



Research Report No. 62

ICRISAT Research Program  
Resilient Dryland Systems



## **Bhoochetana: Building Resilience and Livelihoods** through Integrated Watershed Management



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# Bhoochetana: Building Resilience and Livelihoods through Integrated Watershed Management

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## Introduction

Rainfed areas are hotspots of poverty and malnutrition, and are prone to severe land degradation of natural resources. Globally, 80% of agriculture is rainfed providing 62% of the world's staple food. With increasing population over the years, per capita availability and quality of land and water resources have declined substantially resulting to water scarcity. Agriculture is the major consumer of water, accounting for 70-80% of water withdrawal. With the impacts of climate change, existing water and land scarcity will be aggravated further. Producing food for the ever growing population to achieve food and nutrition security, and improving rural livelihoods are challenges to be met today as well as in the near future.

Agriculture is the major contributor in the growth of the state of Karnataka, India and is still the mainstay for a large number of population in the state economy. However, trends are showing that the agriculture and allied sectors' contribution to Karnataka's GDP was around 43% in 1980-1981 that came down to 26% in 2001-2002, which further came down to 16.8% in 2007-2008, remaining stagnant in 2009-2010. This declining contribution of agriculture in the state GDP was a big concern for the state government.

In 2009, to enhance agricultural productivity of millions of hectares of rainfed areas in the state of Karnataka, ICRISAT in partnership with the Department of Agriculture (DoA) and State Agricultural Universities (SAUs) developed a scaling-up model called "Bhoochetana" (soil rejuvenation). Bhoochetana seeks to unlock the potential of rainfed agriculture towards improving rural livelihoods and achieving food and nutrition security while protecting the environment. In Bhoochetana, soil health assessment is used as an entry point to plan science-based interventions which can result to tangible benefits for the farmers by converging sustainable technologies to increase productivity of farm households with effective integrated watershed management approach.

The concept of "4-C" was adopted in the project. The first C is Consortium of research, education and field-based agencies to implement this program effectively on the ground. The second C is Convergence within the department schemes and other programs. The third C is Capacity building of the consortium partners, farmer facilitators, lead farmers and other stakeholders. The fourth C is Collective action at all levels during program implementation. Apart from

adopting the “4-C” concept, efforts were also made to ensure that the “4-E” is also applicable at the ground level which stands for Efficiency, Economic gain, Equity and Environmental protection. These are the important pillars of Bhoochetana, a sustainable and inclusive development project.

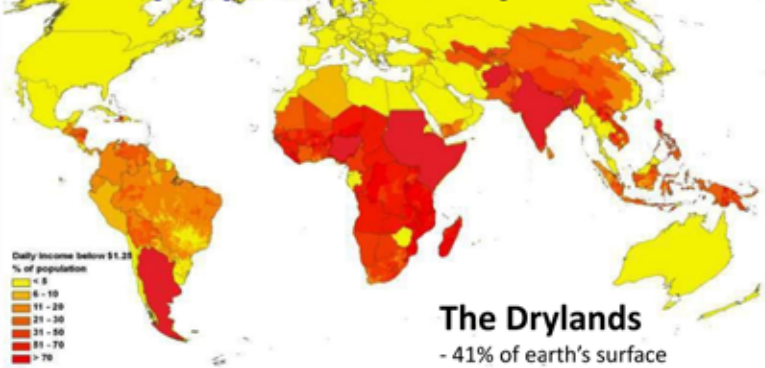
The project focused on activities like soil testing, farmers’ registration, training, awareness generation, wall writings in selected villages depicting soil fertility status and crop-specific best-bet management practices, farmer field school, capacitating farmer facilitators and lead farmers, hiring of storage building at cluster village for stocking of inputs and transportation to cluster village, distribution of inputs at 50% subsidy, seed treatment and major crops selection. These activities were carried out in all villages where project was implemented.

Bhoochetana, a mission mode program implemented across the 30 districts of Karnataka, India increased crop yields by 23-66% as compared to farmers’ practice over the last four years primarily through the adoption of soil-test-based nutrient management recommendations along with quality seeds of high-yielding cultivars, and soil and water conservation measures. The total area covered by the program within four years was 3.73 million ha. The program has proven that improved management systems are vital in building the resilience of the farming systems in spite of normal or below normal rainfall in the state. The economic returns for every dollar invested by the farmers ranged from 2.1 to 14.6 in 2011. In the years 2011 and 2012, the combined gross value of increased agricultural production in the state was US\$ 234 million, despite the fact that 2012 was a drought year with 26% deficit rains in the state.

This Research Report summarizes the lessons and experiences of scaling-up the Bhoochetana in building resilience and livelihoods through integrated watershed management for the benefit of millions of smallholder farmers dependent on dryland or rainfed agriculture.

# Poorest People Live in the Drylands

Rainfed areas in the tropical Asia and Africa are the hot spots of poverty, malnutrition, growing water scarcity and land degradation



## Home of the poor

- 644 M people poorest of the poor
- 42% malnourished children in Asia
- 27% malnourished children in Sub-Saharan Africa
- 2/3 of the people depend on agriculture

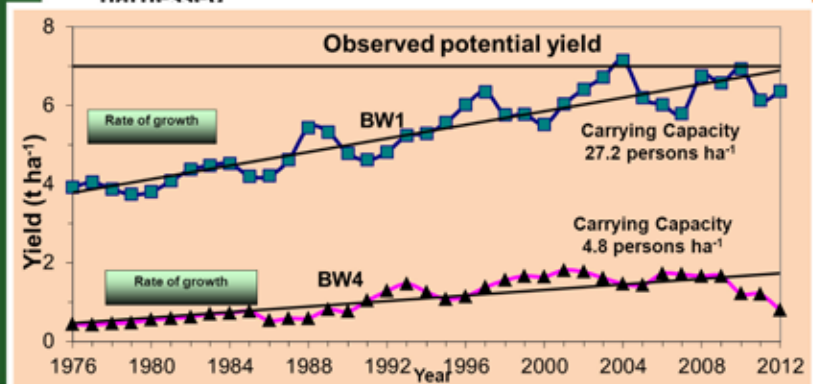
## The Drylands

- 41% of earth's surface
- supplies 40% of world food
- 2 billion inhabitants
- ICRISAT works in 55 countries

Rainfed areas in tropical Asia and Africa are the hot spots of poverty, malnutrition, mounting water scarcity and land degradation.

## Large Untapped Potential of Rainfed Agricultural Growth

- Current farmers' yields are lower by 2 to 5 folds than the achievable yields
- Vast potential of rainfed agriculture needs to be harnessed

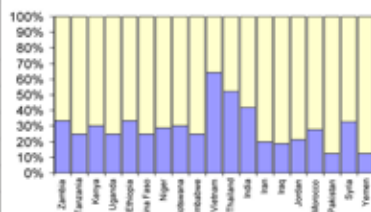


Long-term experiments at ICRISAT-Patancheru since 1976 have demonstrated that rainfed agriculture is not a one ton agriculture as generally perceived by the farmers and policy makers. It can produce  $5.4 \text{ t ha}^{-1} \text{ y}^{-1}$  with improved soil, water, nutrient and crop management practices as against  $1.1 \text{ t ha}^{-1} \text{ y}^{-1}$ , with farmer's management.

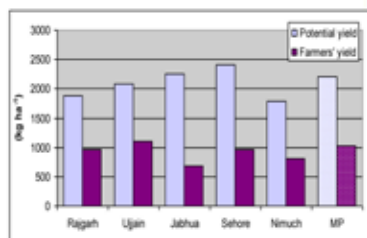


# Rainfed Agriculture has the Potential

Continent Regions	Total arable land (million ha)	Rainfed area (million ha)	% of Rainfed area
World	1551.0	1250.0	80.6
<b>Africa</b>	247.0	234.0	94.5
Northern Africa	28.0	21.5	77.1
Sub-Saharan Africa	218.0	211.0	96.7
<b>Americas</b>	391.0	342.0	87.5
Northern America	253.5	218.0	86
Central America and Caribbean	15.0	13.5	87.7
Southern America	126.0	114.0	90.8
<b>Asia</b>	574.0	362.0	63.1
Middle East	64.0	41.0	63.4
Central Asia	40.0	25.5	63.5
Southern and Eastern Asia	502.0	328.0	65.4
<b>Europe</b>	295.0	272.0	92.3
Western and Central Europe	125.0	107.5	85.8
Eastern Europe	169.0	164.0	97.1
<b>Oceania</b>	46.5	42.5	91.4
Australia and New Zealand	46.0	42.0	91.3
Other Pacific Islands	0.57	0.56	99.3



Observed Yield Gap between Farmers' Yield and Achievable Yields



Yield Gap of Soybean in MP



Globally, out of 1.55 billion ha arable land, 80% (1.25 billion ha) is rainfed with varying proportions from 60% in Asia to 97% in sub-Saharan Africa. Currently, under farmer's management, crop yields are lower by two to five folds of the achievable potential yield. However, with available improved technologies, crop yields can be increased by two to four folds in these regions.

## The Big Threat

### A looming storm:

- Climate crisis
- Water crisis
- Desertification
- Food crisis
- Energy crisis
- Population crisis
- Biodiversity crisis

With the growing population, per capita availability of land and water is decreasing substantially. By 2025, one-third of the population in Asia will face physical scarcity of water, while those in Africa will face economic scarcity of water. In the wake of growing population, increasing incomes in urban areas with changing food habits, and achieving food and nutrient abundance is a challenging task. Impacts of climate change are expected to aggravate existing water scarcity and land degradation challenges, threatening livelihoods of vulnerable communities in rainfed areas.

## New Paradigm to Unlock the Potential of Rainfed Agriculture

- From food production to sustainable production and enhancement of ecosystems
- New deal for rain-fed farmers knowledge intensive agriculture
- Agriculture as the engine of rural growth thru sustainable intensification
- Addresses social, economic, environmental and technological constraints
- Well informed policies and scaling-up of R4D



New paradigm shifts from crop intensification to sustainable intensification will boost food production while enhancing ecosystem functions. It also targets inclusive growth of smallholder farmers by ensuring that arrangements would benefit them through market linkages. This paradigm is science led through participatory research for development (PR4D).

## Sustainable Intensification thru Increased Efficiency of Resources

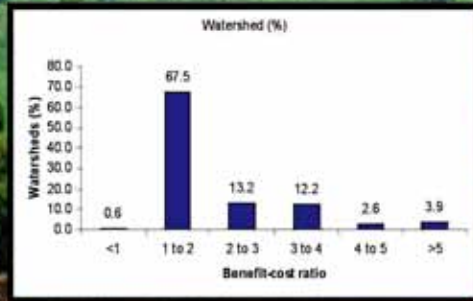
- Land
- Water
- Energy
- Nutrients
- Labor
- Chemicals



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Sustainable intensification is the most important pillar of the new paradigm. To ensure minimum degradation of natural resources while enhancing productivity and profitability, sustainable management and ecosystems services and various resources used in crop production are essential.

## Comprehensive Assessment of Watershed Programs in India: STEP to Achieve Impact



- Less than 1% watersheds are economically non-remunerative
- Two-thirds of watersheds' performance can be improved

The Comprehensive Assessment of Watershed Programs undertaken by an ICRISAT-led consortium showed that watershed programs are slowly revolutionizing rainfed agriculture in India with a benefit cost (B:C) ratio of 2:1. However, a large scope exists to enhance the impacts of watershed programs by improving the performance of 68% of the projects that performed below average. Steps to enhance impacts were identified and recommended.

## Drivers of Success

### Innovations for enhancing community participation

- Demand driven — water scarcity, low crop yields, higher rainfed lands
- Tangible economic benefits to individuals through integrated approach
- Knowledge-based entry point
- Equal partnership, trust and shared vision among the consortium partners

Drivers of success were identified during the comprehensive assessment to ensure that tangible economic benefits were enjoyed by smallholder farmers. Farmer demand-driven interventions promoted community participation and building of trust in the society.

## Drivers of Success (Contd..)

### Innovations for enhancing impacts and sustainability

- Good local leadership
- Pre-disposition to work collectively for community development
- Transparency and social vigilance in the financial dealings
- Equity thru low-cost structures
- Empowerment – enhanced accessibility of new technologies and knowledge sharing developed local capacity

For enhancing impact, besides technical innovations, institutional and policy innovations are important to promote collective action and empowerment.

## Consortium Approach for Community Watershed Management

- ❖ Convergence
- ❖ Collective action
- ❖ Capacity building
- ❖ Consortium for technical backstopping



Based on the learnings from the comprehensive assessment and a number of case studies, ICRISAT in partnership with National Agricultural Research Systems (NARS) developed and evaluated a holistic model for integrated watershed management, ensuring that tangible economic benefits are enjoyed by smallholder farmers and that community participation is enhanced.



## Develop Watersheds as Business Model with PPPP



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For reducing rural poverty, watersheds need to be transformed as business models with public-private-people partnerships (PPPP). This would ensure that agriculture generates marketable surplus production.



## Field-based Soil and Water Conservation Measures Benefiting Farmers

- ❖ Contour cultivation
- ❖ Broadbed and furrow
- ❖ Flat on grade
- ❖ Conservation furrow
- ❖ Border strips
- ❖ Field bunds
- ❖ Vegetative bunds  
(*Gliricidia* and Vetiver plants)



To address the issues of water scarcity and productivity increase through enhanced water-use efficiency, *in-situ* moisture conservation measures/ interventions are used as an entry point activity. Specific measures are identified, evaluated and promoted for enhanced adoption by farmers.

## Evaporation Management for Higher WUE



### Reduce non-productive evaporation

- Dry planting, mulching, conservation agriculture, intercropping, early plant vigour, agroforestry and vegetative bunds



Green water, which is soil moisture, needs to be used effectively for biomass production. For that, non-productive evaporation losses must be minimized through measures such as plastic mulching, straw mulching, crop canopy cover, etc.

## *Ex-Situ* Water Conservation

- To mitigate dry spells, recharge groundwater, enable off-season irrigation and permit multiple uses of water



Once *in-situ* rainwater conservation measures are implemented, excess rainwater in the fields needs to be taken out safely and stored *ex-situ* in cost-effective small rainwater harvesting structures, which should be constructed throughout the topo-sequence in a watershed to ensure quality and water availability to smallholders located at upstream locations.



## Water Alone Can't Do It



Although water is the main factor, risks in rainfed agriculture are also associated with other factors such as soil health, pests and diseases, use of improved cultivars and markets, which play an important role in crop production and profitability.

## Improved Soil Health

- Conserve Soil
- Diversify systems with legumes
- Organic matter
- Balanced nutrition – Emerging wide spread micronutrient deficiencies



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Good soil health is the most important factor for enhancing crop production through efficient use of available water resources. Measures such as diversifying cropping systems using legumes, producing *in-situ* organic matter by growing nitrogen fixing plants like *Glyricidia*, *Cassia semia* etc., on farm bunds and soil test-based balanced integrated nutrient management are crucial for enhancing productivity.

## SAT Soils are not only Thirsty but Hungry also

- ❖ Documented widespread deficiency of micronutrients in farmers fields across India

State	No. of farmers' fields	OC (%)	AvP (ppm)	K (ppm)	S (ppm)	B (ppm)	Zn (ppm)
Andhra Pradesh	3650	76	38	12	79	85	69
Gujarat	82	12	60	10	46	100	85
Jharkhand	115	42	65	50	77	97	71
Karnataka	38432	65	43	14	82	68	
Kerala	28	11	21	7	96	100	18
Madhya Pradesh	341	22	74	1	74	79	66
Orissa	157	17	69	4	97	10	99
Rajasthan	421	38	45	15	71	56	40
Tamilnadu	119	57	51	24	71	89	61
India	43345	65	43	14	81	69	62

OC = Organic Carbon; AvP = Available phosphorus

Analysis of hundreds of thousands of soil samples from farmers' fields in different states across India revealed widespread deficiencies of multiple nutrients including micro and secondary nutrients in the country. The vast potential for increasing crop production and sustainability of rainfed systems can be harnessed through balanced nutrient management.

## Bhoochetana: GoK-ICRISAT Innovative Scaling-up Initiative to Bridge Yield Gaps



To address the issues of low agricultural growth over the last six to seven years in Karnataka state, the government organized a brainstorming session and invited ICRISAT to suggest possible ways to improve agricultural sector production based on the pilot productivity enhancement initiative of the Sujala-ICRISAT-World Bank aided watershed. ICRISAT proposed the program to unlock the potential of rainfed agriculture, which constitutes 70% of arable land in the state. This mission mode program, planned and technically supported by ICRISAT, is implemented by the Department of Agriculture and referred to as “Bhoochetana”, which means rejuvenation of soil strengths.



## Bhoochetana Objectives

- ❖ Identify and scale-up best management practices (soil, crop, nutrient and water management) to enhance productivity by 20% of crops in 30 districts
- ❖ 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.
- ❖ Build the capacity of the stake holders (DoA Staff, farmers and consortium partners) to implement practices in the sustainable management of natural resources and enhancing productivity in dryland areas

## What is Bhoochetana

- ❖ Mission mode program to improve livelihoods of small farm-holders
- ❖ Process driven mission strategy and not a target-based approach
- ❖ Strategy to rejuvenate soils to improve crop productivity through rejuvenation of human minds and changing the mindset of all actors
- ❖ Evolutionary and holistic strategy to empower the stakeholders to achieve the impacts
- ❖ Develop innovations

Bhoochetana is a holistic process-driven mission and demand-driven program of participatory research for development to up-scale a number of innovations to benefit millions of smallholder farmers in the rainfed region of the state.

## Important Pillars of Bhoochetana



The Bhoochetana program is based on four important pillars namely: partnerships through a consortium of knowledge developing and knowledge transforming development institutions along with public private partnership; convergence of national and state schemes in the Department of Agriculture (DoA); convergence of actions of different actors through collective action; and capacity building measures, which played an important role for increasing productivity through enhanced efficiency, equitably while protecting the environment and achieving economic growth.

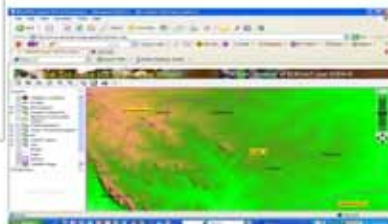
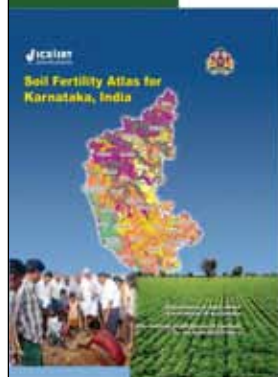
## Community Empowerment



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Empowerment of different stakeholders, right from farmers to the policy makers, played an important role in the success of the project. For empowerment, master trainers from State Agricultural Universities and the DoA were trained by ICRISAT's team of scientists. The Master Trainers conducted several training courses at the district, *taluk* (sub-district) and *hobli* (a cluster of adjoining villages) levels.

## Soil Maps of Boron and Sulfur Status in Karnataka



Farmers' participation in stratified soil sampling for the whole state was undertaken. Soil samples were analyzed and health maps were prepared using GIS. Information about wide-spread deficiencies of micronutrients such as zinc and boron, and secondary nutrients such as sulphur were disseminated using different means such as soil health atlas, web-based soil maps, wall writings and soil health cards for the farmers.

## Success Story of GOK: *Bhoochetana*

### ❖ Extent of area coverage

Component	2009-10	2010-11	2011-12	2012 Kharif
Area (million ha)	0.2	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	517	2500	5688	9700
No. of lead farmers	1867	10500		45000
Crops	Ragi, Maize, Groundnut & Soybean	Ragi, Maize, Groundnut, Soybean, Cotton, Redgram, Bajra, Blackgram, Jowar, Greengram, Bengal Gram		Ragi, Groundnut, Tur, soybean, cowpea, Greengram, Maize, Bajra, Sunflower, Safflower, Jowar, Avare, Cotton, Rainfed paddy

A detailed planning strategy with the DoA was developed to cover the whole state (30 districts) in a phased manner during four years. We started with an area of 0.2 million ha in the first year covering six districts and 1,440 villages. Gradually this was increased to 3.73 million ha during the fourth year covering 30 districts across the state, impacting 26,293 villages and 4.39 million farmers. An important component of the program was the appointment of farm facilitators, who are farmers from the same village and who serve as link between farmers and the DoA. All the farmers registered to join the program willingly and all the inputs were bundled together to ensure that they follow the best practices – application of balanced nutrients, use of improved seeds, etc..

## Regular Monitoring and State-district Level Video Conference



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Regular monitoring through the high powered state level coordination committee and district level monitoring to resolve the bottlenecks during implementation was an important component for Bhoochetana. Regular weekly conferences with all the 30 districts resolved on-site problems as it led to quick decisions at the state level coordination committee.

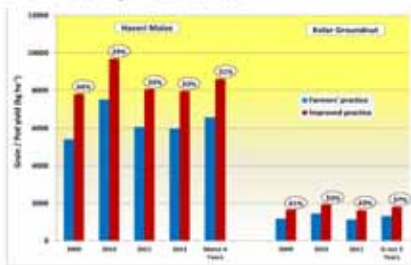
## Increased Crop Yields by 23 to 66 per cent for Small Farmholders



Mean yields of ragi, maize and soybean from farmers' fields in different districts of Karnataka during rainy season 2009



Increased oil seed crop yields with improved management practices under Bhoochetana over farmers' practices in different districts, rainy season 2011



Increased yields of maize in Haveri and groundnut in Kolar districts with improved management during 2009-2012

Ten thousand farm facilitators and DoA staff ensured coverage of large areas (3.73 million ha) in the fourth year. Five randomly selected farmers' fields for each of the selected crops in each *taluk* (sub-district) were used for crop cutting experiments. From each selected farmer's field, an area of 18 – 30 mt<sup>2</sup> was selected for undertaking crop cutting experiments. From plots where improved management practices have been applied, crops were harvested and the fresh weight of the samples was recorded in the field in front of representatives from DoA, Department of Economics and Statistics, State Agricultural Universities, ICRISAT and farmers. The datasheets were signed off in the fields by all the members. Harvested samples were further dried and used for yield recording.

## Bhoochetana Benefits in Karnataka

Year	Area under Imp Mgmt (m ha)	Production of Crops with Imp Mgmt (m t)	Production of Crops with Farmers' Mgmt (m t)	Increased Production with Imp Mgmt (mt)	Value of Additional Production with Imp Mgmt (Million \$)	Cost of Inputs (Million \$)	Net Income (Million \$)
2012	0.49	1.44	1.12	0.33	94.0	12.0	82.1
2011	0.58	2.14	1.61	0.54	119.0	9.6	109.0
2010	0.18	0.41	0.34	0.12	41.2	4.1	37.2
2009	0.02	0.05	0.03	0.015	2.5	0.5	2.1
Total	1.27	4.10	3.10	1.01	256.7	26.2	230.4



## Bhoochetana: A Novel Initiative



The detailed assessment of the benefits with improved management practices using crop cutting experiments as well as the recordings of areas under improved management practices as Raitha Samparka Kendras (RSKs) during registration enabled the calculation of the benefits of Bhoochetana in the state. During the four years with improved management under Bhoochetana, farmers gained a net income of US\$ 230 million. For individual farmers, the cost: benefit cost ratio using full cost of the nutrients without any subsidy ranged from 2.6 to 14.6. For the state, after taking into account all the investments including the incentives provided, the benefit to cost (B:C) ratio roughly worked out to be 6:1.



## Bhoochetana: Improving Livelihoods



Improved management practices in Bhoochetana benefited farmers through increased crop yields by 20 to 66% depending on crops, soil type and rainfall at different locations. For individual farmers, at full cost for every dollar invested, they earn an additional income of US\$ 3 – 14 with a B:C ratio of 3 to 14:1. During four years of additional benefits through increased crop production with Bhoochetana interventions, the net economic benefits were estimated to be US\$ 230 million for the farmers and the government. Increased productivity and production of agricultural crops in the state resulted in >5% agricultural growth annually during the period.

## Champions at Higher Level are Must



Chief Minister launched the Project



Chief Secretary Shri SV Ranganath delivering the Inaugural Address in Review & Planning Meeting



Agriculture Minister Reviewing the progress



Dr Kaushik Mukherji, Development Commissioner addressing the participants in Review & Planning Meeting

Bhoochetana was championed by higher level policy makers – right from the Development Commissioner, Chief Secretary, Agricultural Minister up to the Chief Minister of the State. Championing by the higher policy makers ensured timely actions by the Department as well as effective implementation in the state which helped to achieve the impact on a massive scale.

## Review and Planning Meetings



Detailed meetings to devise work plans at the district level were conducted annually at ICRISAT. District-wise planning at district and *taluk* (sub-district) levels were undertaken by DoA in the state, wherein district and *taluk* areas to be covered, target crops, input requirements as well as financial requirements were discussed and planned every season. Such planning enabled mobilizing of human resources as well as other necessary inputs.

## Empowering Other Stakeholders

- ❖ Training of agricultural technicians & farmers (farmers facilitators, lead farmers & farmers)
- ❖ Knowledge sharing: Field days
- ❖ Publications & information drive
- ❖ Technology demonstration



### The Guardian

India farmers think big but grow micro to enrich their soil

Agriculture in Karnataka is enjoying a sort of productivity boom because of the soil using technology.



Practitioners are helping farmers to use a fertilizer, like, and the government has also been providing subsidies for the farmers.

Working in the past, farmers with little, using their own traditional methods, but now, they are using the technology, and the government is also providing subsidies for the farmers.

Since 2010, there is a big boom in the production of 11 million people, the government is also providing subsidies for the farmers, and the government is also providing subsidies for the farmers.



Empowerment of all the stakeholders played an important role. Besides training courses for farm facilitators, field days, publications and innovative knowledge dissemination methods were crucial for the success of Bhoochetana.

## Rejuvenated Extension System

- ❖ Empowered farmers as para extension workers
- ❖ Farm Facilitators (FF) and Lead Farmers (LF)  
Every 500 ha one FF and 2-3 LFs
- ❖ Training and empowering FFs and LFs by master trainers trained by ICRISAT
- ❖ To be certified and quality assurance



An important driver of success for Bhoochetana was the creation of innovation knowledge sharing system using empowered farmers as extension workers. Ten thousand farm facilitators at the rate of one farm facilitator for every 500 ha during the cropping season along with farmer leaders during the peak activities of the season enabled the DoA to reach millions of farmers. Farm facilitators had to undergo two weeks of training to obtain eligibility certificates.

## New Innovative Extension Systems: Farmer to Farmer Videos and Tablet-based Extension for Farm Facilitators



To extend the reach of the farm facilitators and also empower them with up-to-date knowledge in partnership with Digital Green, we are using farmer to farmer videos from pico projectors for building the capacity of the farmers. ICRISAT has also embarked on “Krishi Gyan Sagar (KGS)” with the district officials as well as on geo-referencing activities of the farm facilitators. All the information about the management practices as well as soil health recommendations and farmer schemes have been provided in the local language i.e., Kannada, on the tablets for the convenience of farm facilitators.

## Monitoring and Evaluations

**Rigorous – Regular – Resourced – Remote (4 Rs)**

- ❖ Empowered State-Level Coordination Committee (SLCC)
- ❖ District and taluk level coordination committees
- ❖ Decentralized powers with accountability
- ❖ Awareness building amongst the farmers who need to register (demand driven)
- ❖ Incentivize inputs but farmers must pay
- ❖ With timely interventions ensure removal of bottlenecks (godowns hiring, trainings, transportation funds etc.,)



Regular monitoring and evaluation were important for covering large areas effectively. The bottlenecks faced during the implementation were resolved through remote monitoring systems.

## 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



The Bhoochetana program not only benefited farmers with increased productivity by 20 to 66 % but also enabled the State Government to achieve over 5% agricultural growth rate during the last four years. This resulted in the recognition of the State Government's efforts at the national level. The state received the Krishi Karman award for the highest productivity of cereals from the Prime Minister of India. During 2011, the Government of Karnataka also received the agricultural leadership award for the best performing state by the Agriculture Today magazine.



# Bhoochetana in the Limelight



The success of Bhoochetana has been covered by print and broadcast media. The communication strategies employed played an important role in disseminating the results to millions of farmers.

## Bhoochetana in the Limelight *(Contd..)*

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

National and international entities, as well as regional and national policy makers have recognized the success of Bhoochetana, and are now scaling-up the program in neighboring states such as Andhra Pradesh. The Government of the Philippines has also started implementing a program similar to Bhoochetana in four provinces of the country.



## Learnings



- **Scientific approach and technical support enabled dryland farmers to enhance crop productivity significantly (32 to 66%)**
- **All the incentivised inputs must be bundled together as a package else farmers are tempted to go for seeds etc., which they know**
- **Timely availability of inputs must be ensured**
- **Clear and timely flow of written communication to districts need to be ensured for timely actions**

Bhoochetana has gained reputation – it has not only benefited farmers but also increased the net value of production by US\$ 230 million in the last four years.

# Thank you!



ICRISAT is a member of the CGIAR Consortium

**ICRISAT**  
Science with a human face

**International Crops Research Institute  
for the Semi-arid Tropics**



**International Crops Research Institute  
for the Semi-Arid Tropics**

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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ICRISAT's scientific information: <http://EXPLOREit.icrisat.org>