

India

Methods and Approaches for Assessing Adaptation, Adaptation Co-benefits and Resilience



सत्यमेव जयते

Government Of India

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Climate Adaptation through Water Conservation



Convergence with MGNREGA



India



Achievements at a glance.....

PMKSY

Million Farm Ponds

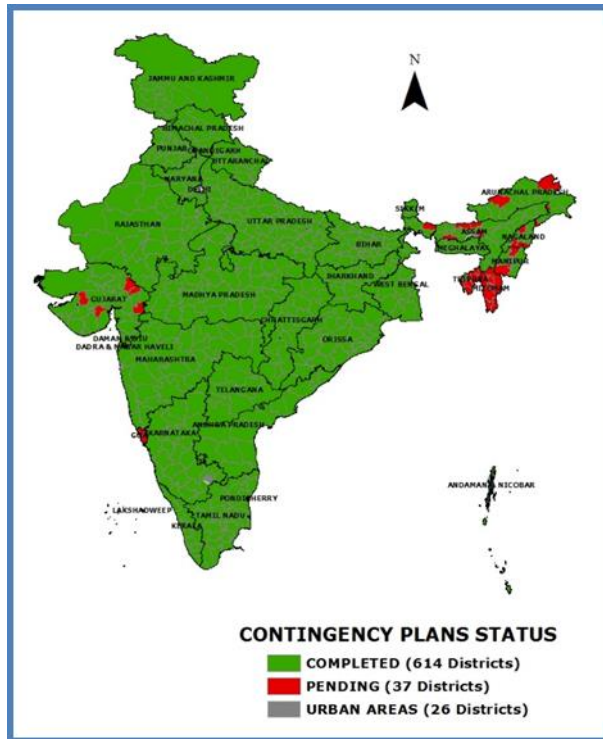
Efficient Water Utilization

- @ More Crop Per Drop
- @ Cropping Intensity
- @ Stability of Food Production
- @ Stable Livelihoods

Integrated Farming Systems (IFS) Promotion in India



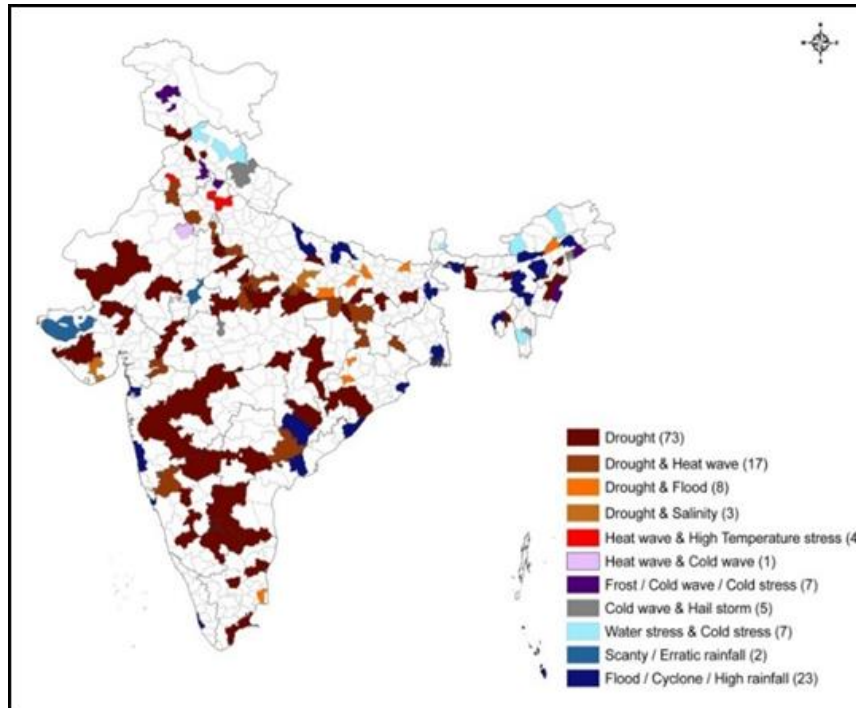
Agriculture Contingency Plans for Climate Resilient Agriculture in India



- @ Able to reach State Action Plans – NMSA, several programs
- @ Policy makers
- @ District-Mandal-Village Level Implementation
- @ 2014: 9% Sowing area reduction offset
- @ Rabi area increased (ex. Pulses)
- @ Large scale land treatments implemented
- @ 2015: 12 State Interface Meetings; Pulses, millets area increased



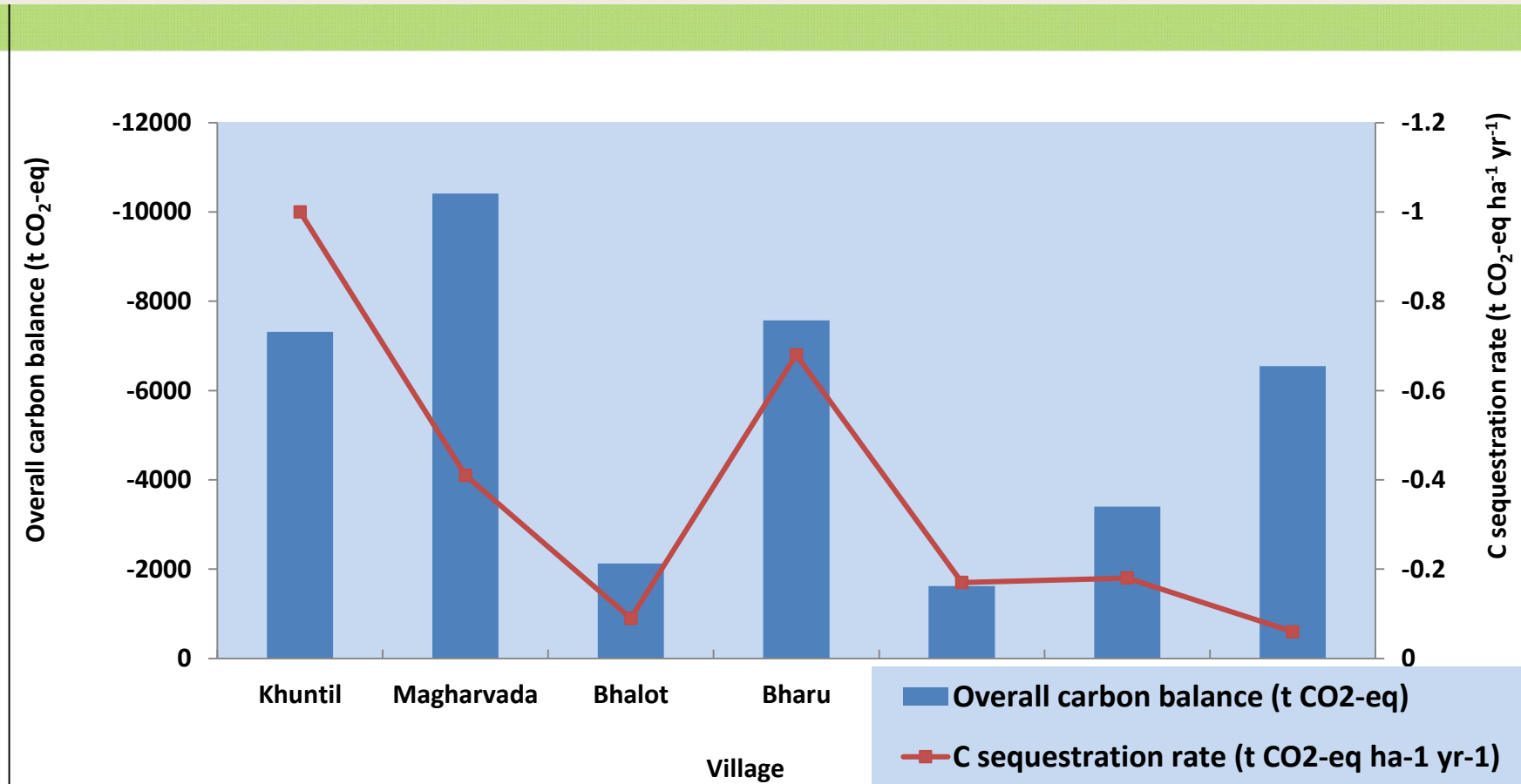
Climate Resilient Villages Establishment in India



@ NMSA
@ PMKSY
@ Soil Health Mission
@ Green India Mission
@ Water Mission
@ State Rainfed Missions

Large Scale Replication
of Resilient Village
Models

Village Level Carbon Balance in Climate Resilient Villages



Overall C balance and C sequestration rate for the seven climate vulnerable villages from Gujarat and Rajasthan states with the implementation of the NICRA project.

Note: Overall C balance = f (Annuals + perennials + irrigated rice + land use change + livestock + inputs)

National Missions for Climate Adaptation and Co-Benefits in India

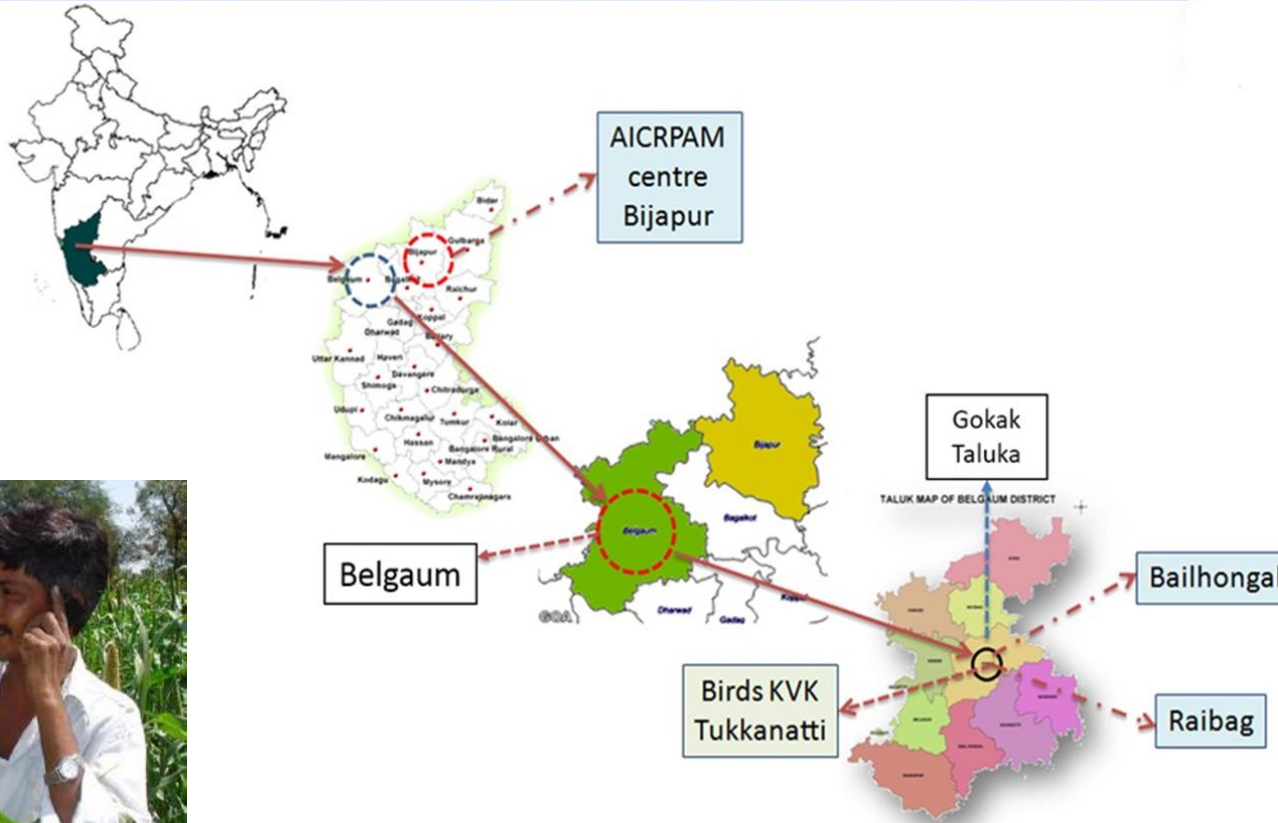


- @ National Mission for Sustainable Agriculture,**
- @ National Mission on Enhanced Energy Efficiency,**
- @ National Water Mission,**
- @ National Mission for Sustaining the Himalayan Eco-system,**
- @ National Mission for a Green India,**
- @ National Mission on Strategic Knowledge for Climate Change.**

Agriculture Insurance for Climate Change Adaptation and Risk Minimization



Selection of District, Block, KVK and villages for Microlevel Agromet Advisories



PM Agriculture Insurance Scheme

Registrations increasing

Premiums Reduced

Horticulture Included



Approaches for Climate Adapation

Integrated Climate Adaptive Approach Livestock Production in India



- @ Feed Management
- @ Tolerant Breeds
- @ Shelter Management
- @ Feed + Breed + Shelter



Government Approaches for Adaptation

More Per Drop or More Per Unit and Doubling Farmer Income

- @ Conserving Natural Resources**
- @ Efficient Utilization**
- @ Environmental Issues**
- @ Market and Value Addition**
- @ Farmers Income**

Approaches for Adaptation & Resilience in Indian Agriculture



@ Agro-Ecosystem: Which technology to Where
(Technology Targeting)

@ Village Institutions: such as community Seed Banks, farmer producer organisations/farmer producer companies, custom hiring centres for farm machinery and equipment, cooperative credit societies, Commodity Groups etc.

Village Institutional Approach

Village Climate Resource Management Committee (VCRMC) and Custom Hiring Centre

VCRMC member : 20 (M: 14; F: 6)



NATIONAL INITIATIVE ON CLIMATE RESILIENT AGRICULTURE AT
 VILLAGE : BONGHERI, P.O. : KAKHALI ASHRAM, BLOCK : KULTALI, DIST. : SOUTH 24 PARGANAS, WEST BENGAL.
 FINANCIAL ASSISTANCE BY NATIONAL COUNCIL OF AGRICULTURAL RESEARCH, NEW DELHI
 JOINTLY ORGANIZED BY RAKKRISHNA ASHRAM KRISHI VIGYAN KENDRA, NIMPITH ASHRAM, DIST. : SOUTH 24 PARGANAS & CENTRAL RESEARCH INSTITUTE FOR DRYLAND AGRICULTURE, HYDERABAD

পরিবর্তনশীল আবহাওয়ার সাপেক্ষে দীর্ঘস্থায়ী কৃষি ব্যবস্থা
 স্থান : বন্দেহরী, পোস্ট : কৈশালী আশ্রম, ব্লক : কুলতালী, জেলা : দক্ষিণ ২৪ পরগণা, পশ্চিমবঙ্গ
 আর্থিক সহায়তা ভারতীয় কৃষি অনুসন্ধান পরিষদ, নয়াদিল্লী
 যৌথ পরিচালনা রাক্কৃষ্ণ আশ্রম কৃষি বিজ্ঞান কেন্দ্র, নিমপীঠ, দক্ষিণ ২৪ পরগণা
 সেন্ট্রাল রিসার্চ ইনস্টিটিউট ফর ড্রাইল্যান্ড অগ্রিকালচার, হায়দরাবাদ

Implements/ Instruments at custom hiring centre	Total strength
Power tiller	3
Paddy Reaper	1
Soil testing Kit	2
Paddy thresher	5
Pumpset	4
Knapsack sprayer	4
Conoweeder	4

Community Participation- for Adaptation Implementation



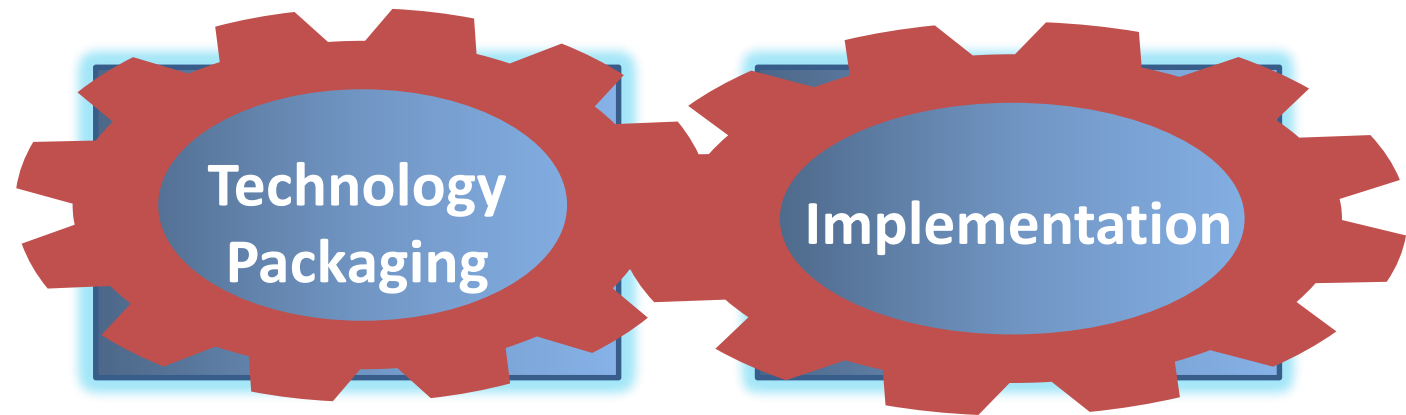
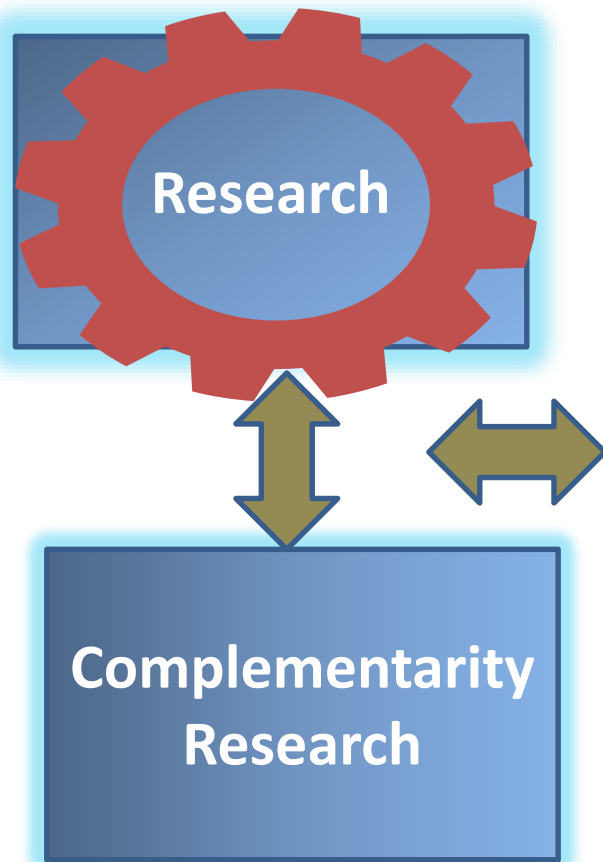
Village Climate Risk Management, Custom hiring centres, Capacity building of stakeholders, Cross learning visits

Potential of Technology Packaging for Enhanced Productivity in Ecosystems



S. No.	Technology	Potential of Technology
1	Water Based	20-30%
2	Soil Health	15-20%
3	Tolerant Cultivars	15-20%
4	Crops and Cropping Systems	15-25%
5	Farm Mechanization	23-33%
6	IFS	54-142%
7	Agroforestry	10-35%
8	Synergy Technology Package	150-250%

Synergies are Must for Resilient Farming Systems



Synergy Among Govt. Programs in India

Government of India: Ministries for Climate Adaptation

- 1) Agriculture and Farmers Welfare**
- 2) Ministry of Environment, Forestry and Climate Change**
- 3) Rural Development**
- 4) Earth Sciences (Science and Technology)**
- 5) Water Resources**
- 6) Renewable Energy**
- 7) Urban Ministry (Smart Cities)**

Resilience Evaluation

- @ Exposure**
- @ Sensitivity**
- @ Adaptation or Risk Reduction**
- @ Adaptation Cost**
- @ Resilient Infrastructure**
- @ Co-Benefits**
- @ Overall Resilience Indicators**

Many Adaptation Actions in Agriculture



- @ Methodology for accounting adaptation !**
- @ Indicators !**
- @ Quantifying them !**
- @ Cumulative accounting !**

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एक कदम स्वच्छता की ओर

Thank You



India

International Yoga Day at NAARM