261655	18125	183079	30253	5000	236428

PULSES

S N	CROP/ VARIETY	Sales during 2012-13	Sales Target		Availability				
			Kh. 2013	Total	C/o	Own Produ	UAS	MOU	Total
1	COW PEA	922	300	1000	0	690	0	0	690
2	GREENGRAM	3737	5015	5015	1380	0	699	1000	3079
3	BLACK GRAM	1927	4000	4250	300	500	510	2000	3310
4	REDGRAM	7299	12845	12845	1690	8090	1300	0	13080
	PULSES TOTAL	13885	22160	23110	3370	9280	4509	3000	20159

OIL SEEDS

S N	CROP/ VARIETY	Sales during 2012-13	Sales Target		Availability				
			Kh. 2013	Total	C/o	Own Produ	UAS	MOU	Total
1	GROUNDNUT	42295	65000	70000	0	11400	19000	35000	65400
2	HY SUNFLOWER	322	940	940	0	0	574	800	974
3	SOYABEAN	52749	75000	75000	0	13500	14500	46000	73000
	OIL SEED TOTAL	95366	140940	145940	0	24900	33574	81800	139374
1	GREEN MANURE SEEDS	712	4000	4000	0	0	0	4000	4000
	GRAND TOTAL	282242	406105	434705	21495	217250	84418	89800	392961

DETAILS OF VARIETAL NOTIFICATION

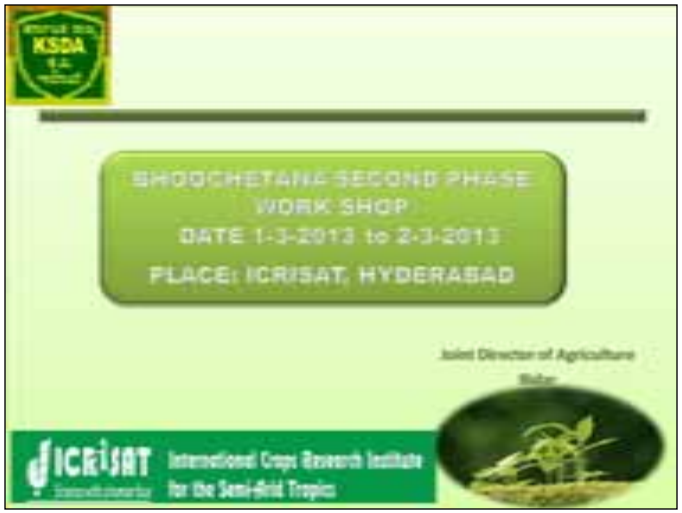
SL NO	CROP	VARIETY	YEAR OF NOTIFICATION	AGE AS ON 2012
1	JOWAR	M 35-1	1984	28
		P.YESHODA	2000	12
		CSH-14	1990	22
		CSH-16	1997	15
		CSH-23	2005	7
2	MAIZE	NAH-2049	2009	3
3	BAJRA	ICTP-8203	1988	24
4	RAGI	INDAF-7	1984	28
		INDAF-8	1987	25
		INDAF-9	1988	24
		PR-202	1976	36
		HR-911	1987	25
		MR-1	1998	14
		MR-2	1996	16
		GPU-26	2000	12
		GPU-28	1998	14
		GPU-45	2001	11
		GPU-48	2009	3
		L-5	2002	10
		MR-6(Divya)	2008	4
5	PADDY	JAYA	1978	34
		IR-20	1978	34
		T.HAMSA	1978	37
		JYOTHI	1977	35
		RASI	1982	30
		MR-272	1978	34
		MO-4 (Bhadra)	1980	32
		ABILASH	1987	25
		IET-7191	1988	24
		SPT-8204	1989	23
		IR-64	1991	21
		INTAN	1992	20
		CTH-1 (Mukthi)	1994	18
		IR-30864	1995	17
		MTU-1001	1997	15
		KRH-2	1998	14
		MTU-1010	2000	12
		IET-13901 (Tungga)	2006	6
		JGL-1798	2004	8
		JGL-384	2004	8
		UMA (MO-16)	2002	10
		TANU	2008	4
6	WHEAT	DWR-28	1965	37
		DWR-162	1983	19
		DWR-161	1988	14
		DWR-162	1965	37
7	COWPEA	C-152	1965	37
8	GREENGRAM	PS	1975	37
		SM	1975	37
		S-4	2009	3
9	BLACKGRAM	T-9	1975	37
		TAU-1	1985	27
		TAU-2	1990	19
		RASHMI (LBG-625)	2008	4
10	REDGRAM	WY-2C	1962	50
		TTB-7	1989	24
		ICPL-87119	1993	19
		BSMR-736	1999	13
		BRG-1	2006	6
		ICPL-6561	1988	25
		ICPL-[illegible]	2001	11
		[illegible] SUPER		
		BSR-1	2009	3
		BRG-2	2009	3

11	BENGALGRAM	A-1	1975	34
		VIJAY	1984	18
		JG-11	1999	12
		ICC-37	2001	11
		BG-1053	2000	12
12	SUNFLOWER	MORDEN	1982	30
		KBSH-1	1982	20
		KBSH-41	2005	7
		KBSH-42	2005	7
		KBSH-44	2003	9
		KBSH-53		
		RSFH-1	2008	4
13	SOYABEAN	JS-335	1994	18
14	GROUNDNUT	TMV-2	1975	35
		JL-24	1984	28
		SPSD-4	2004	5
		KADIRI- 7,8,9	2000	3
15	SAFFLOWER	A-1	1975	34
		A-2	1987	13
		A-300	1979	34
16	COTTON	DCH-32	1983	29
		VLC	1982	30
		MRH-44	1985	27
		DHB-105	1996	16
		DHH-11	1997	15

17	VEGETABLE			
	BEANS	A.SUVIDHA	2006	6
	BHENDI	A.ANAMIKA	2006	6
	TOMATO	PKM-1	1985	27
	RIDGEGOURD	A.SUJATHA	2006	6
	CHILLI	PUSA JWALA	1983	29
	HEBBAL AVERE	HA-3	1982	30
	BRINJAL	A.SOURAB	1986	26

YIELD ANALYSIS DATA OF BHOOCHETANA BLOCKS IN MYSORE DISTRICT

Sl No.	Crops	Yield in Bhoochetana block Qntls/ha.			Average Yield in non Bhoochetana block Qntls/ha.	Difference	%
		Average Yield	Highest Yield	Lowest Yield			
1	Paddy	55	65	40	40	15	27
2	Ragi	25	34	15	20	5	20
3	Maize	50	75	20	45	5	10
4	Cowpea	5	7	2	4.25	0.75	15
5	Avare	5	15	3	3.5	1.5	30
6	Groundnut	10	16	5	11.25	3.25	33
7	Cotton	9.75	22	4	7.25	2.5	26


KSDA
BHOOCHETANA SECOND PHASE
WORK SHOP
DATE 1-3-2013 to 2-3-2013
PLACE: ICRISAT, HYDERABAD
Joint Director of Agriculture
Bidar
ICRISAT
International Crops Research Institute
for the Semi-Arid Tropics


KSDA
WELCOME
TO
BIDAR DISTRICT (2012-13)


GENERAL INFORMATION ON AGRICULTURE
SCENARIO IN BIDAR DISTRICT
Total Geographical Area : 541765 ha
Total Cultivable Area : 453100 ha
Total Kharif sown Area : 344600 ha
Total Rabi sown Area : 108500 ha
Irrigated Area : 46420 ha
No. of Small and Marginal farmers : 159624
Small and Marginal farmers area : 169666 ha
No. of Big farmers : 78785
Big farmers area : 297053 ha
Total no. of Raita Samparka Kendras : 30
Total no. of Govt. co-operative societies for fertilizers sale : No. of PKPS
KS
Total no. of Private fertilizer dealers : 141


RAINFALL PATTERN IN BIDAR DISTRICT

MAIN OBJECTIVES OF BHOOCHETANA

- INCREASE THE FOOD PRODUCTION IN RAIN FED AREAS
- RECOMMENDATION OF MACRO AND MICRO NUTRIENTS ON BASIS OF SOIL ANAYALSIS
- TO MAINTAIN THE SOIL FERTILITY.
- INCREASE THE YIELD POTENTIAL UPTO 20% FROM AVERAGE YIELD.
- UPLIFTMENT OF SOCIO ECNOMIC CONDITION OF FARMERS OF RAINFED AREA.

BHOOCHETANA KHARIF AND RABI TARGET & AREA COVERED for 2010-11, 2011-12 and 2012-13

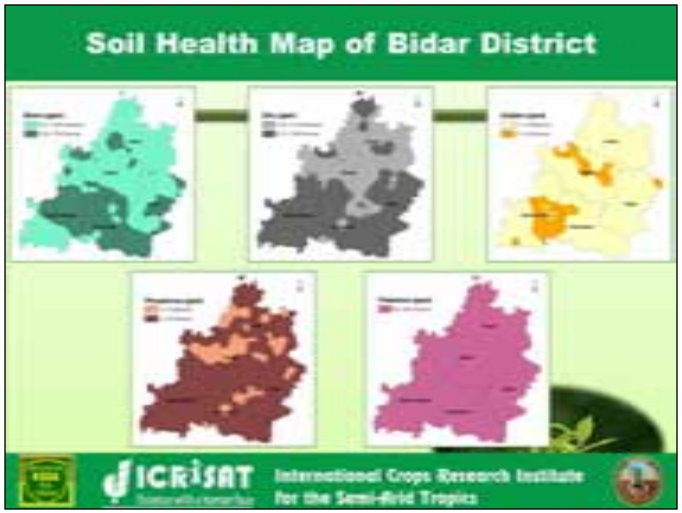
Year / Season	Crop (s)	2010-11 Target Area (ha) (20% villages)	2010-11 Area covered (ha)	2011-12 Target Area (ha) (villages)	2011-12 Area covered (ha)	2012-13 Target Area (ha) (100% villages)	2012-13 Area Covered (ha)
Kharif	Soyabean	12600	10000	22850	35057	74500	89425
	Greengram	14175	14175	24812	16624	36000	34651
	Blackgram	16275	16275	28403	29848	40000	36237
	Pigeonpea	23450	25105	41038	40217	65000	60500
	Rjowar	21322	19189	37314	27985	60700	57227
	Sugarcane					10000	5000
	Others					15000	11000
	Total	87822	80824 (92%)	153695	140711 (92%)	302000	294928
Rabi	Rabi sorghum	6388	6388	9934	8543	30000	25460
	Chickpea	12807	12807	33635	29926	52000	57445
	Safflower	4236	4236	4785	4268	11000	10820
	Others					18500	13165
	Total	23431	23431 (100%)	48354	41737 (86%)	111500	106890 (95%)
	Total	111253	104255 (93.70%)	202049	182448 (90.30%)	413500	401819 (97.17%)

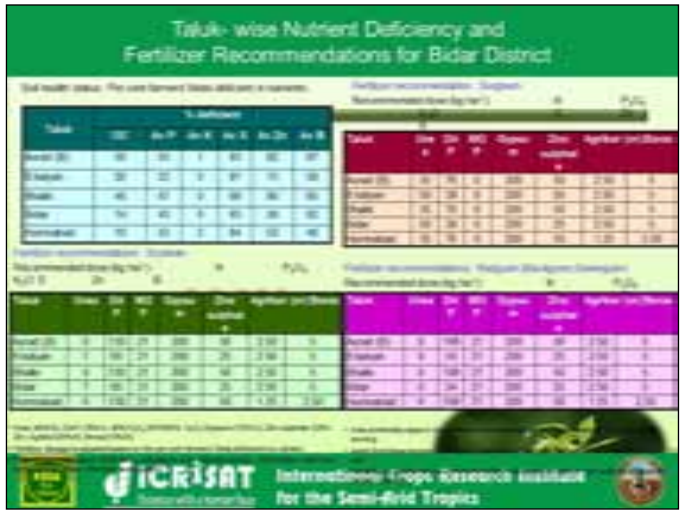
TALUKA WISE BHOOCHETANA KHARIF TARGET AREA &SOWN AREA 2012-13

Sl no	Crop	Bidar Target (ha)	Bidar Achievement (ha)	Bhalki Target (ha)	Bhalki Achievement (ha)	Basavakalyan Target (ha)	Basavakalyan Achievement (ha)	Humnabad Target (ha)	Humnabad Achievement (ha)	Aurad Target (ha)	Aurad Achievement (ha)	Total Target (ha)	Total Achievement (ha)
1	Red gram	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	Black gram	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	Green gram	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	Soyabean	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	Rjowar	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	Bajra	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	Sunflower	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	Maize	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TALUKA WISE BHOOCHETANA RABI TARGET AREA & SOWN AREA 2012-13

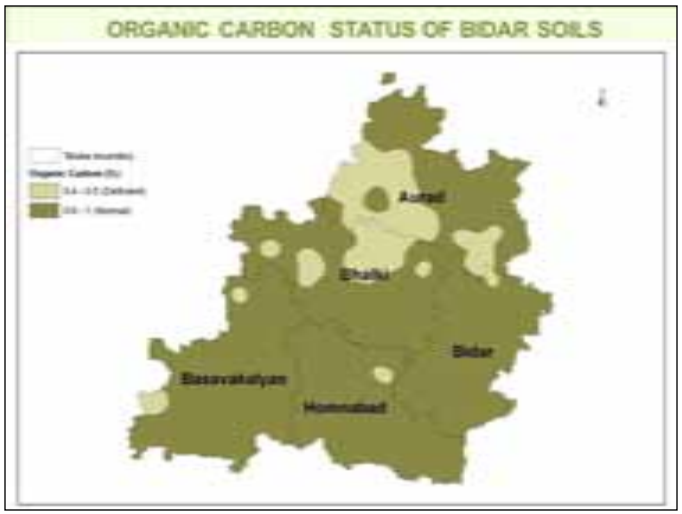
Sl no	Crop	Bidar Target (ha)	Bidar Achievement (ha)	Bhalki Target (ha)	Bhalki Achievement (ha)	Basavakalyan Target (ha)	Basavakalyan Achievement (ha)	Humnabad Target (ha)	Humnabad Achievement (ha)	Aurad Target (ha)	Aurad Achievement (ha)	Total Target (ha)	Total Achievement (ha)
1	Bengal gram	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	Jowar	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	Wheat	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	Safflower	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	Sunflower	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	Sugarcane	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	Others	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

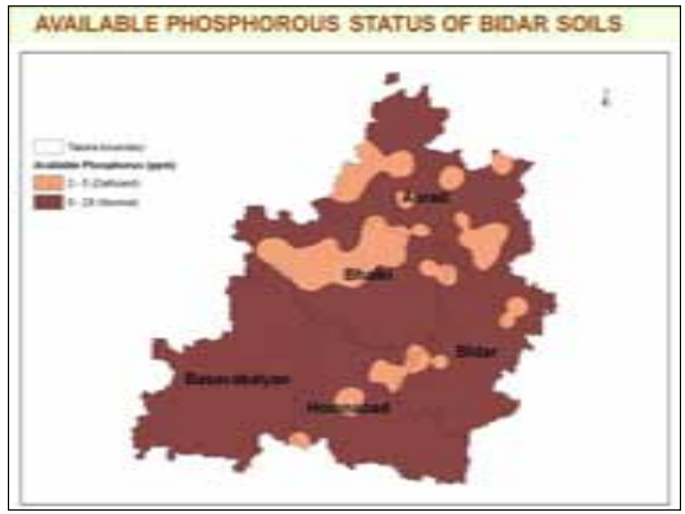

Soil Health Map of Bidar District
ICRISAT
International Crops Research Institute
for the Semi-Arid Tropics


Taluk- wise Nutrient Deficiency and
Fertilizer Recommendations for Bidar District
ICRISAT
for the Semi-Arid Tropics


PH STATUS OF BIDAR SOILS
Aurad
Bhalki
Bidar
Basavakalyan
Homnabad


EC OF BIDAR SOILS
Aurad
Bhalki
Bidar
Basavakalyan
Homnabad


ORGANIC CARBON STATUS OF BIDAR SOILS
Aurad
Bhalki
Bidar
Basavakalyan
Hommabad


AVAILABLE PHOSPHOROUS STATUS OF BIDAR SOILS
Aurad
Bhalki
Bidar
Basavakalyan
Hommabad


AVAILABLE POTASSIUM STATUS OF BIDAR SOILS
Aurad
Bhalki
Bidar
Basavakalyan
Hommabad


AVAILABLE SULPHUR STATUS OF BIDAR SOILS
Available Sulphur (ppm)
Aurad
Bhalki
Bidar
Basavakalyan
Hommabad


AVAILABLE ZINC STATUS OF BIDAR SOILS
Available Zinc (ppm)
Aurad
Bhalki
Bidar
Basavakalyan
Homnabad


AVAILABLE BORON STATUS OF BIDAR SOILS
Available Boron (ppm)
Aurad
Bhalki
Bidar
Basavakalyan
Homnabad


TALUKA WISE SOIL HEALTH CARDS


TALUKA WISE SOIL HEALTH CARD

BHOOCHETANA KHARIF AND RABI Inputs consumption for 2010-11, 2011-12 and 2012-13

Sl. No	Inputs	2010-11	2011-12	2012-13
1	Seeds (qtls)	21592	32888	55400
2	Gypsum (MT)	2367	4562	7511
3	Boron (MT)	59	286	504
4	Zinc Sulphate (MT)	265	582	820

STATEMENT OF SHOWING THE CONSUMPTION OF MICRONUTRIENT UNDER BHOOCHETANA 2010-11, 2011 – 12 AND 2012-13 IN BIDAR DISTRICT

Sl. No.	Name of the Micronutrient of (Kharif & Rabi)	2010 – 11 (kg/ha)	2011 – 12 (kg/ha)	2012-13 (kg/ha) kharif
1	GYPSUM	28.4 Kg/ha	32.0 kg/ha	26.2 kg/ha
2	ZINC	3.18 kg/ha	3.52 kg/ha	3.2 kg/ha
3	BORON	0.7 kg/ha	2.0 kg/ha	1.66 kg/ha

2012-13 Bhoochetana facilitators training at DATC Aurad

Seed Treatment Method Demo at FFS Session

Sowing with Seed cum fertiliser Drill in Bidar taluka

Bhoochetana FFS session at Basavkalyan Taluka


BHOOCHETANA FFS TRAINING SESSION AT MARKAL VILLAGE JANAWADA
HOBLI IN BIDAR TALUKA


Bhoochetana treated Greengram crop in Bidar Taluka


Bhoochetana treated soyabean crop at Markal village,
Bidar Taluka


BHOOCHETANA HYBRID SORGHUM TREATED PLOT

BHOOCHETANA FIELD DAY ON GREEN GRAM AT JANWADA VILLAGE , BIDAR TQ AND DIST.

Field day on green gram crop at Dawargoan village, Bhalki Taluka

BHOOCHETANA CCE HARVEST ON GREENGRAM CROP AT GADAGI VILLAGE, BIDAR TALUKA

Bhoochetana RedGram treated plot @ Gumma village, Bidar Taluka

Bhoochetana Treated Bengalgram plot at Gumma village, Bidar taluka

Bhoochetana Treated FFS Plot at Bidar Taluka

FIELD DAY PUBLISHING IN VIJAYWANI DAILY NEWS PAPER

RED GRAM FIELD DAY PUBLISHING IN PRAJA WANI DAILY NEWS PAPER

Bhoochetana Rabi Sorghum Treated Plot at Bhalki Taluka

FIELD DAY AT BAGDAL VILLAGE

FIELD DAY AT BAGDAL VILLAGE

KRISHI RATHA PUBLICITY UNDER BHOOCHETANA 2012-13

WALL PAINTING UNDER BHOOCHETANA

Bhoochetana Exhibition Stall at Krishi Mela, Bidar

SUCCESS STORIES UNDER BHOOCHETANA IN BIDAR DISTRICT
2012-13

1	Farmer name	Sri. Devendra s/o Shrishil Pande
2	Age	58 years
3	Address	Village: Janwada, Post: Janwada , Taluka: Bidar, Dist: Bidar, Karnataka
4	Raitha Samparka Kendra	Janwada RSK, Bidar taluka
5	Crop and water sources	Green Gram, Rainfed farming
6	Survey number	310
7	Date of sowing	25-06-2012
8	Date of harvesting	24-08-2012
9	The facility / scheme availed from Department of Agriculture and the usage per acre	Farmer received inputs such as i. Green Gram seeds (@ 5 kg / acre) ii. DAP (30 kg / acre) iii. Gypsum (80 kg/acre) iv. Zinc sulphate (5 kg/acre) v. Borax (2 kg/acre) vi. Trichoderma (200 gm/acre) vii. Neem oil (1 litre/acre)

10	Improved technologies adopted by farmer over his practices	i. Glue waste before sowing of the seeds, micronutrients were applied as per the above recommendations on basal dosage and mixed in soil ii. sowing across the slope iii. Seeds were treated with the Trichoderma iv. Maintained the recommended plant population v. Two times weeding vi. Suitable plant protection measures taken up with neem oil vii. Rainfed farming with check plot viii. Regular visit of farm facilitators and other departmental staff, ICRISAT staff for technical guidance ix. Training was availed
11	The yield levels before adoption of the improved technologies	Check plot yield : 3.00 quintals per acre
12	The yield levels after adoption of the improved technologies	Improved practices plot: 6.00 quintals per acre
13	Percentage improvement	About 3.00 quintals per acre (33 % over check plot)
14	Financial benefits by adopting Bhoochetana technologies	The present market rate of Green gram [illegible] amount spent by farmer for Bhoochetana [illegible] as the farmer got Rs. 9150/- additional
15	Follow up	The field day and field visits organized [illegible] of the bhoochetana technologies to the other farmers' [illegible]

SUCCESS STORIES UNDER BHOOCHETANA IN BIDAR DISTRICT 2012-13

Sl	Information	Details
1	Farmer name	Sri. Tukaram S/o Sudarshan Hande
2	Age	39 years
3	Address	Village: Bakura, Post Kamal nagar, Taluka: Aurad, Dist: Bidar, Karnataka
4	Raitha Samparka Kendra	Kamal nagar RSK, Aurad taluka
5	Crop and water source	Green Gram, Rainfed farming
6	Survey number	58
7	Date of planting	20-06-2012
8	Date of harvesting	24-08-2012
9	The facility / scheme availed from Department of Agriculture and the usage per acre	Farmer received inputs such as i. Green Gram seeds (@ 5 kg / acre) ii. DAP (50 kg / acre) iii. Gypsum (80 kg/acre) iv. Zinc sulphate (10kg/acre) v. Boron (2 kg/acre) vi. Trichoderma (250 gm/acre) vii. Neem oil (1 litre)
10	Improved technologies adopted by farmer over his practices	i. One week before sowing of the seeds, micronutrients were applied as per the above recommendations as basal dosage and mixed in soil ii. Planting across the slope iii. Seeds were treated with the Trichoderma iv. Maintained the recommended plant population v. [illegible] vi. Suitable plant protection measures taken up with neem oil vii. Rainfed farming with check plot viii. Regular visit of farm facilitators and other departmental staff, ICRISAT staff for technical guidance ix. Training was availed
11	The yield levels before adoption of the improved technologies	Check plot yield : 3.70 quintals per acre
12	The yield levels after adoption of the improved technologies	Improved practices plot: 5.00 quintals per acre
13	Percentage improvement	About 1.30 quintals per acre (35 % over check plot)
14	Financial benefits by adopting bhoochetana technologies	The present market rate of Green gram is [illegible] spent by farmer for Bhoochetana inputs [illegible] farmer got Rs. 4200/- additional income [illegible]
15	Follow up	The field day and field visits organized [illegible]

TALUKA WISE DRYLAND KHARIF AREA TO BE COVERED UNDER BHOOCHETNA FOR THE YEAR 2013-14

Sl no.	Crop	Bidar	Bhalki	Basavakalyan	Humnabad	Aurad	Total
		Target (ha)	Target (ha)	Target (ha)	Target (ha)	Target (ha)	Target (ha)
1	Red gram	8000	16150	12000	12850	16000	65000
2	Blackgram	7000	9000	7000	7000	10000	40000
3	Greengram	7000	9000	6000	6500	10300	38800
4	Soyabean	10000	17000	15500	10000	22000	74500
5	Hy Jowar	6600	12500	11600	9600	20000	60700
6	Bajra	300	100	5000	1500	600	7500
7	Sunflower	500	500	1000	1000	200	3200
8	Maize	600	300	500	600	300	2300
	Total	40000	64650	58600	49050	79700	292000

TALUKA WISE DRYLAND RABI AREA TO BE COVERED UNDER BHOOCHETNA FOR THE YEAR 2013-14

Sl no.	Crop	Bidar	Bhalki	Basavakalyan	Humnabad	Aurad	Total
		Target (ha)	Target (ha)	Target (ha)	Target (ha)	Target (ha)	Target (ha)
1	Bengalgram	10000	14000	8700	11200	10100	54000
2	Jowar	6000	9000	5000	4000	6000	30000
3	Wheat	1050	1350	1200	1400	1000	6000
4	Safflower	1500	4000	2000	1500	2000	11000
5	Sunflower	700	1200	1200	950	450	4500
6	Others	800	800	800	800	800	4000
	Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TALUKA WISE TOTAL DRYLAND AREA TO BE COVERED UNDER BHOOCHETNA FOR THE YEAR 2013-14

S no:	Taluka	Total Dryland area (ha)	No of Villages	Total no of facilitator	Total Lead Farmers
1	Bidar	60350	124	60	300
2	Bhalki	95000	130	95	475
3	B.Kalyan	78500	112	78	390
4	Humnabad	69100	82	69	345
5	Aurad	100550	151	100	500
	Total	403500	599	402	2010

BHOOCHETANA ACTION PLAN 2013-14

TALUKA WISE SUGARCANE AREA TO BE COVERED UNDER BHOOCHETNA FOR THE YEAR 2013-14

Sl.No.	Name of the Taluka	Name of the Crop	Target area on Hact.	No of Facilitator Required	No of lead farmers required
1	BIDAR	SUGARCANE	3000	12	60
2	BHALKI	SUGARCANE	2000	8	40
3	BASVAKLAYAN	SUGARCANE	3000	12	60
4	HUMNABAD	SUGARCANE	3000	12	60
5	AURAD	SUGARCANE	1500	6	30
	TOTAL		12500	50	250

Requirement of Inputs for 2013 - 14 of Bidar District

Taluka	Requirement of micro nutrients (MT)			50% Requirement of micronutrient (MT)		
	Gypsum	Zinc	Borax	Gypsum	Zinc	Borax
Bidar	9502	633	253	4751	316	126
Bhalki	14550	1455	485	7275	727	242
Basav Kalyan	12225	815	324	6112	407	162
Humnabad	10815	721	288	5407	360	144
Aurad	15307	1530	510	7653	765	255
Total	62399	5154	1860	31198	2575	929

Bhoochetana action plan for inputs 2013-14 of Bidar District

S no:	Taluka	Quantity Requirement of Biofertilizer (MT)				
		Rhizobium	Trichoderma	P.S.B	Azospirillum	TOTAL
1	Bidar	15	12	12	7	46
2	Bhalki	20	19	20	10	69
3	Basav Kalyan	10	15	18	8	61
4	Humnabad	17	13	12	7	49
5	Aurad	22	20	26	9	77
	Total	94	79	88	41	302

CALENDAR OF EVENTS UNDER BHOOCHETANA FOR 2013-14

TIME SCHEDULE	PROGRAMME
FIRST WEEK OF APRIL	DISTRICT LEVEL WORKSHOP
SECOND WEEK OF APRIL	TALUKA LEVEL WORKSHOP
THIRD WEEK OF APRIL	SELECTION OF FACILITATORS
LAST WEEK OF APRIL	TRAININGS TO FACILITATOR
FIRST WEEK OF MAY	BENCHMARK SURVEY
SECOND WEEK OF MAY	FARMERS REGISTERATION & SOIL SAMPLING
THIRD WEEK OF MAY	SELECTION OF LEAD FARMERS & TRAINING TO FARMERS AT CLUSTER VILLAGE
MAY 25th onwards	PUBLICITY & STOCKING OF INPUTS AT CLUSTER VILLAGE

CALENDAR OF ACTIVITIES UNDER BHOOCHETANA FOR 2013-14

TIME SHECHUDLE	PROGRAMME
FIRST WEEK OF JUNE TO SECOND WEEK OF AUGUST	INPUTS DISTRIBUTION AT CLUSTER VILLAGE LEVEL FARMERS FIELD SCHOOL SESSIONS (10) WEEKLY ONE SESSION FARMERS GROUP FORMATION, DOCUMENTATION OF CROP CONDITION AT DIFFERENT STAGES.
THIRD WEEK OF AUGUST	FIELD DAY OF DIFFERENT CROPS
FIRST WEEK OF SEPTEMBER TO LAST WEEK OF SEPTEMBER	CROP CUTTING EXPERIMENT AND DOCUMENTATION OF YIELD DATA

MAJOR ACHIEVEMENTS:-

- The yield increase in
- Green gram (33%)
- Blackgram (29.50%)
- Soyabean(30.50%)
- Hybrid Jowar(27.00)
- Redgram(31.80%)
- Bengalgram (28.70%)

Yield levels (kg/ha) under Bhoochetana Programme 2012-13 (Bidar District)

	2012-13		
Crops	Farmer Method (kg/ha)	Bhoochetana Method (kg/ha)	% Yield Increase over control
Greengram	679	903	33%
Blackgram	871	1128	29%
Soybean	1595	2077	30.3%
Pigeonpea	946	1241	31.8%
Bengal gram	1286	1655	28.78%
Hybrowar	1622	2062	27%

MAJOR ACHIEVEMENTS:-

- Improvement in Soil fertility & Health Status of Soil.

- Farmers have realized the beneficial effect of Micronutrients

BEST PRACTICES

- Use of Micronutrients coupled with organic manures like FYM, Vermicompost, Agrigold etc.
- Application of Micronutrients before sowing.

BEST PRACTICES Contd...

Adoption of Drip irrigation System in sugarcane Crop.

BEST PRACTICES Contd...

- Transplanting & dibbling method in Redgram

LUXURIANT GROWTH OF TRANSPLANTED REDGRAM

BEST PRACTICES Contd...

- Timely Sowing, Fertilizer application, Intercultural Operations and harvesting

BEST PRACTICES Contd...

Regular training of extension staff & farm facilitators regarding crop yield estimation by DS/CS and others.

BEST PRACTICES Contd...

CC experiments were conducted under the supervision of senior staff ADA(SMS) & ICRISAT Technician

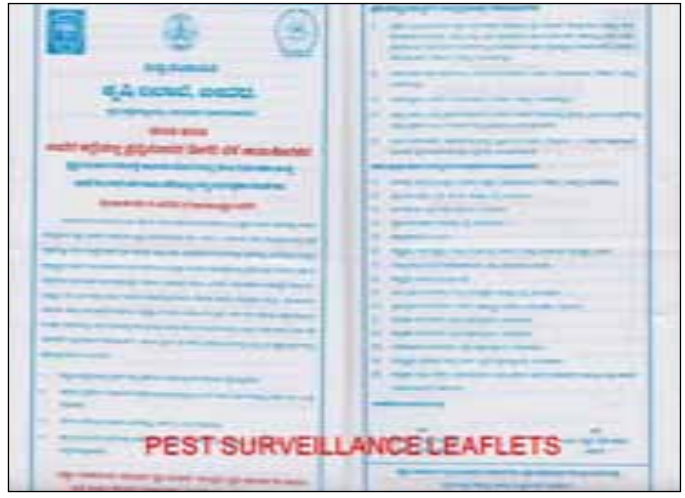
BEST PRACTICES Contd...

CC experiments were conducted under the supervision of senior staff JDA & ICRISAT Technician

BEST PRACTICES Contd...

Regular pest surveillance of different crops by rapid roving involving KSDA officials and UAS Scientist.

PEST SURVEILLANCE LEAFLETS



PEST SURVEILLANCE LEAFLETS

BEST PRACTICES

- Adoption of package distribution system comprising all the three micronutrients.

BEST PRACTICES Contd...

BEST PRACTICES Contd...

BEST PRACTICES Contd...

Publicity of Bhoochetana scheme at all gram panchayats through krishi Mahiti Andolan, (Tableau)

BEST PRACTICES Contd...

BEST PRACTICES Contd...

BEST PRACTICES Contd...

Video CD's of success Story in Bhoochetana Released at Belgaum workshop

BEST PRACTICES

- Adoption of IPM package in Bhoochetana plots through convergence of different schemes (A3P Kits).
- Providing market linkage for small farmer groups through SFAC Group in some areas.

CONSTRAINTS

- Timely inputs Prepositioning in RSK's & cluster Village points.
- Poor Packaging Material of Gypsum, Zinc Sulphate, lead to damage of bags & creating problem for handling.
- Awareness of the Programme to farming community.

SUGGESTIONS

- Standardizing the Packaging material of Gypsum & Zinc Sulphate.
- More Involvement of KVK Scientist & water shed Department. (Ex: Bidar IWMP Treated – 32000 ha in B-I& B-II)
- Effective Convergence of Different dept Schemes with Bhoochetana.

SUGGESTIONS

- Providing Technical Staff at RSK levels.
- Wide publicity of programme through famous personalities.

Press Bureau Visit to Bhoochetana treated Redgram crop at Bidar Taluka

Dr Shamsher Singh's visit to Bhoochetana Treated Redgram Plot at Bidar Taluka

VISIT BY TECHNICAL OFFICER OF DIRECTORATE OF OILSEED DEVELOPMENT,HYDERABAD

BHOOCHETANA

BEST PRACTICES ADOPTED TO INCREASE PRODUCTIVITY

JOINT DIRECTOR OF AGRICULTURE, BELLARY

- TRAINING TO FARMER FACILITATORS WELL IN ADVANCE
- CAMPAIGNING ABOUT TECHNOLOGY
- INPUT PREPOSITIONING
- ENSURE TIMELY INPUT AVAILABILITY
- FARMER FIELD SCHOOLS

- TRAINING TO FARMER FACILITATORS WELL IN ADVANCE
- CAMPAIGNING ABOUT TECHNOLOGY
- INPUT PREPOSITIONING
- ENSURE TIMELY INPUT AVAILABILITY
- FARMER FIELD SCHOOLS

- District level training for farmer facilitators(TOT)
- Taluk level trainings
- Hobli level and cluster level trainings

District level TOT is organized once before the season and taluk level trainings about three times during the season.

Hobli/cluster level trainings on need basis

- TRAINING TO FARMER FACILITATORS WELL IN ADVANCE
- CAMPAIGNING ABOUT TECHNOLOGY
- INPUT PREPOSITIONING
- ENSURE TIMELY INPUT AVAILABILITY
- FARMER FIELD SCHOOLS

- Soil fertility testing and card distribution
- Wall writing, village jathas, processions
- Hobli level ,cluster level and village level meetings

SOIL SAMPLING : BELLARY TALUK

- TRAINING TO FARMER FACILITATORS WELL IN ADVANCE
- CAMPAIGNING ABOUT TECHNOLOGY
- INPUT PREPOSITIONING
- ENSURE TIMELY INPUT AVAILABILITY
- FARMER FIELD SCHOOLS

- Timely planning for requirement of inputs
- Prepositioning of inputs at strategic locations
- Convergence with ongoing schemes for distribution
- Effective and dynamic contingent plan and continues input requirement re-assessment

- TRAINING TO FARMER FACILITATORS WELL IN ADVANCE
- CAMPAIGNING ABOUT TECHNOLOGY
- INPUT PREPOSITIONING
- ENSURE TIMELY INPUT AVAILABILITY
- FARMER FIELD SCHOOLS

- Crop management decision by agro-ecosystem analysis (AESA)
- Shift in crops as per contingent plan to suit rainfall pattern. (Jowar to Bajra & maize)
- Seed treatment campaign.
- Maintaining optimum plant population.
- Gap for every 2 mtrs in paddy.
- Adoption of INM and IPM techniques
- Inter cropping and mixed cropping.
- Conduct short studies (eg. Compensation studies)
- Experiments (Varietal trials in cotton & paddy)

- Farmers are facilitators (trainers)
- Supplement/compliment in formation of CIG/FIG
- Empowerment of farmers in better decision making

CONSTRAINTS

- Timely input supply.
- Storage and handling of bulk inputs and its distribution
- Financial risks
- Farmer facilitator conducting 2 FFS.

CROP CUTTING EXPERIMENT RESULTS OF KHARIF 2012

COTTON CROP CUTTING – SIRUGUPPA TALUK

CROP CUTTING EXPERIMENTS RESULTS OF DIFFERENT CROPS KHARIF 2012

Crop	Plot	Estimated Grain yield (Kg/) 5 x 5 mt	Acre	ha.	% increase in Yield
Paddy	Check	16.46	2634	6584	17
	Treated	19.31	3090	7724	
Bajra	Check	2.89	462	1156	22
	Treated	3.52	563	1408	
Maize	Check	6.81	1089	2723	21
	Treated	8.28	1325	3313	
Groundnut	Check	2.18	349	874	20
	Treated	2.62	419	1047	
Sunflower	Check	2.09	167	419	19
	Treated	2.49	199	498	
TUR	Check	1.02	163	408	45
	Treated	1.48	236	591	
Cotton	Check	7.095	1135	2838	35
	Treated	9.645	1543	3858	

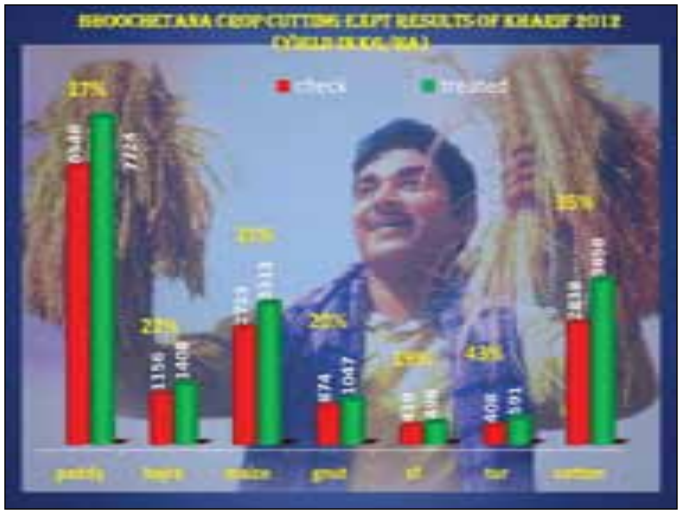

BHOOCHETANA CROP CUTTING EXPT RESULTS OF KHARIF 2012
check
treated
27%
22%
26%
43%
35%
paddy
tur
cotton


Tableau secured first prize at district level

CROPWISE TARGETS UNDER BHOOCHETANA DURING KHARIF 2013-14

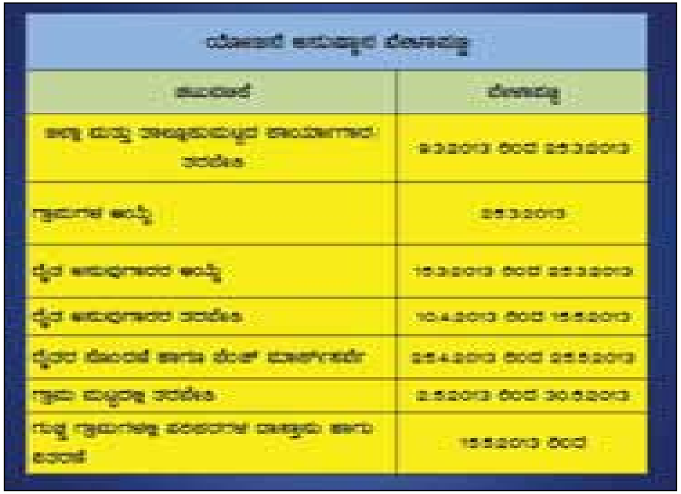
Crop	BELLARY	H B HALLI	HADAGALI	HOSPET	KUDLIGI	SANDUR	SIRUGUPPA	TOTAL
Irrg paddy	25000	1000	4000	11000	0	1000	27000	70000
Jowar	0	5500	5500	1500	6500	5000	0	25000
Maize	0	11000	22000	3000	12000	11000	0	59000
Bajra	1000	4000	3000	900	1600	1500	0	12000
Tur	750	1500	3000	500	2000	750	500	9000
Groundnut	500	6000	4000	600	43650	1250	0	56000
Sunflower	2000	6000	7000	2000	3500	3000	4500	28000
Cotton	950	0	3000	1300	750	1000	8000	15000
Grand To	31200	35000	52500	20800	70000	24500	40000	274000

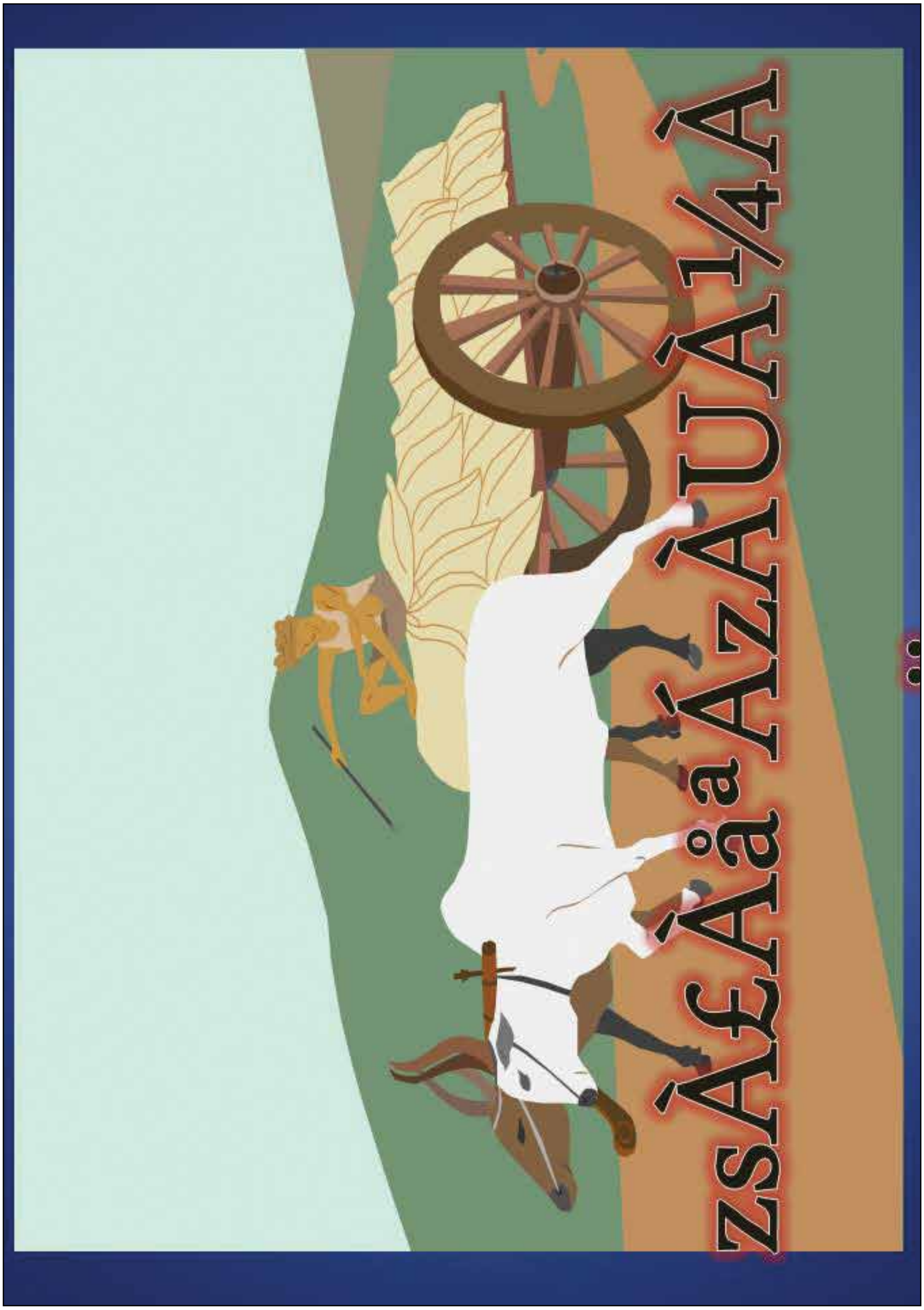
INPUT REQUIREMENTS - 2013-14

TALUKAS	BELLARY	H.B.HALLI	HADAGALI	HOSPET	KUDLIGI	SANDUR	SIRUGUPPA	TOTAL
AREA	31200	35000	52500	20800	70000	24500	40000	274000
Gypsum @ 200kg/ha (mt)	6240	7000	10500	4160	14000	4900	8000	54800
ZnSO4 @ 10kg/ha (mt)	312	350	525	208	700	245	400	2740
Borax @ 5kg/ha (mt)	156	175	263	104	350	123	200	1370
Total	6708	7525	11288	4472	15050	5268	8600	58910
50% REQUIREMENT								
Gypsum @ 200kg/ha (mt)	3120	3500	5250	2080	7000	2450	4000	27400
ZnSO4 @ 10kg/ha (mt)	156	175	263	104	350	123	200	1370
Borax @ 5kg/ha (mt)	78	88	131	52	175	61	100	685
Total	3354	3763	5644	2236	7525	2634	4300	29455

BHOOCHETANA DURING KHARIF 2013-14

TALUK	AREA	RSKs	FARMER FACILITATORS	NODE VILLAGES	FFS
BELLARY	31200	5	31	25	62
H.B.HALLI	35000	4	35	50	70
HADAGALI	20800	4	21	28	42
HOSPET	52500	3	52	51	104
KUDLIGI	70000	4	70	89	140
SANDUR	24500	3	24	60	48
SIRUGUPPA	40000	4	40	50	80
TOTAL	274000	27	273	353	546





BHOOCHETHANA 2012-13
MYSORE DISTRICT

4,21,879 Ha Kharif area of Mysore District → 2,24,310 Ha Bhoochethana area

3,71,042 Total Farmers → 1,78,984 Bhoochetana Farmers

YIELD TARGET

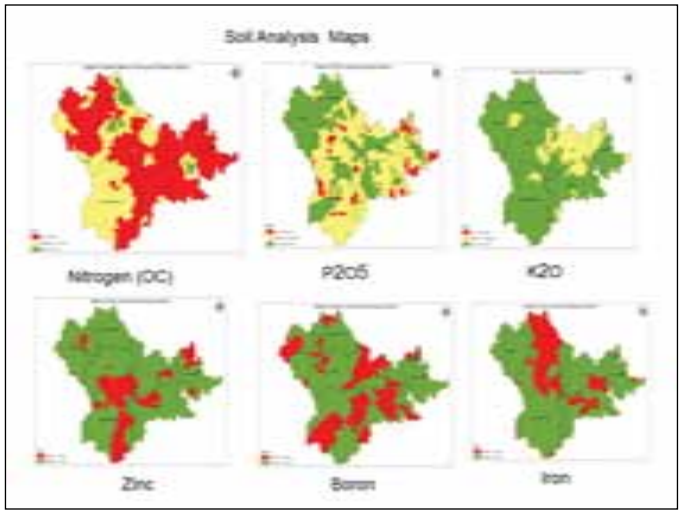
Sl. No.	Crops	Productivity (Kg / Ha)	
		State average(11-12)	2012-13 TARGET
1	Rice	2941	3239
2	Ragi	1889	1407
3	Maize	3152	3574
4	Tur	488	655
5	Blackgram	400	875
6	Greengram	269	863
7	Cowpea	502	768
8	Ground nut	748	1050
9	Cotton	340	650
10	Sugarcane	95	97

2012-13 BHOOCHETHANA - PATH

Sl. No	Calendar of Events	No. of Trainings	Date of Conduct	No. of Beneficiaries
1	District level Training Programme	1	Feb - 2011	150
2	Institutional Training Programme	7	9-2-2011 & 10-2-2011	426
3	Satellite Training	1	22-2-2011	880
4	Taluk level Training	7	May 1st week	336
5	Hobli level Training	33	May 2 -3week	2904
6	Cluster Village Training	262	May ,June and july	6550

Soil Health Status

Nutrient	deficit(%)
Organic Carbon	69
Phosphorus	12
Potash	1
Sulphur	13
Zinc	26
Boron	60
Iron	19
Copper	29
Manganese	11



Satellite Training Programme at ANSIRD Mysore

Publicity

WALL WRITING

BHOOCHETHANA TABLOU IN DASARA

FARMER FACILITATOR
OUR
STRENGTH

PUBLICITY

STOCKING OF INPUTS

1.Number of Cluster godowns ;224

slno	inputs	Indented	Supply
1	Gypsum	12150	10850
2	Zinc Sulphate	350	315
3	Borax	150	115

BEST PRACTICES

1.Seed Treatment campaign
2.Farmers Field School
3.Introduction of Maize in irrigated paddy Area
4.Introduction of Maize in tribal area
5.Popularisation of rice planter

Seed Treatment Campaigns

Nos of Campaigns :14

Nos of Farmers particpated :1722

Farmers Field School

Nos of FFS Conducted : 336
Nos of Farmers particpated :8438

FARMERS KEEN ON OBSERVATION

Introduction of Maize in Irrigated paddy Area

Area Introduced :5446Ha

No of Farmers :3630

Average Yield :50qtls/ha

Additional Income :Rs12000 /ha

Maize Replaced Rice

Introduction of Maize in tribal area

- First time introduced in Tribal area Hady in Hunsur taulk
- No of tribal farmers :146
- Total Area :538ha
- Average Yield : 51.5qtls/ha
- Net profit :Rs32000/ha

Happy tribal farmers

Popularisation of Rice transplanter

- No of farmers adopted :1024
- Total Area :824ha
- Average Yield :50qtls/ha
- Increase in Yield against normal practice:5qtls/ha

Rice planter -the way to solve labour problem

YIELD ANALYSIS DATA OF BHOOCHETANA BLOCKS IN MYSORE DISTRICT

Sl No	Crops	Yield in Bhoochetana block Qntls/ha			Average Yield in non Bhoochetana block Qntls/ha	Difference	%
		Average Yield	Highest Yield	Lowest Yield			
1	Paddy	55	65	40	40	15	27
2	Ragi	25	34	15	20	5	20
3	Maize	50	75	20	45	5	10
4	Cowpea	5	7	2	4.25	0.75	15
5	Avare	5	15	3	3.5	1.5	30
6	Groundnut	10	16	5	11.25	1.25	10
7	Cotton	9.75	22	4	7.25	2.5	26

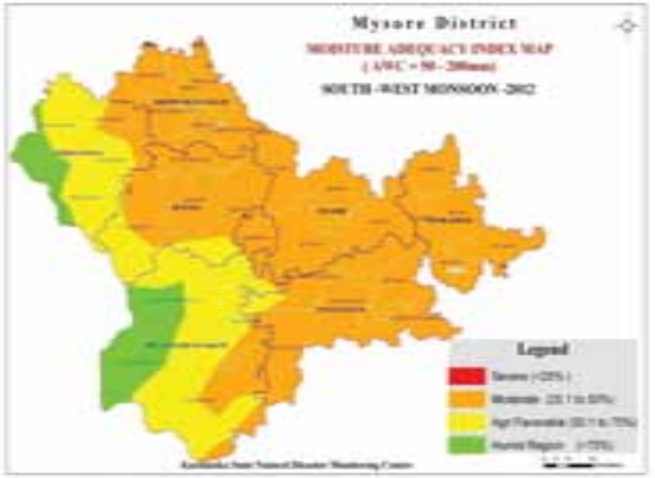
Constraints

1.Deficit in rainfall

2.Shortage of staff to superwise FF'S work

Talukwise rainfall for the year 2012

Slno	Taluk	Annual Rainfall	2012 rainfall	deficit	% deficit
1	Hdkote	925	555.2	-370	40
2	Hunsur	788.1	408.6	-380	48
3	KR nagar	759.4	368.4	-391	51
4	Mysore	755.6	517.5	-238	32
5	Nanjangud	738.7	477.4	-261	35
6	Periyapatna	875.7	530.1	-346	39
7	T.Marsipura	759.6	385.3	-374	49
	District	**800.3**	**463.2**	-337	**42**



Success Story of Rice Transplanter

1.Farmer Name:Sri Sudhir Nayak

2.Village :Horalvadi

3.Taluk :Nanjangud

4.Area :3 Acre

5.Variety :BR2655

6.Yield :36.6qtls/Acre

7.Net Profit :RS 28500/-

Success Story of Groundnut crop in rainfed area in Banalli hundi village

2012-13 Area	1339ha
Area under bhoocheth ana	500
2012-13 distarig yield	6.25qtls/ha
Bhoocheth ana plot yied	8.7qtls/ha

One protective irrigation with micronutrients application – satisfactory yield

Success Story of maize in conventional paddy area

Normal Area	250ha
2012-13 area	2000ha
Area under bhoochethana	500ha
Normal yield	40qtls/ha
Bhoochethana plot yield	48qtls/ha

Under moisture deficit conditions Successful maize crop instead of paddy

2013-14 Bhoochethana Stepping Forward

2013-14 proposed area under bhoochethana

Crop	Area(ha)
Ragi	44000
Jowar	5000
Maize	32000
Redgram	3000
Green gram	6000
Black Gram	10000
Avare	15000
Cowpea	28000
Groundnut	6000
Sunflower	1000
Cotton	44000
Total	195000

Crop	Area(ha)
Paddy	90000
Sugarcane	7000
Total	97000

Grand Total	292000

2013-14 Bhoochethana

Area(ha)	292000
Farm Facilitators	584
Lead farmers	2920
number of villages	1138
FFS	584
Number of cluster godowns	292

Input Requirement

Inputs	Quantity
Gypsum(100 kg/ha)	29200
Zinc Sulphate (5 kg/ha)	1460
Borax (2 kg/ha)	584
Bio fertilizer(0.5 kg/ha)	146

CALENDER OF EVENTS OF BHOOCHETHANA 2013-14

Activities	Period
Distict & Taluk level Workshop	Mar-2013 Dist Level workshop April 2013 Taluk level workshop
Selection of villages	April 2013 Taluk level workshop
Selection of Farm facilitators	April 2013 Ist fortnight
Farm facilitators Traininig	May-13
Regn of farmers and Bench Mark survey	April 2013 2nd fortnight
Hobli level Training	April 2013 and May 2013
Cluster Village Training	April 2013 to August 2013

BHOOCHETANA PHASE-2 WORKSHOP

VENUE:- ICRISAT, HYDERABAD
DATE:- 01-03-2013

Vision of Bhoochetana -Phase 2

The vision of Bhoochetana Phase-2 is to sustainably improve the livelihoods of all categories of farmers in the State by developing farmers' centric, science-led inclusive market-oriented Integrated Farming Systems participatory development approach.

Mission Goal of phase 2

The goal of the Bhoochetana Phase-2 is to operationalize an integrated and participatory knowledge-led farming systems development approach for increasing agricultural productivity by 20 per cent in five years through convergence and better coordination amongst different agriculture research-extension and development sectors in the State for sustainably improving the livelihoods of the farmers through empowerment, capacity development with knowledge-based and market oriented farmers' centric partnership approach.

THE PROPOSED CONSORTIUM PARTNERS WITH THE DEPARTMENT OF AGRICULTURE

- The Karnataka State Seeds Corporation (KSSC),
- Karnataka State Disaster Management Center (KSDMC),
- Watershed Development Department (WDD),
- Department of Horticulture (DoH),
- Department of Economics and Statistics (DES),
- Community-based Organizations (CBOs)
- State Agriculture Universities and University of Horticulture,
- Technical Consultancy(ICRISAT)

Objectives

To strengthen the Bhoochetana consortium for increasing the crop (irrigated and rain-fed) yields by 20 per cent over the first phase of Bhoochetana in five years in 30 districts of Karnataka through science-led development and new innovation systems.

To strengthen the institutional mechanisms such as seed villages, village seed banks, participatory research for development (PR4D), inputs supply, agricultural machinery hiring centers, farm extension through farmer facilitators and communication systems for all categories of farmers in the State for the Department of Agriculture through capacity development, convergence, collective action, and partnerships.

Contd.....

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To assess the impact of climate change in different agro-eco regions of the State in terms of anticipated shifts in the crop growing periods, water availability, major crop yields, and evaluate adaptation strategies for developing climate resilient farming systems.

To document the process of consortium functioning, learning, and impact of BCMP in terms of increased crop yields, institutional development and capacity building of different stakeholders in the State.

KHARIF -2013-14: PROPOSED DISTRICT-WISE AREA TARGETS

ACTION PLAN FOR 2013

DISTRICT	RAINFED AREA Target (in Hectares)	Irrigated Paddy	Irrigated Sugarcane	TOTAL
Bagalkot	97500	0	50000	147500
Bangalore Rural	54000	0	0	54000
Bangalore urban	20000	0	0	20000
Belgaum	326000	5000	80000	411000
Bellary	204000	70000	0	274000
Bidar	292000	0	20000	312000
Bijapur	298000	0	6000	304000

District	Rainfed Area	Irrigated Paddy	Irrigated Sugarcane	TOTAL
Chamrajnagar	112000	16000	4000	132000
Chickballapur	125500	0	0	125500
Chikkamaglur	129500	8000	0	137500
Chitradurga	285000	0	0	285000
D.Kannada	25000	0	0	25000
Davangere	227000	55000	3000	285000
Dharwad	153000	0	0	153000
Gadag	180000	0	0	180000

District	Rainfed Area	Irrigated Paddy	Irrigated sugarcane	TOTAL
Gulbarga	484000	0	6000	490000
Hassan	193000	35000	2000	230000
Haveri	261000	25000	0	286000
Kodagu	32500	0	0	32500
Kolar	87000	0	0	87000
Koppal	160000	35000	0	195000
Mandya	72000	55000	20000	147000
Mysore	195000	90000	7000	292000

District	Rainfed Area	Irrigated Paddy	Irrigated sugarcane	TOTAL
Raichur	155000	96000	0	251000
Ramnagar	94000	0	0	94000
Shimoga	75000	60000	2000	137000
Tumkur	407000	15000		422000
U.Kannada	75500	0	0	75500
Udupi	35000	0	0	35000
Yadgiri	135500	35000	0	170500
TOTAL	**5000000**	**600000**	**200000**	**5800000**

PROGRAMME IMPLEMENTATION GUIDELINES FOR 2013-14

GUIDELINES

Sl. No	Component	Existing	Proposed modifications / Additions
1	Selection of farmer facilitators	Educational qualification not specified	Minimum SSLC
2	Duration of Farmer facilitators	120-180 days per season	180 days for kharif season predominant districts, 270 days for kharif+Rabi crop season districts and sugarcane
3	Area per Farmer facilitators	500 ha in dry land area, 250 ha in Malnad and Coastal area and paddy & sugarcane crops	500ha for all dry land, paddy and sugarcane crops. 250 ha in Malnad and Coastal area

GUIDELINES

Sl. No	Component	Existing	Proposed
4	Honorarium to farmer facilitators	Rs 150 per working day	Rs. 200 per working day
5	Lead farmer	Five lead farmers per farmer facilitator for 15 days @Rs 95 per day	Two lead farmers per farmer facilitator @ Rs. 100 per day for 15 days. Or Engaging one science graduate per hobli @Rs 8000 per month for six months in kharif season predominant districts, nine months for kharif+Rabi crop season districts and Paddy & sugarcane

GUIDELINES

Sl. No	Component	Existing	Proposed
6	**Trainings**		
a		•Institutional training •District level(Two workshops) •Taluk level(two workshops) •Hobli and cluster trainings(Two trainings per season)	Additional trainings •Two days training to all extension officers on FFS and climate change studies •Streamlining of bimonthly workshops
b	**Field days**	Priority to be given for New variety and innovative components	
7	Purchase of T-shirts , Bags and caps for Farmer facilitaters under publicity component		
8	**Writings**	Wall writings in villages	In addition to wall writings, captions to be written on tractors and other hitech machineries

GUIDELINES

Sl. No	Component	Proposed
9	NEW CONCEPTS	
a	District level Technical Committee	JDA: Chairman Members: DWDO, DDA(IM&T), ADA(SMS/HQ), KVK Head/ICRISAT Scientist/Any one Taluk ADA JOB CHART: To approve the district action plan, Review and recommend modifications in recommendations based on local problems/ recommend innovative technologies for adoption
b	**Demonstrations**	✓ 5 ha Bhoochetana technology demonstration per hobli @ Rs.2000/ha. under the supervision of KVK Scientist. ✓ Field days to be conducted in these demonstration plots.

GUIDELINES

Sl. No	Component	Proposed
	NEW CONCEPTS	
C	Exposure visits	Two days exposure visit to other districts for a batch of 50 comprising of extension officers, farmer facilitators and farmers @ Rs 25000 per visit
d	Seed village and seed bank concept	✓KSSC to finalise district wise seed production plan in consultation with the district level technical committee ✓Varietal replacement plan ✓Action plan for setting up of seed bank

GUIDELINES

Sl. No	COMPONENT	PROPOSED
	NEW CONCEPTS	
E	Climate resilient studies	ICRISAT to finalise action plan in consultation with KSNDMC and State Universities
F	ICT Tablet based Extension	✓To start on pilot basis in four districts. ✓ICRISAT to monitor this pilot extension.
G	Setting up of Kiosk	✓In Bangalore, Dharwad, Raichur and Shimoga districts under the guidance of Universities. ✓Universities to monitor the functioning of Kiosks
H	Incentives/Awards	✓For best performing Farmers/ farmer facilitators/ Extension officers/ Farmer field schools. ✓Selection criteria needs to be deliberated

GUIDELINES

SL NO	Component	Proposed
	NEW CONCEPTS	
I	Creative components	Competitions for farmers
J	Introduction of other innovative components	
10	**Others to continue as per 2012-13 guidelines**	

ESTIMATED BUDGET REQUIREMENT

COMPONENT	IAES	SEP	RKVY	TOTAL
Farmer Facilitator	0	0	2220	2220
Lead farmer	500	0	260	440
Hiring of godowns	200	0	200	200
Wall writings	300	0	292	292
Farmers Field School	600	0	810	1410
Mobility to cluster godowns	75	0	30	105
Training and awareness	600	0	600	1200
Input subsidy	500	6000	500	7000
ICRISAT Consultancy	417	0	0	417
Innovative Component	200	0	200	2000
TOTAL	**6000**	**6000**	**5200**	**17200**

ROLES AND RESPONSIBILITIES OF CONSORTIUM PARTNERS

ICRISAT

- *To give technical recommendations*
- *Participation in district level technical committee meetings*
- *To appoint and monitor the activities of research technicians*
- *To monitor crop cutting experiments and documentation*
- *To submit half yearly and annual reports inclusive of all activities of Bhoochetana*
- *To pilot run Tablet based extension in four districts*
- *To come out with action plan for climate resilient studies and give suitable recommendations*

ROLES AND RESPONSIBILITIES OF CONSORTIUM PARTNERS

KSNMDC

Provide guidance for action plan climate resilient studies and give suitable recommendations

KSSC

- To monitor seed production programme
- To introduce new varieties
- Provide guidance for setting up of Seed banks

UNIVERSITIES

- Provide guidance and monitor the functioning of KIOSKS
- To guide Climate resilient studies and give suitable recommendations
- Capacity building activities
- To make action plan for multiplication of new varieties

ROLES AND RESPONSIBILITIES OF CONSORTIUM PARTNERS

Department of Economics and Statistics

- To utilize the services of farmer facilitators for crop cutting experiments in the selected villages
- Provide guidance for crop cutting experiments in the bhoochetana plots

EXPECTED OUTPUTS

Increased yields of major crops by 20 per cent over average yields recorded in the state during first phase of four years of BC mission project.

Through village seed banks, seeds of improved crops will be available for the farmers.

Ready inventory of the tested interventions as adaptation strategy for the farmers to cope with the impacts of climate change and climate resilient farming systems for the farmers.

EXPECTED OUTPUTS

- Established institutional arrangements in selected districts for seed villages, village seed banks, custom hiring centers for agricultural equipment
- Strengthening of new extension system to reach millions of farmers through Farmer Facilitators, lead farmers and cell phone-based information system for the farmers in the State.
- Detailed documentation of the innovative science-led and farmers centric BCMP consortium for PR4D for sustainable intensification of agriculture for improving livelihoods of farmers.
- Trained and climate ready human resource to handle the impacts of climate change in the state and to build the resilience of the farmers in the state. This would also result in a better convergence of agriculture related development programs.

THANK U

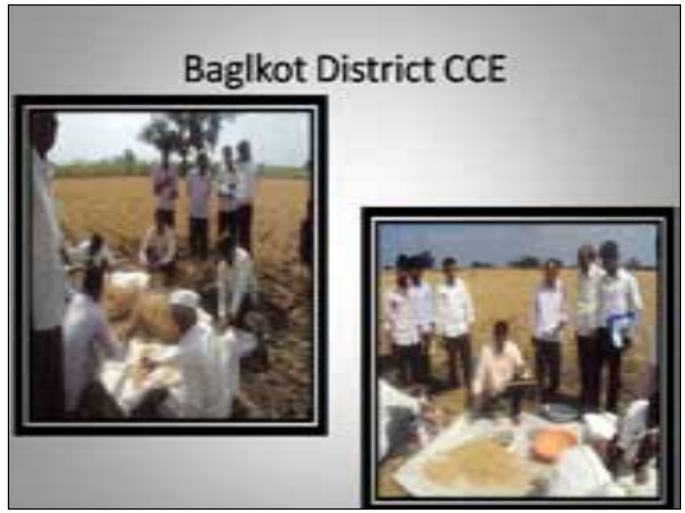

We turned Every Stone that was Instrumental in our Effort
to make Bhoochetana a Mission and not just a Scheme
Busy in sowing Courogram


Input application and seed treatment demonstrations


Wall writings
Wide Publicity to create awareness
News paper
publication


Training regarding Agriculture related activities and Field days under
Bhoochethana Scheme


BHOOCHETHNA FARMER FILED SCHOOL


Baglkot District CCE


Objectives
THANK U
Contd.....

CGIAR; Consortium initiative & Mission mode "Bhoochethana-II"

"INPUT MANAGEMENT- STRATEGIES & CHALLENGES"

Presented by :

Dr.H.Subbaiah
Addl. Director of agriculture
(Organic Farming)

Input Management – Challenges

- Study of Soil Health analysis since 2008 to 2012
- Diagnosing of macro & micro nutrient status – gave a big headway.
- Nutrient status mapping and fertility status for all the 30 districts.
- Taluk wise, crop wise nutrient recommendations and fertilizer dosages for major crops were finalized zone wise.
- INM & NRM's - most important
- Raichur (Sindanoor Tq) & Bijapur (BijapurTq) – Alkalinity problem; Gypsum application, Drainage, Green manure & Salt tolerant crops

Distribution of Micronutrients in Bhoochethana Programme

Year	Season	Area covered	Qty. consumed (MT)			Nutrients (Kg./Ha)		
			Zinc	Gypsum	Borax	Zinc	Gypsum	Borax
2009	K	2.25	372	4309	53	1.65	19.15	0.23
	R	0.59	-	-	-	-	-	-
2010	K	12.72	2723	35376	389	2.27	29.50	0.32
	F	3.70	362	5395	113	1.09	16.86	0.34
2011	K	2844	8775	96234	2781	3.46	37.90	1.10
	R	6.60	1678	12475	432	2.94	21.87	0.76

- Steady increase in consumption of micronutrients- Reanalyze and revise the recommendation.
- Farmers responded as results are highly encouraging.
- Large scope for coming projects

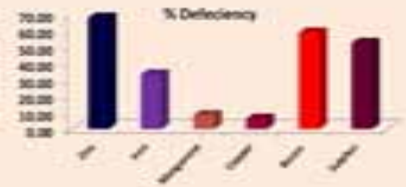
Soil Health analysis and Input Management - location specific science led initiative

- 6.95 lakhs soil samples analysed (2008-09 to 2012-13)
- Soils are poor in N, P and deficient in Boron, Zinc and Sulphur.
- Use of Micronutrients-encouraging results.
- Large quantities of soil amendments.
- Application of Bio fertilizers
- Incorporation of huge quantities of Organic manures, Vermi compost, City compost, Green manures etc- ***Emphasizing INM***

- Gypsum application from 4309 MT to 1,12,270MT.(Requirement for Kharif 2013 - 5.80 lakh MT)
- $ZnSO_4$ 372 MT to 14,422MT (Kharif 2013 -25,000MT)
- Borax 53MT to 4092MT (Kharif 2013 - 14,500MT)
- Soil Health Cards (individual), Wall painting on soil fertility status.
- Internalization of Soil Health Manage -ment has to be a continuous process.

Soil Fertility Status-2008-12

Micronutrients	% Deficiency	% Adequate
Zinc	67.34	32.66
Iron	32.95	67.05
Manganese	8.28	91.71
Copper	6.10	93.90
Boron	58.22	41.78
Sulphur	52.00	48.00



Soil fertility status-2008-12

	% Acidic	%Neutral	%Alkaline
p H	22.74	71.37	5.89

	% Normal	% Critical	% Injurious
EC	94.76	4.48	0.76

	% Low	% Medium	% High
Nitrogen	40.41	37.55	22.04
Phosphorus	28.13	43.84	28.04
Potash	7.27	33.54	59.18

Soil Fertility Status Of Tumkur

	% Normal	% Critical	% Injurious
EC	99.16	0.57	0.27

	% Acidic	%Neutral	%Alkaline
p H	23.39	73.49	3.12

	% Low	% Medium	% High
Nitrogen	91.15	7.82	1.03
Phosphorus	17.76	55.22	27.02
Potash	8.21	44.20	47.47

- Application of FYM and bio -fertilizers to improve soil organic carbon status and soil microbial growth

Micronutrients	% Deficiency
Zinc	45.66
Boron	91.00
Sulphur	92.00

Soil Fertility Status Of Chikmagalur

	% Normal	% Critical	% Injurious
EC	100	0	0

	% Acidic	%Neutral	%Alkaline
p H	36.41	58.15	5.45

	% Low	% Medium	% High
Nitrogen	**38.07**	**34.13**	**27.79**
Phosphorus	**14.74**	**29.44**	**55.82**
Potash	**6.26**	**33.22**	**60.52**

- **Acidity can be overcome by application of agricultural lime or dolomite**
- **Application of rock phosphate in heavy rainfall areas to improve fertilizer use effeciency .**

Micronutrients	% Deficiency
Zinc	**69.81**
Boron	**43.00**
Sulphur	**34.00**

Soil Fertility Status Of Raichur

	% Normal	% Critical	% Injurious
EC	99.92	0.08	0.00

	% Acidic	%Neutral	%Alkaline
p H	0.03	96.93	3.04

	% Low	% Medium	% High
Nitrogen	2.10	93.60	4.30
Phosphorus	1.81	92.56	5.64
Potash	0.47	49.86	50.67

- Application of Gypsum to reclaim alkali soils followed by good drainage .
- Green manuring in-situ to improve soil health.
- Application of FYM atleast once in two years.
- Growing salt tolerant crops like paddy, sugarcane, maize etc

Micronutrients	% Deficiency
Zinc	79.00
Boron	39.00
Sulphur	64.00

Soil Fertility Status Of Bijapur

	% Normal	% Critical	% Injurious
EC	92	6	2

	% Acidic	%Neutral	%Alkaline
p H	2	86	23

	% Low	% Medium	% High
Nitrogen	20.5	74.5	5
Phosphorus	30	60	10
Potash	3	20	77

- Application of Gypsum to reclaim alkali soils followed by good drainage .
- Green manuring in-situ once in a year to improve soil health.
- Application of FYM atleast once in two years.
- Growing salt tolerant crops like paddy, sugarcane, maize etc

Micronutrients	% Deficiency
Zinc	89.00
Boron	43.00
Sulphur	77.00

SEED DISTRIBUTION

Seed distribution during 2012-13 (As on January 2013)

(Quantity in quintals)

Particulars	Kharif 2012		Rabi/Summer 2012-13		Total	
	Tagret	Achievement	Tagret	Achievement	Tagret	Achievement
Cereals	5111110	463741	192430	142894	703540	607635
Pulses	61440	48377	251400	198361	292840	246738
Oilseeds	308140	301148	95150	89083	403290	390231
Cotton	8435	8894	2432	1922	8865	8029
TOTAL	887125	820160	521418	432258	1408535	1252418

3. Seed distribution under Subsidy 2012-13:

➢Seeds are distributed under subsidy under Central Govt.'s Rashtriya Krishi vikasa Yojana(RKVY), and State Govt.'s Seed Distribution and other Investment scheme.

➢During 2012-13 an amount of Rs. 30.00 crores under RKVY and Rs. 100.00 crores under Seed Distribution and other Investment scheme is earmarked for this purpose.

Season wise subsidy seed distribution during 2012-13.

Particulars	Kharif 2012	Rabi/Summer 12-13	Total
Seed distribution (Lakh. qtls)	4.88	1.23	6.11
Amount utilised (Lakhs.)	8833.61	2408.09	11241.70
No. of farmers benifited.	18.58	4.20	22.78

Seed Replacement Rates achieved during last two years and target for 2013-14 (in %)

Sl.No	Crop	2011-12 Target	2011-12 Ach	2012-13 Target	2012-13 Ach (30-12)	2013-14 Target
1	Paddy	34.0	41.0	36.0	47.0	37.0
2	Ragi	31.0	32.0	31.0	34.0	33.0
3	Jowar--Var.	26.0	30.0	30.0	29.0	33.0
4	Bajra-- Var	31.0	42.0	35.0	37.0	37.0
5	Wheat	23.0	23.0	30.0	30.0	33.0
6	Redgram	26.0	13.0	27.0	20.0	33.0
7	Greengram	23.0	21.0	28.0	29.0	33.0

Continued

Sl.No	Crop	2011-12 Target	2011-12 Achie	2012-13 Target	2012-13 Achie (30-12)	2013-14 Target
9	Cowpea	23.0	21.0	30.0	26.0	33.0
10	Bengalgram	26.0	31.0	30.0	33.0	33.0
11	Groundnut	15.0	29.0	25.0	29.0	33.0
12	Sunflower--Var	26.0	30.0	30.0	25.0	33.0
13	Safflower	22.0	28.0	24.0	30.0	33.0
14	Soybean	87.0	89.0	88.0	90.0	89.0
15	Castor	16.0	16.0	20.0	20.0	33.0
16	Cotton--Var.	17.0	36.0	25.0	39.0	33.0
17	All Hybrids	100.0	100.0	100.0	100.0	100.0

Requirement and availability of seeds for distribution during Kharif 2013 (Departmental programmes/ General Distri.) (in qtls)

Sl No.	CROP	Requirement	Agency wise supply programme KSSC	NSC	SAU	KOF	Private	TOTAL	SURPLUS/ DEFICIT
1	PADDY	249469	208779	19000	25999	0	38075	291844	42375
2	RAGI	25090	11290	500	1077	0	8848	25219	106
3	MAIZE	172500	1500	200	1060	0	172799	175559	3059
4	JOWAR	16500	1600	0	0	0	16155	17755	1255
5	BAJRA	12638	800	0	122	0	15960	16882	4245
6	Minor Millets	3300	260	0	250	0	2790	3300	0
Total Cereals		479498	228220	19700	28818	0	255665	538524	59107
7	ARHAR	56232	8405	400	4051	0	28617	41473	-14759
8	GREENGRAM	22100	1465	100	1247		8184	10996	-12104
9	URD	7582	1575	500	1263	0	2458	5791	-1791
10	COWPEA	7613	1000	500	760	0	5364	7624	11
11	FIELD BEAN	8434	0	0	0	0	8475	8475	41
12	HORSEGRAM	4125	0	0	0	0	4129	4129	4
Total Pulses		104296	12445	1500	6721	0	55147	79888	-26468

Continued

Sl No.	CROP	Requirement	Agency wise supply programme					TOTAL	SURPLUS/ DEFICIT
			KSSC	NSC	SAU	KOF	Private		
13	GROUNDNUT	346500	12256	16000	11685	60000	156138	291579	-54921
14	SUNFLOWER	14240	0	0	706	125	14620	15745	1505
15	CASTOR	1485	0	0	0	0	1500	1500	15
16	SESAMUM	1980	0	0	0	0	2011	2011	31
17	Niger	2310	0	0	0	0	2315	2315	5
18	Linseeds	1238	0	0	0	0	1248	1248	10
19	Mustard	83	0	0	0	0	85	85	2
20	SOYBEAN	111250	20000	3008	22458	5500	64844	115810	4560
	Total Oilseeds	478086	32256	19000	34841	100625	243111	430333	-48753
21	COTTON	6880	0	0	0	0	7384	7384	504
	Total Cotton	6880	0	0	0	0	7384	7384	504
	Grand Totals	1066748	271016	40700	70381	100625	561227	1044048	-25701

NOTE: 1. State requirement : as per the Seed Replacement Rates for 2013

2. Seed suppliers will be informed to meet the shortfall.

Reduce seed rate usage by following methods:

Paddy: Encourage drill sowing.
Adoption of SRI method Extensively.

Ragi: Encourage drill sowing.
Follow Transplantation method.

Sugarcane: Usage of One eyed disease free cane.
Sowing in pair rows with wider spacing.

Groundnut: Usage of good quality seeds.
Follow Dibbling method.

- Effective implementation of Seed treatment campaigns.
- Draw service Seed samples from farmer saved seeds and subject them for analysis to confirm germination and ensure seed treatment is done.
- Seeds produced by purchase through department, publicity should be given to use such seeds for forth coming 3 seasons.

Measures taken to overcome Seed shortage:

- Seed producers meetings are conducted to discuss shortage of seeds and informed them to meet shortage of seeds.
- Seed producers are advised to give priority for recently released varieties (< 10 year old varieties).
- Seed producing agencies to concentrate on increasing area under Certified seed production.
- Seed producers should supply treated seeds to farmers with treated chemicals and biofertilizers.

New varieties that need to be popularised

1	Paddy	Uma
	Paddy	JGL-1798
	Paddy	Athira
	Paddy	M-Triveni
	Paddy	IET-13901
	Paddy	Thanu
	Paddy	BR-2655
	Paddy	Akshaydhan
	Paddy	MGD-101
	Paddy	MAS946-1
	Paddy	MAS-26
	Paddy	NLR-34449
	Paddy	IS Masuri
	Paddy	Indrani
	Paddy	R-1
	Paddy	Yeramallelu
	Paddy	IET-13904
2	Ragi	MR-1
	Ragi	MR-2
	Ragi	VLM-324
	Ragi	MR-6
	Ragi	GPU-48/54
	Ragi	ML-365
3	Jowar	CSV-22
	Jowar	Vasudha
	Jowar	CSV-23
	Jowar	AKMS-144
	Jowar	AKR-150
	Jowar	S-4'-1'
	Jowar	Mukthi
4	Maize	EH-434042
	Maize	DH-1
	Maize	NAH-2049
	Maize	Arjun
	Maize	KDMI-18
	Maize	C14XC15

Continued:

5	Wheat	DWR-1006
	Wheat	DDK-1028
	Wheat	URS-415
	Wheat	MACS-6222
6	Cowpea	KBC-2
	Cowpea	PK
7	Greengram	SML-668
8	Redgram	BRG-1
	Redgram	BRG-2
	Redgram	WRP-1
	Redgram	TS-3R
	Redgram	ICPL-87
	Redgram	PRG-158
	Redgram	Corg-7
9	Bengalgram	Jaki-9218
	Bengalgram	JG-14
	Bengalgram	BCD-102
	Bengalgram	BCD-106
10	Sunflower	KBSH-44
	Sunflower	KBSH-41
	Sunflower	KBSH-53
	Sunflower	CMS234A
	Sunflower	CMS335A
	Sunflower	CMS17A
	Sunflower	RHA85C-1
	Sunflower	RHA8D-1
11	Soyabean	JS-9305
12	G-Nut	GPBD-4
	G-Nut	TPG-41
	G-Nut	K-6
	G-Nut	ICGV-9114
	G-Nut	R-2001-2
	G-Nut	SB-XI
	G-Nut	ICGV-00350

Swabeejabhivruddhi Yojane

- To motivate the farmers and to increase the area under seed production, the scheme Swabheejabhivruddhi Yojane is being implemented in the state from 2013-13.
- This scheme is being implemented in coordination with the State Seed Producing Organizations like KSSC, KDF., NSC & State Agriculture Universities.
- This scheme is implemented at hobli level in the cluster villages.
- Under Swabeejabhivruddhi yojane following components are facilitated to seed producing farmers.
  1. Seed Certification charges.
  2. Seed storage Godowns.
  3. Grading equipments.
  4. Spiral separator.
  5. Digital Moisture meters.
  6. Threshing yards.
  7. Tarpaulin Distribution.

Fertilizer Requirement for Kharif 2013

Fertilizer Grade	QUANTITY (lakh tonnes)
DAP	5.00
MOP	2.90
NPK	7.50
UREA	8.00
SSP	0.25
TOTAL	23.65

Enhancement in key inputs consumption during Kharif Season from 2009 to 2012

Component	2009-10	2010-11	2011-12	2012-13
Input distribution (mt)				
Gypsum	4309	35376	96234	112270
ZnSO4	372	2723	8775	14422
Borax	53	389	2781	4092
Input consumption(Kg/ha.)				
Gypsum	19.15	29.50	37.90	14.65
ZnSO4	1.653	2.271	3.46	1.883
Borax	0.236	0.324	1.10	0.56

Inputs Required during Kharif 2013

Inputs	Total Qty. Req. (As per recommendation)	50% of the requirement	Total Amt. Req. for 50% req.	@ 50% subsidy amt. req.
Gypsum	11,60,000	5,80,000	20,300	10,150
$ZnSO_4$	58,000	29,000	12,760	6,380
Borax	29,000	14,500	6,264	3,132
Bio-fertilizers	30018	15009	3,317	1658
Total	12,77,018	6,38,509	42641	21,320

Probable Funds available under different schemes (Rs. in lakhs)

Sl No	Name of the scheme	Scheme total outlay	Amount available for inputs
1	Enrichment of soil Fertility	7500.00	7000.00
2	ISOPOM (oilseeds)	6200.00	1018.06
3	NFSM - Rice	1372.12	60.50
4	NFSM - Pulses	5624.41	313.705
5	APPP (Tentative)	4220.00	500.00
6	RKVY (Bhoo-chetana)	5200.00	500.00
	Grand TOTAL	30116.53	9392.27

Steps need to be taken by the implementing officers for procurement of inputs

- Give wide publicity to the soil fertility status
- Link up the nutrient deficiency, consumption of different plant nutrients
- Assign specific responsibilities to farmer facilitators and Lead farmers.
- Keep close vigil on working of farmer facilitators.
- Conduct periodical review regarding working of farmer facilitators.

Steps need to be taken by the implementing officers for procurement of inputs

- Organize campaigns to create awareness and to motivate the farmers for use of these inputs.
- Avoid procurement of inputs having short validity period.
- Arrange for timely payment to the suppliers
- . Arrange wide Publicity through leaflets, posters and other mass media.

Plant Protection

- ✓Seed Treatment and demonstrations on campaign basis.
- ✓Adoption of IPM techniques
- ✓Bio control Agents
- ✓Conducting Farmers Field Schools
- ✓Use of Bio-pesticides, Neem based products and resistant cultivars
- ✓Need based P.P. measures only

Bhoochetana - Input management in paddy and sugarcane crops

- Irrigated crops responded better to input application compared to rainfed crops.
- Input management, irrigation use efficiency achieved higher returns.
- Paddy- timely supply of inputs transplanters and other equip ments,custom hiring center SRI methodology –successful. SIP –semi irrigated paddy needs efforts of field level functionaries in few districts.

Bhoochetana - Input management in paddy and sugarcane crops

- Sugarcane- input supply, SRI (Sugar cane Renewed Intensification)
- minimizes seed rate and vital water input. Planting and harvesting equipment and custom hiring centers

PEST SURVEILLANCE AND ADVISORY UNIT

❖Pest Surveillance and Advisory Units have been constituted both at State and District levels.

❖Pest Surveillance and Advisory Unit meetings are conducted pertaining to occurrence/incidence of pests and diseases in different crops and their management practices are being conducted on monthly basis with the active participation of Agriculture Department, Scientists from Agriculture Universities, Selected District Joint Directors of Agriculture (JDA's), CIPMC officers, KVK extension staff and NGOs.

Quality Seed distribution

- District Seed Production Plan & 2nd Stage C/S prodn. at RSK level
- Seed prodn. Plots in Bhoochethana blocks with new cultivars
- Seed replacement rates for open pollinated, cross pollinated & Hybrids
- Seed distribution as per seed replacement norms
- Hyv, Hybrids, C/S, T/L and farmer seed
- Improved New cultivars
- Farmer preferred varieties
- Seed village and village seed bank concept
- Swabeejabhivruddhi yojane
- Quality control and seed law enforcement

Input Management in Khairf – most challenging

- Involvement of FFs, LFs and Field level functionaries of KSDA, WDD etc;
- Cluster villages and godowns facilities
- Transportation and handling problems
- Timely availability of Inputs and smooth distribution at peak sowing season
- Field application of inputs - supervision
- Demonstration on Lead farmers and innovative farmers fields

- Use of Inputs by SF/MF, SC/ST farmers very crucial
- Use of Tropicultures, Seed-cum-fertilizer drill, MFO's, Rice Transplanters and other improved machinery
- INPUT MANAGEMENT- In post rainy season is also crucial for Rabi crops and irrigated crops

Learnings

- Soil Health is crucial for crop productivity
- Farmers convinced about the application of Micronutrients, Soil Amendments, Bio fertilizers, IPM, INM & FFs
- Judicious use of fertilizers is economical & sustainable, even under unfavorable conditions
- Involvement of KSDA's staff, line depts, FFs, LFs and CBOs (SHGs, UGs & AGs)

- Affordability of the farmers to purchase Inputs
- Food security and yield improvement - through participatory Research, Capacity building, State policy and close monitoring at State level. And INPUT management.
- Rural livelihood i.e; Agriculture + Animal Husbandry is essential
- *Bhoochethana (II) "Plus Programmes" are important in CGIAR districts*

Bhoochetana

A story behind success and future plan for sustainability

Improving rural livelihoods

Tiptur Taluk
Tumkur dist.Karnataka.INDIA

"Tiptur" at a glance

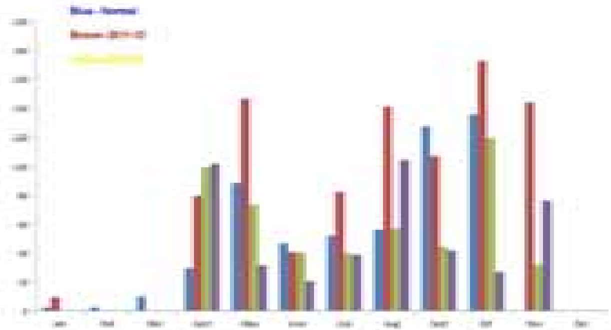
26 grama panchyats covers 231 villages
Comes under central dry agro-climatic zone-4
Total Geographical area: 78530ha
Total aerable land: 62415ha
Red sandly loam soil
Taluk average annual RF-612.6mm
Coconut covers- 30000ha
Ragi covers -26000ha
Other pulses and cereals-14000ha
Bi-modal; Pre-monsoon & monsoon cropping systems

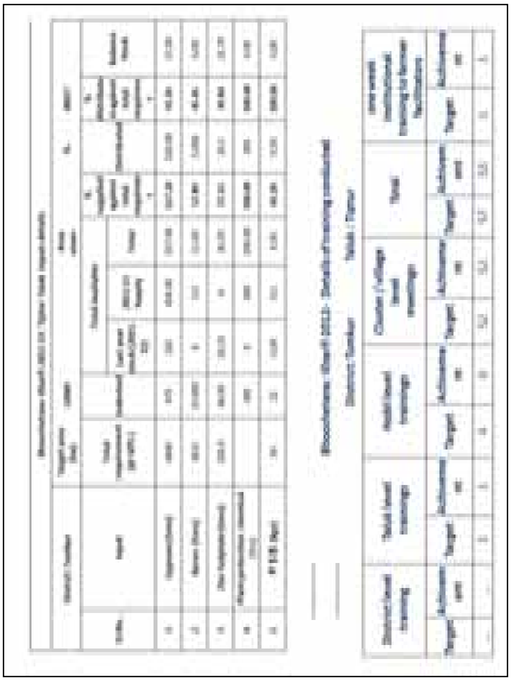
TIPTUR- Rainfall up to 2012,

S.No	Month	Normal rainfall	2008 Actual rainfall	2008 rainy days	2009 Actual rainfall	2009 rainy days	2010 actual rainfall	2010 rainydays	2011 actual rainfall	2011 rainy days	Rainy days 2012	2012 actual rainfall
1	January	1.5	–	–	–	–	8.4	1	–	–	–	–
2	February	1.5	48.7	2	–	–	–	–	–	–	–	–
3	March	6.8	78.0	4	83	2	–	–	–	–	–	[illegible]
4	April	[illegible]	28.8	2	31.4	2	79.8	10	108.08	7	6	[illegible]
5	May	[illegible]	79.1	3	90.6	3	146.4	8	73.82	6	5	[illegible]
6	June	[illegible]	54.2	5	108.6	3	41.0	5	48.94	3	1	[illegible]
7	July	[illegible]	85.7	6	28.0	3	82.4	8	48.06	3	4	[illegible]
8	August	[illegible]	137.8	7	88.8	5	141.2	11	57.42	7	6	[illegible]
9	September	[illegible]	85.6	5	340.8	8	107.3	7	44.40	5	[illegible]	[illegible]
10	October	[illegible]	123.4	7	90.6	5	173.82	9	119.35	11	1	[illegible]
11	November	[illegible]	–	–	52.0	7	143.94	9	32.18	4	2	[illegible]
12	December	[illegible]	–	–	8.00	–	–	–				
		612.6	794.4	39	762.86	38	824.56	65	507.9	44	37	[illegible]

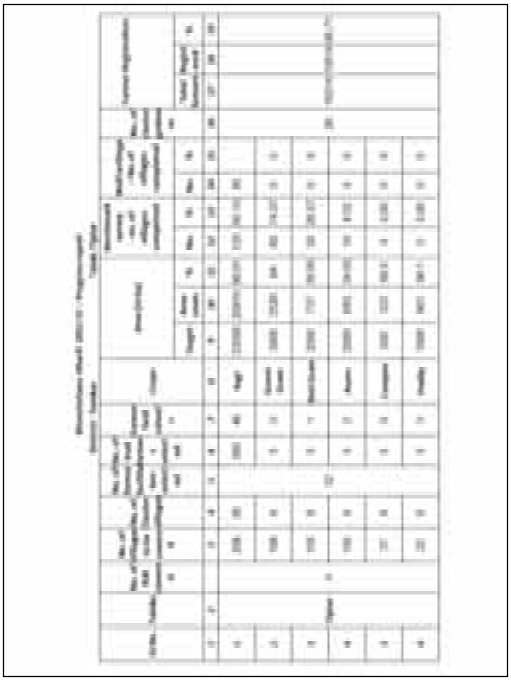
Taluk Rain fall Pattern

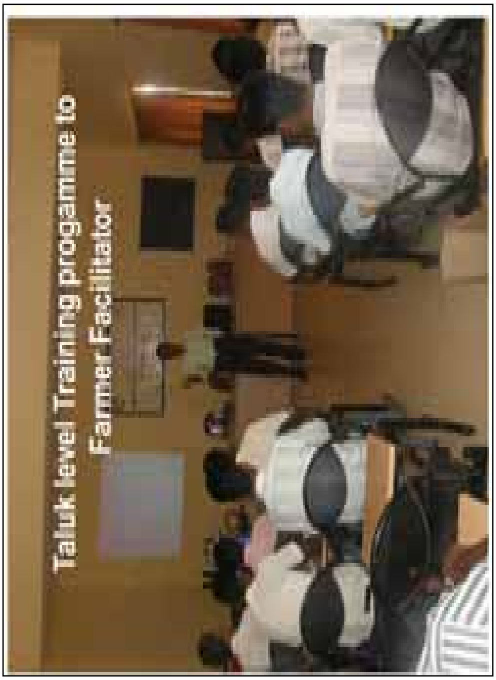
Graph showing the comparison between actual rainfall received during 2011-12 and 2012-13






Hobli Level Training programme to Farmers and Farmer Facilitator




Taluk level Training progamme to
Farmer Facilitator

Village Level Training Programme to Farmer's and Farmers Facilitator's

Village Level Training Programme to Farmer's and Farmers Facilitator's

Village Level Training Programme to Farmer's and Farmers Facilitator's

Dept. Extension personnel guiding farmers regarding usage of Gypsum And Zn Sol.in Ragi

Usage of Gypsum and Zinc sulphate by Farmers during Ragi planting

Dept Extension personnel guiding farmers regarding seed treatment under Bhoochetana

Seed Treatment Campaign at village level


Wall Paintings for dissemination Of Technical Information


Department Of Agriculture
Raita Samparka Kendra
Honnavalli
Wall Paintings for dissemination Of Technical Information


Weekly discussion with farmers facilitator


Facilitator


Timely input pre-positioning at cluster godowns


Information dissemination in weekly meetings under FFS


Address by Hon'ble DIRECTOR FOR AGRICULTURE at FFS satellite training

ICRISAT recommendations for RAGI crop

Recommended dose	N	P_2O_5	K_2O	S	Zn	B
	100	50	50	30	5	0.5
Mode	Urea	DAP	MOP	Gypsum	Zinc	Borax
Tipur taluk	196	54	42	200	13	2.5
Tumkur dist	175	109	42	188	25	2.5

Design & layout plan for FFS demo

25 guntas	10 guntas	5 guntas
Boochetana plot	Long-term test plot	Farmers plot
Application of Gypsum-50kg ZnSo4-3.25kg Borax-0.625kg PSB-	Suitable variety Inter/mixed crop with Dolichos, Tur, Fodder Jowar Recommended application	Usual practice of farmers way of crop-production is allowed

Comparative yield analysis (kg/ha)

Crop	Yield potential	Farmers field yield	Expected yield at demo plot
Ragi	2000	1250	1350
Greengram	700	500	630 (50-75)
Redgram	1500	1200	1350
Cowpea	1200	950	1100
Avare	1200	1000	1030
Paddy	4000	3500	3900


Protective Irrigation During dry spell By Using Sprinklers


Visit by Extention Officer to moisture stress affected plots in

Buchetana-ACTION PLAN-2013-14

S.No	Crop	Target	villages to be covered	Survey	Facilitator	Mobilisation	Soil Sample	Gp Training	Mobil training	Lead farmers
1	Green Gram	3000	100	Mar-April	6	50	30	April	April	30
2	Jhoar	2000	80	Mar-April	4	40	20	July	July	20
3	Redgram	2000	80	Mar-April	4	40	20	May	May	20
4	Paddy	1000	40	Mar-April	2	20	10	June	June	10
5	Ragi	23000	208	Mar-April	46	104	230	July	July	230
6	Cowpea	500	20	Mar-April	1	10	5	April	April	5
	total	31500	528		63	264	315			315

Bhoochetana- Kharif-2013-14: Tiptur taluk inputs requirement details

	Ragi	Groundnut	Redgram	Avare	Cowpea	Paddy	Total
Area(ha)	23000	3000	2000	2000	500	1000	31500
1 Seeds (qtls)	230	450	450	450	450	500	3030
2 Gypsum (tons)	4600	600	400	400	100	200	6300
3 Boron (tons)	57.5	7.5	5	5	1.25	2.5	78.75
4 Zinc Sulphate (tons)	299	39	26	26	6.5	13	409.5
5 Plant protection chemical (ltrs)	1150	260	150	150	150	400	2060
6 Plant protection chemical (kgs)	250						
7 P.S.B (kgs)	11500	600	400	400	100	200	1700

1 godown identified for each GP for 2 facilitators preferably PACB's

Technology interventions....

- Contour ploughing
- Application of recommended Fym/Compost
- Using advanced seed-cum-fertilizer drill to maintain optimum plant population
- Opening the dead furrows for conserving runoff
- Need based plant protection measures
- Integrated pest & disease management
- Timely harvest and safe storage

Gramapanchayathi wise monthwise plan for distribution of micronutrients in tiptur taluk-2013-14

Sl.No	Grama panchyats	April-may			June			July			August-September		
		Gypsum	Zn Sul.	Boron	Gypsum	Zn Sul.	Boron	Gypsum	Zn Sul.	Boron	Gypsum	Zn Sul.	Boron
	Kibbenahalli												0
1	Bilgere	70	10	1	120	16	1	120	28	1	70	6	1
2	Hindasere	80	2.5	1	70	2.5	1	80	2.5	1	20	2.5	0.5
3	Annegoppe	70	2.5	1	100	2.5	1	70	2.5	1	20	2.5	0.5
4	kerati	80	2.5	1	70	2.5	1	80	2.5	1	60	2.5	0.5
5	kuppalu	120	6	1	70	6	1	70	6	1	120	6	0.5
	Hiremavalli												
6	Honnavalli	40	2	1	60	2	1	40	2	1	10	1	0.25
7	Hallurdhe	60	2	1	100	2	1	100	2	1	70	1	0.25
8	Sarthavalli	70	2	1	120	2	1	120	2	1	40	1	0.25
9	Banakikere	40	2	1	100	2	1	100	2	1	20	1	0.25
10	Gyaragatte	40	2	1	60	2	1	60	2	1	30	1	0.25
11	Bakuvankatu	100	2	1	100	2	1	200	2	1	60	1	0.25

Gramapanchayathiwise monthwise plan for distribution of micronutrients in tiptur taluk-2013-14

	Kasaba	Gypsum	Zn Sul.	Boron	Gypsum	Zn Sul.	Boron	Gypsum	Zn Sul.	Boron	Gypsum	Zn Sul.	Boron
12	Sulligondahalli	30	2	1	60	4	1	60	4	1	40	1	0.25
13	Gurugadahalli	20	2	1	60	4	1	70	4	1	60	1	0.25
14	Mathodi	40	2	1	60	4	1	60	4	1	10	1	0.25
15	Dasarigatte	20	2	1	60	4	1	70	4	1	20	1	0.25
16	Rangapura	40	2	1	60	4	1	60	4	1	40	1	0.25
17	Eachanur	30	2	1	40	4	1	50	4	1	40	1	0.25
18	Huchchegondahalli	20	2	1	60	4	1	60	4	1	60	1	0.25
19	Tadasur	40	2	1	60	4	1	60	4	1	40	1	0.25
	Basavanapura												
20	Nonavinakere	70	2	1	60	5	1	60	5	1	47	1	0.25
21	Gungurumale	30	2	1	70	5	1	70	5	1	30	1	0.25
22	Bagguru	70	2	1	60	5	1	70	5	1	37	1	0.25
23	Honnegatte	40	2	1	70	5	1	62	5	1	40	1	0.25
24	Basavanagatte	40	2	1	70	5	1	70	5	1	27	1	0.25
25	Nagengatte	50	2	1	60	5	1	60	5	1	47	1	0.25
26	Nellikere	70	2	1	60	2	1	60	5	1	57	1	0.25
	Total	1260	64.0	26	1620	109.0	26	2002	117.0	26	1226	38.0	6.25

Tiptur-Total input requirement-Monthwise-2013-14

	April-may	June	July	August-Sept	Total	@ 50%supply
Gypsum	1390	1936	2002	1236	6564	3150
ZnSo4	64.5	109.5	117.5	38.5	330	160
Boron	34	50	40	14	138	75

Improving rural livelihoods

- Understanding prevailing local problems based on their local needs:
  - -Data collection
  - -Survey
  - -Conducting gram sabha
  - -Collection existing data from different sorces
  - -Participatory rural appraisal
- Grouping the problems:
  - -Social
  - -Economical
  - -Environmental
  - -Technological

Improving rural livelihoods

- Analyzing the problems
  - -Computational
  - -Socio- economic matrix
  - -Discussions with bottom level staff
  - -Participatory appraisal
  - -Discussions with elders in the villages on ITK's
- Resource mapping:
  - -Social -Labor force: skilled/unskilled
  - -Economical-Self/Financial institutions/ Govt.aid
  - -Environmental-weather,climate,soil,RF,temp.
  - -Technological-ITK's,Pvt.PPP,University old/new

Improving rural livelihoods

- Planning and actualization
  - -Range; Short ,medium, long term
  - -Target; individual,group
  - -Type-HRP, technology
- Training and development
  - -Group approach:attitudinal,behavioural,leadership
  - -Renewed/New information
  - -Development of skills;communicational,technological
  - -Capabilities
  - -Capacity building activities

Improving rural livelihoods

- Implementation and feed back
  - -Renewing the existing schemes
  - -Selection of beneficiaries in grama Shaba
  - -Introducing participatory approach in implementation
  - -Opinion asking and Social-auditing
  - - Sending feed back to source of planning
- Performance review and redefining
  - -Interim and final performance evlauation
  - -Understanding the loop holes
  - -Correction then and there
  - -Regular fallow- up action
  - -redefining the goals if needed
  - -extension to new area

thanks.....

IMPROVED NEW CULTIVARS – SEED INTRODUCTION STRATERGIES

BY
Ananda Krishna.K
Managing Director
Karnataka State Seeds Corporation

NEED FOR NEW CULTIVARS

- Farmers requirements
- Cultivar deterioration/Decline in stability , yield
- Need to improve yield/Quality of production
- Value addition through new traits
- Susceptibility to pests and diseases
- Governmental Policies such as subsidies to new varieties

NEED FOR NEW CULTIVARS

- Grain cum fodder options
- Processing requirements
- To arrest stagnation in yields
- New consumption, industrial requirements
- Varietal obsolescence
- Competition

Introduction of new cultivars is a continuous task for enabling productivity, production and quality for resilient economy

HOW DO WE GET NEW VARIETIES AND HYBRIDS

ICAR and SAU plant breeding efforts(NARS)

Breeding efforts by private sector seed companies

By own Breeding/Research efforts

Buy New hybrids/varieties/ germplasm

Adoptive trials


PRIVATE SEED CO
BOD
MD/CEO
BREEDING R&D
PRODN
MARKETING
HRD
FINANCE
ALL ARE INTEGRATED


PUBLIC SEED SECTOR
ICAR R&D & SAU
EXTENSION & QC DOAs SAU EXTN
SEED PRODN SSCs/SFCI NSC/ KOF
VARIETALNOTIFICATION GOI MOA
ALL ARE DISINTEGRATED
>3000 varieties notified. Only 15% in multiplication chain


STRATEGIES/STEPS INVOLVED IN INTRODUCING NEW CULTIVARS
1. IDENTIFICATION OF THE NEED FOR INTRODUCTION
• Replacement
• Me too
• Speciality production
• Unique selling propositions
2. MARKET SEGMENTATION
• Geographical
• Duration with
• Product Quality
• Price Sensitivity


STRATEGIES/STEPS INVOLVED IN INTRODUCING NEW CULTIVARS
3. MULTI LOCATION TRIALS & DEMONSTRATIONS
4. COMMERCIAL CONSIDERATIONS
• Channels
• Remuneration
• Logistics and Warehousing
• Prepositioning strategies
5. SCALING UP OF SEED PRODUCTION
6. PRODUCT LAUNCHING WITH FAIRLY LARGE QUANTITIES

SITUATION IN PUBLIC SECTOR

1. SAUs are our product developers and product managers
2. Onus of breeding for new varieties and adoption trials rests with SAUs
3. In today's contest its required to have
- Varietal replacement Perspective plan-For a period of 5/10 years
- Planning for product development strategies
- Monitoring for new variety development and replacement
- It requires institutional mechanisms and work together by DOA, SAUs and SSCS

THANK YOU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American Idol


Location
Time
Video
Crop
Farmer
Facilitator
Practice
Language
Open Data: Targeting | Empowering | Connecting


Farmer
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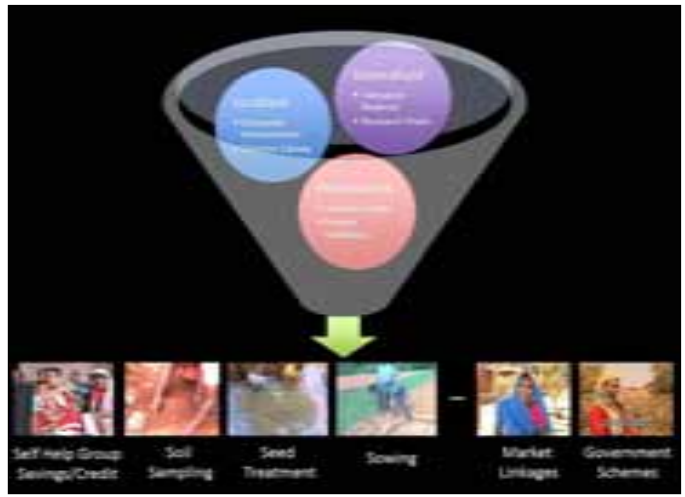
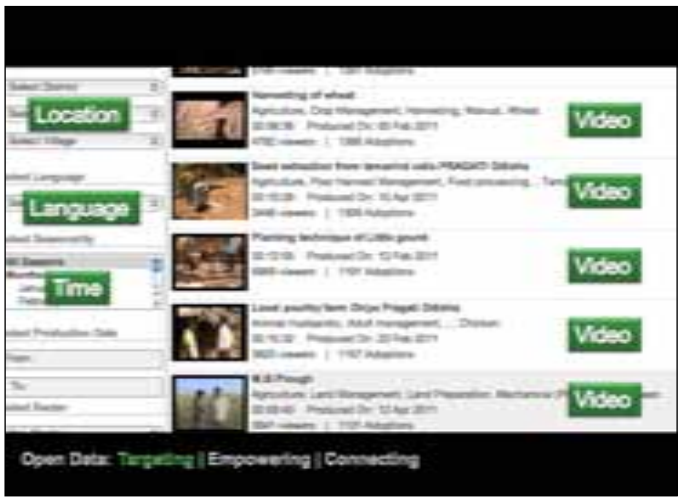
Open Data: Targeting | Empowering | Connecting


Self Help Group
Savings/Credit
Soil
Sampling
Seed
Treatment
Sowing
Market
Linkages
Government
Schemes


Localized Content (80%)
• Identifiable Peers
• Accessible Services
Generalized Content (20%)
• Comparable Agroecology
• Common Services


Location
Time
Time
Crop
Practice
Open Data: Targeting | Empowering | Connecting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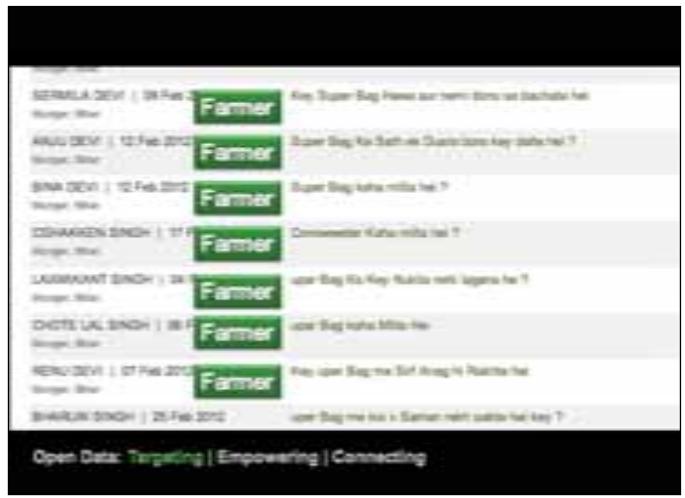
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Farmers
Facilitators
Open Data: Targeting | Empowering | Connecting


Video
Video
Video
Video
Video
Time
Time
Time
Time
Time
Farmer
Facilitator
Farmer
Farmer
Farmer
Open Data: Targeting | Empowering | Connecting


Me
Farmerbook
Farmer
Like · Comment · Unfollow Post · Share
Friends
Open Data: Targeting | Empowering | Connecting


Farmer
Me
Friend
Friend
Friend
Friend
Open Data: Targeting | Empowering | Connecting


Technology magnifies human intent and capability.
Successful technology interventions require support from well-intentioned, competent people or organizations.
Physical
Human
Political
Financial


Thanks!
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Bhoochetana Workshop

Group II
Capacity Building: Innovative extension and awareness building

Capacity Building

1. Extension Workers including FFs
2. Farmers

Extension Workers

- Preseason , midterm and post season training for Ews - At DATC and KVKs
- Effective use of video conference facility through sharing of experiences
  - Success stories
  - Innovative subventions
- Satellite based training programmes -twice in a season
- Mobile alerts –voice calls, text SMS

Farmers

- Pre-season campaigns with tableaux depicting Success stories
- Assess group based needs , facilitate formation of FIGs , CIGs
- Availing Information Dept. facilities for campaigns, slide shows in cinema halls
- Arranging participatory, on hand training at village level

- Explore EDUSAT facility for location specific training
- Arrange Satellite based trainings(2 -3 in each season)
- Arranging regular trainings at RSKs-experience sharing
- Establishment of Electronic Display boards at GPS

- Arranging Farm schools by involving Krishi pandits, progressive farmers
- Issue of Regular press releases with advisories and training schedules
- AIR/DD lessons series to be arranged
- Availing services of local TV channels with local resource persons
- Arranging regular Phone-in programmes.

- Arranging subjectwise trainings at DATCs, KVKs, NGOs
- Arranging night trainings, video shows, street plays
- Visit to Krishimelas, interaction with scientists.
- Providing CDs on crops (Seed to Seed), farm enterprises concerned with value addition

Wall Paintings

- Highlight in bold letters on bus stops, use small letters on GP and school walls.
- Adore whole frame work, use pavements too.
- Media Alerts.
- Interim documentation, broadcasts, telecasts.
- Press field visits.
- Always use e-mails backed by sms alerts.
- Extension literature.
- Acknowledge achievers' details on walls, media.

Thank You

Group-3

DOCUMENTATION AND DISSEMINATION

DOCUMENTATION

- EXISTING BASIC RECORDS TO BE UPDATED AND SUPERVISED IN FORTNIGHTLY REVIEWS.
- ALL FARMER FACILITATORS TO BE RIVIED BY ADA OF TALUK THROUGH PRESCRIBED FORMAT.
- INTEGRATION WITH K-KISSAN.
- PALM TOPS-FOR EACH RSK FOR REGULAR DATA UPDATION .
- VIDEO RECORDINGS - SUCESS STORIES TO BE UPLOADED IN U TUBE.

- ONE FARMER FACILITATOR PER TALUK TO BE ASSIGNED EXCLUSIVELY FOR DOCUMENTATION.
- ONE HANDY-CAM PER TALUKA SHOULD BE PROVIDE TO RECORD ACTUALS.
- INVOLVING LINE DEPT SCIENTISTS ON PERTICULAR DAY TO VILLAGES DURING SEASON TO ADDRESS FARMERS FIELD PROBLEMS

DISSEMINATION

- TV ADVERTISEMENTS – INVOLVING FACILITATOR ON HAND.
- EXCLUSIVE SLOT FOR KISSAN CALL CENTER.
- SCROLLING MSGS IN LOCAL TV SEASON WISE TECHNOLOGIES.
- SELECTED FARMR FACILITATORS FOR BIMONTHLY.
- PUBLICITY INCORDINATION WITH INFORMATION DEPARTMENT.
- THROUGH COMMUNITY RADIO.

- MESSAGES THROUGH MOBILE TO FACILITAOR AND FFS LEADER.
- INFORMATION THROUGH LOCAL FOLK ARTS.

GROUP 04

CONVERGENCE TO ENHANCE IMPACT AND DATA RECORDING

CONSORTIUM PARTNERS

- KSDA
- SAUs/UHS/ICAR
- KSNDMC
- KSSC/NSC/KOF/Input supply agencies
- WDD/DOH/DOA&H/DOS/DOF/Co-operation/Social Forestry/RDPR/DES
- Agriculture Marketing
- NRSA
- NGOs

District level Technical Committee

JDA: Chairman

Members: DRCs/DSO DWDO, DDA(DATc)/ADA(SMS/HQ), KVK Head/ICRISAT Scientist/Any one Taluk ADA

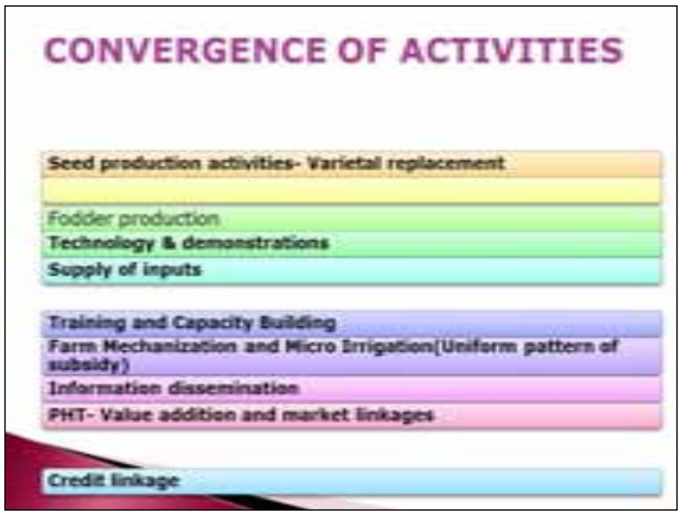
JOB CHART: To approve the district action plan, Review and recommend modifications based on local problems/ recommend innovative technologies for adoption

Taluka level Technical Committee

ADA: Chairman

Members: ADA WDD, AO(SMS), KVK Scientist/ICRISAT Scientist/ADH/All RSK Aos/CDO/ASO

JOB CHART: To approve the taluka action plan, Review and recommend modifications based on local problems/ recommend innovative technologies for adoption


CONVERGENCE OF ACTIVITIES
Seed production activities- Varietal replacement
Fodder production
Technology & demonstrations
Supply of inputs
Training and Capacity Building
Farm Mechanization and Micro Irrigation(Uniform pattern of subsidy)
Information dissemination
PHT- Value addition and market linkages
Credit linkage


Demonstration & FFS
New Varieties
Innovative Technology
Bridging Production Gap in Major Crops
ONE FFS PER Farmer Facilitator


DATA RECORDING
DATA Collection
Compilation & Reporting
Computerization of Farmers Data Base
Computerization of Farmer Facilitators Data Base
Computerization of details Farmerwise input consumption
Compilation of Crop Cutting Experiment

Review and Planning Workshop: Bhoochetana II and GoK-CGIAR Initiative

Technical Session VI: Group Work

Date: 01 Mar 2013 Time: 15:30 to 17:30 h

Group 5: Climate Change Network

Leader: Dr. Prabhakara Setty, DoA, GoK

Assistance: Dr. AVR Kesava Rao, ICRISAT

Topic of discussion:

Assess the impacts of climate change in different agro-eco regions of the state in terms of anticipated shifts in the crop growing periods, water availability, major crop yields, and evaluate adaptation strategies for developing climate resilient farming systems

Networking of various institutions on climate change

Group 5: Climate Change Network

How did we go about it

- Group consisted of more than 50 participants including a good number of women
- Participation from all organizations: DoA-GoK, SAUs and ICRISAT
- Dr. Prabhakara Setty introduced the topic, explained about global warming, present climate change scenario, drivers and impacts on agriculture and society, advantages & disadvantages
- Dr. Kesava Rao explained the methods of collection of weather and soil data and development of databases, climate variability and change analysis at micro-level, climate change impacts assessment, development of suitable adaptation strategies and enhancing climate awareness among various stakeholders
- Active participation by majority of members has resulted in many good suggestions and a clear road map

Group 5: Climate Change Network

Climate change: Mega concerns

- Increase in temp by 1°c increases the sea level by 1 foot due to dissolution of polar ice caps, GHGs(CO_2, CFC, CH_4, H_2S)
- Increase in temperature increases the productivity of C4 plants: maize, sugarcane
- In Karnataka, past 10 years rainfall trend signifies 6/10 years being drought affected
- Neighboring districts have opposite trends !

Weather aberrations

Group 5: Climate Change Network

Some impacts of weather aberrations

Higher humidity:	Causes sheath blight in paddy Flower dropping in Pigeonpea Reddening of cotton
Higher temperature:	Increased bee activity High evapotranspiration demands
Lower temperature:	Better tuberisation in potato Increased sugar content in sugarcane Increased oil content in oilseeds
Strong winds:	High evapotranspiration demands Lodging of many crops

Group 5: Climate Change Network

Suggestions by group

- Appropriate crop varieties to suit the change in climate zone wise need to be developed by universities
- Intermediary and contingent crop planning / alternate crop planning system to be developed
  - In-situ moisture conservation, Mulching / application of FYM to increase soil organic matter content
  - Hydrogel technique
  - Conservation tillage
  - Repeated inter-cultivations
  - Dead furrow opening
  - Sowing across the slope
  - Water harvesting & application of micro irrigation system

Group 5: Climate Change Network

Suggestions by group

- Seed hardening with $CaCl_2$
- Intercropping in horticultural and plantation crops
- Introduction of Silvi-Agriculture, Agri-Horticulture, Pastoral systems based on land capability classification
- Rehabilitation of wastelands through biofuel plantations
- Maintaining optimum plant population with suitable crop geometry
- Adoption of drought tolerant varieties
- Foliar nutrition, Growth promoting hormones, Anti-transpirants
- Protective / Life saving irrigation at critical stages
- Reducing agricultural GHG emissions
- Post-harvest management
- Emphasis on carbon sequestration and initiate carbon trading

Group 5: Climate Change Network

Road map

- Climate and soil data collection
- Sources: IMD, KSNDMC, SAUs, Directorate of Economics & Statistics
- Quality check, database development, software for analysis
- Climate change analysis with respect to
  - Trends in major weather parameters
  - Changes in "begin and end" of rainfed crop-growing period
  - Changes in LGP, intra-seasonal dry and wet spells
  - Water balance and water availability for crops
  - Identification of areas with great changes in climate (hot spots)

Group 5: Climate Change Network

Road map

- Assessment of climate change impacts on major crops through crop-growth simulation models
- Development of suitable climate resilient adaptation strategies
- Organizing climate awareness programmes on wider scale

Group 5: Climate Change Network

Road map

- Sites: Representative 10 ha area in each of the four districts (Bijapur, Raichur, Chikkamagalur and Tumkur
- Establish AWS – to be done by ICRISAT in collaboration with Dept of Agriculture, KSNDMC and SAUs
- Monitor weather, crop parameters in details
- Monitoring occurrence / outbreak of pests and diseases
- Develop weather-based pest / disease forewarning models
- Strengthen the weather forecasting system for the target sites and extend it to the entire division in due course
- Awareness building programmes on climate and its impact

Group 5: Climate Change Network

Road map

- Collaborations from other institutions
- SAUs (Each university to nominate one scientist exclusively to assist the team)
  - Tumkur – UAS, Bangalore
  - Chikkamagalur – UAHS, Shimoga
  - Raichur – UAS, Raichur
  - Bijapur – UAS, Dharwad
- KSNDMC
- ICRISAT
- Departments of Agriculture, Horticulture, Animal Husbandry, Sericulture, Fisheries, Forestry, Agricultural Marketing and Cooperation

Thank You

GROUP 6

SEED PRODUCTION ACTION PLAN WITH SPECIAL REFERENCE TO NEW CULTIVARS

Dr.Siddaraju

NEED

- Required to assess the seed requirement of the block/dist./state based on SRR.
- To replace the old/obsolete varieties where the yield potentiality is either reduced/stagnated
- To promote the cultivars which have been developed by res. Station for insect and disease resistance /tolerance
- To encourage the adoption of new varieties developed for draught tolerance etc.
- To take adv. Of the financial assistance of GOI/GOK schemes.

STAKE HOLDERS:

- KSDA
- SAU's
- KSSC
- KOF
- NSC
- SFCI
- Private seed co.

STRATEGIES

- Identification of the varieties suitable for the area
- Prepare the seed req. plan based on SRR for each block/Dist. as per need.
- Prepare the breeder/foundation/certified seed req. well in advance
- Place the indents in time with GOI
- Lift the seeds as per allocation
- Breeders have to supply the alloted qty. to the concerned agencies.

- Organization of demo's in all schemes consisting new varieties
- Timely supply of new varieties as minikits
- All seed farms of KSDA and seed production agencies should maintain the SMR
- All SAU's, KSSC,NSC, KOF & other seed producing agencies etc. should take up new cultivar production as per need.
- Declaration of seed procurement prices in advance

- Identify the suitable farmers having protective irrigation facilities for seed prodn.
- District Seed prodn. Monitoring team should inspect seed prodn plan invariably.
- Nominate one farm facilitator to each seed prodn block for proper supervision along with dept. staff.

- Proper co-ordination among all stake holders of seed production
- Seed producing agencies should concentrate on area expansion
- Training of all stake holders involved in seed production

SUGGESTIONS

- SAU's to nominate the concerned breeder to inspect the seed prodn block and advise suitably.
- A separate workshop should be organized for all stake holders regarding preparation of seed prodn action plan.
- Necessary funds to be made available for necessary infrastructure to seed farms by ZP/SS.
- To allow the subsidy for old and popular var. atlesat fund from state funds.

- All India recommended varieties needs validation by SAU's
- Registration and inspection charges to be subsidized
- Compulsory seed certification for all class of seeds

Thanks

Presentation on Inputs Requirement

GROUP-I

Requirement of Seeds For Kharif 2013

Total Cereals - 478486 Qtls
Total Pulses -104296Qtls
Total Oilseeds -479086 Qtls

Requirement and availability of seeds for distribution during Kharif 2013 (Departmental programmes/ General Distri.) (in qtls)

Sl No.	CROP	Requirement	Agency wise supply programme					TOTAL	SURPLUS/ DEFICIT
			KSSC	NSC	SAU	KOF	Private		
1	PADDY	348468	208779	18000	25998	0	39975	291844	42375
2	RAGI	25080	12380	500	1377	0	8948	23216	136
3	MAIZE	172500	1500	200	1060	0	172786	175026	3626
4	JOWAR	18500	1600	0	0	0	16155	17755	1255
5	BAJRA	12638	800	0	133	0	15850	16883	4245
6	Minor Millets	3366	260	0	250	0	2790	3366	0
Total Cereals		478486	226320	18700	28818	0	255855	530024	51637
7	ARHAR	38233	9403	400	4051	0	29817	41473	-14739
8	GREENGRAM	23160	1465	100	1247		8154	10916	-12194
9	URD	7362	1576	300	1263	0	2456	5791	-1601
10	COWPEA	7013	1000	300	160	0	5364	7024	11
11	FIELDBEAN	6434	0	0	0	0	6475	6475	41
12	HORSEGRAM	4129	0	0	0	0	4129	4129	4
Total Pulses		104296	12443	1500	6721	0	55147	75808	-28488

Continued

Sl No.	CROP	Requirement	Agency wise supply programme					TOTAL	SURPLUS/ DEFICIT
			KSSC	NSC	SAU	KOF	Private		
13	GROUNDNUT	346500	12256	16000	11485	95500	159138	291378	-54821
14	SUNFLOWER	14240	0	0	708	125	14820	15748	1508
15	CASTOR	1485	0	0	0	0	1500	1500	15
16	SESAMUM	1960	0	0	0	0	2011	2011	51
17	Niger	2310	0	0	0	0	2315	2315	5
18	Linseed	1238	0	0	0	0	1248	1248	10
19	Mustard	83	0	0	0	0	85	85	2
20	SOYBEAN	111250	20000	3500	22436	5000	84894	111830	4820
Total Oilseeds		479086	32256	19500	34641	100625	243111	430333	-48753
21	COTTON	6660	0	0	0	0	7394	7394	504
Total Cotton		6660	0	0	0	0	7394	7394	504
Grand Totals		1068748	271019	40700	70281	100625	561327	1044048	-25701

NOTE 1. State requirement : as per the Seed Replacement Rates for 2012

2. Seed suppliers will be informed to meet the shortfall.

Gaps in Seeds supply

- Shortage of seeds like green gram, Black gram,
- Prepositioning of seeds
- Availability of new varieties , Paddy- Uma,Thanu, Ground nut- ICGV 91114, K-6, Soyabean-JS9305. Red gram- TS3R. by conducting demonstrations for Popualrisation .
- Demand for green manure seeds like Diancha & Sunhemp
- Request for allowing Fodder seeds through subsidy distribution- convergence with animal husbandry Dept

Quality Seed distribution

- District Seed Production Plan & 2nd Stage C/S production, Seed plan.
- Seed prodn. Plots in Bhoochethana blocks with new cultivars
- Seed distribution as per seed replacement norms

Quality Seed distribution

- Hyv, Hybrids, C/S, T/L and farmer seed
- Improved New cultivars
- Farmer preferred varieties
- Seed village and village seed bank concept
- Swabeejabhivruddhi yojane
- Quality control and seed law enforcement

- Effective implementation of Seed treatment campaigns.
- Draw service Seed samples from farmer saved seeds and subject them for analysis to confirm germination and ensure seed treatment is done.

Fertilizer Requirement for Kharif 2013

Fertilizer Grade	QUANTITY (lakh tonnes)
DAP	5.00
MOP	2.90
NPK	7.50
UREA	8.00
SSP	0.25
TOTAL	23.65

Fertilizer Buffer stocking & other issues:

- Lack of storage facility in dists like Hassan, Dakshana kannada, Yadagiri
- Manufacturers / suppliers should inform concerned dist. JDA's about qty of fertilizer supplied to that dist. as soon as the supplies
- Demand for neem coated Urea & water soluble fertilizers
- Dist JDA's, TalukADA's and vigilence team officials should monitor the movement of fert from dist. to the taluks

Micronutrients &Biofertilizers Required during Kharif 2013

Inputs	Total Qty. Req. (As per recommendation)	50% of the requirement	Total Amt. Req. for 50% req.	@ 50% subsidy amt. req.
Gypsum	11,60,000	5,80,000	20,300	10,150
$ZnSO_4$	58,000	29,000	12,760	6,380
Borax	29,000	14,500	6,264	3,132
Bio-fertilizers	30018	15009	3,317	1658
Total	12,77,018	6,38,509	42641	21,320

FUNDS AVAILABILITY

SCHEMES:-

Enrichment of soil Fertility

ISOPOM (oilseeds)

NFSM - Rice

NFSM - Pulses

APPP (Tentative)

RKVY (Bhoo-chetana)

Arrangements made by the Department

Rate contract for Green manure seeds, Vermi Compost, City Compost, Borax, Zinc Sulphate, Gypsum, Ferrous Sulphate, Micro nutrient Mixtures, Bio-fertilizers, Agriculture Lime & Dolomite is in force at present .

Tenders have been invited for procurement of the above products during the year 2013-14. RC will be communicated before commencement of sowing season.

Constraints

- Lack of adequate and timely rainfall
- Lack of adequate storage facilities at Raitha Samparka Kendras
- Delay in payments to the suppliers
- Lack Of Proper baging of inputs

Strategies for inputs supply

- Finalize the quantity required under different Agricultural Inputs in consultation with ADA's, AO's and Other field staff.
- Arrange for suitable storage facilities for proper storage of inputs.

Steps need to be taken by the implementing officers for procurement of inputs

- Give wide publicity to the soil fertility status
- Link up the nutrient deficiency, consumption of different plant nutrients
- Assign specific responsibilities to farmer facilitators and Lead farmers.
- Keep close vigil on working of farmer facilitators.
- Conduct periodical review regarding working of farmer facilitators.

Steps needs to be taken by the implementing officers for procurement of inputs during Kharif 2013

- Convene the meeting of Input suppliers and finalize the time schedule for supply.
- Timely indenting.
- Advance stocking

Steps need to be taken by the implementing officers for procurement of inputs

- Arrange to supply micronutrients in package form.
- Procure the inputs on consignment basis
- Ensure the quality of inputs before distribution

Steps need to be taken by the implementing officers for procurement of inputs

- Organize campaigns to create awareness and to motivate the farmers for use of these inputs.
- Avoid procurement of inputs having short validity period.
- Arrange for timely payment to the suppliers
- . Arrange wide Publicity through leaflets, posters and other mass media.

TIMELY DISTRIBUTION OF INPUTS

- Allocation of 3-4 suppliers for each district per product
- Suppliers should arrange for signed bill books to issue to the farmers like in seeds distribution
- Suppliers should mention quantity, approved rates and scheme name in the delivery challen
- Enhancement of godown charges

Plant Protection

- ✓Seed Treatment and demonstrations on campaign basis.
- ✓Adoption of IPM techniques
- ✓Bio control Agents
- ✓Conducting Farmers Field Schools
- ✓Use of Bio-pesticides, Neem based products and resistant cultivars
- ✓Need based P.P. measures only

PESTICIDES REQUIRED FOR SEED TREATMENT

Chem Req in Kg or Liters

Chemicals	Total chem. Req
Carbendizium	32855
Streptocyclin	1493
Mancozeb	10183
Capton	51832
Chloropyriphos	758027
T.viridae	130386
Total	984777

PEST SURVEILLANCE AND ADVISORY UNIT

❖Pest Surveillance and Advisory Units have been constituted both at State and District levels.

❖Pest Surveillance and Advisory Unit meetings are conducted pertaining to occurrence/incidence of pests and diseases in different crops and their management practices are being conducted on monthly basis with the active participation of Agriculture Department, Scientists from Agriculture Universities, Selected District Joint Directors of Agriculture (JDA's), CIPMC officers, KVK extension staff and NGOs.

Input Management in Khairf – most challenging

- Involvement of FFs, LFs and Field level functionaries of KSDA, WDD etc;
- Cluster villages and godowns facilities
- Transportation and handling problems
- Timely availability of Inputs and smooth distribution at peak sowing season
- Field application of inputs - supervision
- Demonstration on Lead farmers and innovative farmers fields

- Use of Inputs by SF/MF, SC/ST farmers very crucial
- Use of Tropicultures, Seed-cum-fertilizer drill, MFO's, Rice Transplanters and other improved machinery through CHC

About ICRISAT

ICRISAT
Science with a human face

International Crops Research Institute for the Semi-Arid Tropics

CGIAR

ICRISAT is a member of the CGIAR Consortium

The **International Crops Research Institute for the Semi-Arid Tropics** (ICRISAT) is a non-profit, non-political organization that conducts agricultural research for development in Asia and sub-Saharan Africa with a wide array of partners throughout the world. Covering 6.5 million square kilometers of land in 55 countries, the semi-arid tropics have over 2 billion people, of whom 644 million are the poorest of the poor. ICRISAT innovations help the dryland poor move from poverty to prosperity by harnessing markets while managing risks – a strategy called Inclusive Market-Oriented Development (IMOD).

ICRISAT is headquartered in Patancheru near Hyderabad, Andhra Pradesh, India, with two regional hubs and five country offices in sub-Saharan Africa. It is a member of the CGIAR Consortium. CGIAR is a global research partnership for a food secure future.

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