

Government of India's Perspective and Initiatives on Integration of Future Smart Food in Rice-Fallows

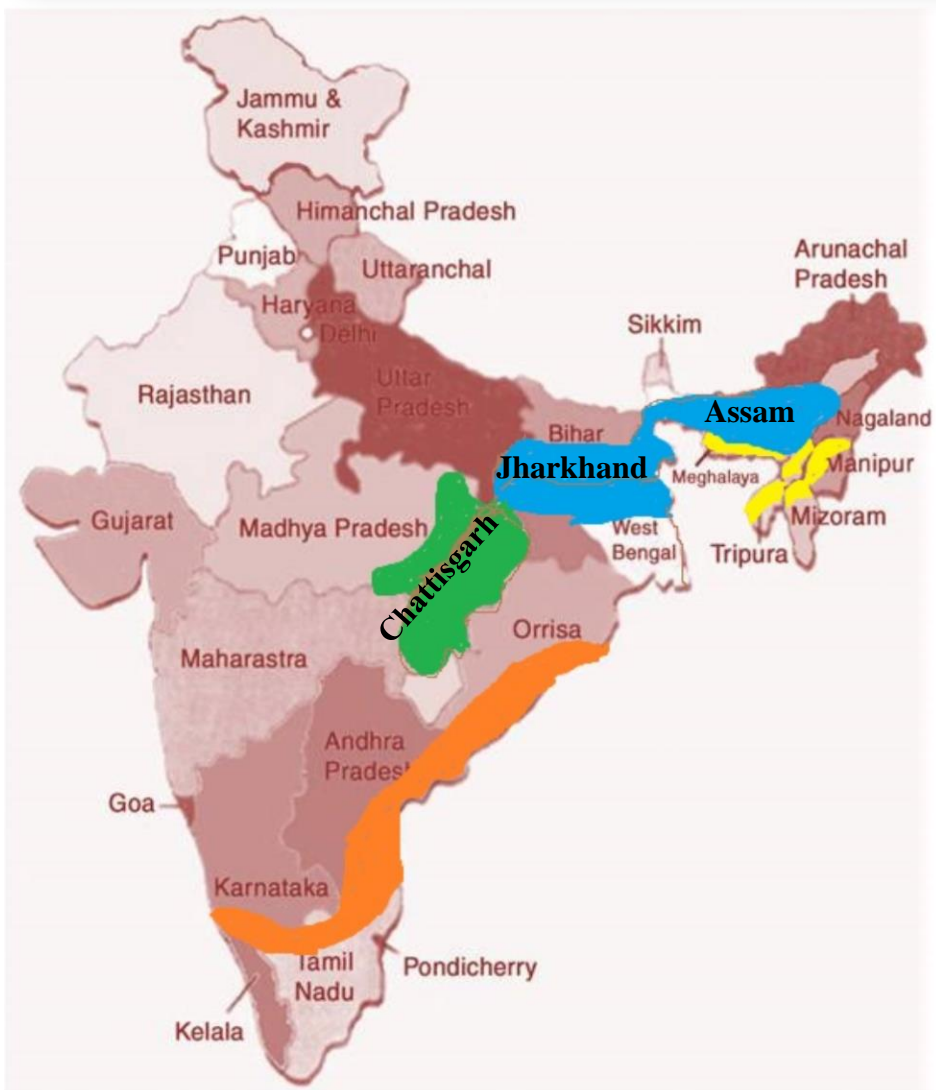


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Rice Fallow Areas in India

- India accounts for 79% (11.65 million ha) of the total rice fallows of South-Asia (15.0 million ha) (NAAS, 2013)
- Rice fallows are widely distributed in rainfed eco-system of Eastern, Central and Peninsular India, besides the North-Eastern Hill region
- Rice fallows are spread mainly in the states of Andhra Pradesh, Assam, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, West Bengal and Uttar Pradesh
- The Coastal Regions of Andhra Pradesh, Karnataka and Tamil Nadu form an important rice fallow ecology in Peninsular India

Rice Fallows in India (11.65 million ha)



Eastern Region : 4.27 m ha
Eastern U.P., Bihar, Jharkhand
and West Bengal

North-east Hill Region: 0.54 m
ha
Assam

Central Region : 5.01 m ha
Madhya Pradesh, Chhattisgarh,
Maharashtra

Coastal region: 1.52 m ha
Andhra Pradesh, Odisha, Tamil
Nadu

Estimated Area under Rice Fallows in India

State	Kharif rice area (m ha)	Rabi fallow (m ha)	Rice fallow as % of kharif rice areas
MP + Chhattisgarh	5.60	4.38	78.21
Bihar + Jharkhand	5.97	2.20	36.85
West Bengal	4.62	1.72	37.23
Odisha	3.88	1.22	31.44
Maharashtra	1.76	0.63	35.80
Assam	2.23	0.54	24.22
Uttar Pradesh	6.62	0.35	5.29
Andra Pradesh	2.66	0.31	11.65
Others	7.20	0.30	4.17
Total	40.18	11.65	29.00

Source: Anon. (2013), National Academy of Agricultural Sciences, Policy Paper 64 and Singh NP et al. (2016). Indian Journal of Genetics and Plant Breeding 76(4): 388-398.

Potential Crops for Rice Fallows in Different States

Crop	State
Lentil	Assam, West Bengal, Bihar, Odisha, Eastern Uttar Pradesh, Chhattisgarh and Jharkhand
Pea	Jharkhand, Chhattisgarh, Eastern Uttar Pradesh and Northern Madhya Pradesh
Chickpea	Chhattisgarh, Bihar and Jharkhand
Green gram	Odisha, Chhattisgarh, Jharkhand, Bihar, Andhra Pradesh, Tamil Nadu and Karnataka
Black gram	Coastal Andhra Pradesh, Tamil Nadu, Karnataka and Odisha



Crop	State
Grass pea (Lathyrus)	Tal area of Bihar, Chhattisgarh and West Bengal
Cluster bean	Andhra Pradesh, Tamil Nadu and Karnataka
Lablab bean	Andhra Pradesh, Tamil Nadu and Karnataka
Mustard	Eastern Uttar Pradesh, Bihar and Jharkhand
Sesame/Linseed	Odisha , Chhattisgarh, West Bengal, Jharkhand
Groundnut	Char area of Bihar, Mahananda of Odisha, Brahmaputra valley of Assam and coastal Andhra Pradesh
Source: NAAS Policy Paper 64 (2013)	



How to Utilize Rice Fallows

- ❖ Use of short duration rice varieties during kharif.
- ❖ Selection of appropriate crops/varieties
- ❖ Introduction of short duration/water efficient genotypes
- ❖ Area specific Refinement of Package of Practices
- ❖ Introduction of water efficient genotypes
- ❖ Enhancing seed germination/seed treatment



- ❖ Pelleting of seeds
- ❖ Use of Utera System (Relay Cropping)
- ❖ Foliar application of nutrients
- ❖ Timely plant protection
- ❖ Providing life saving irrigation through sprinklers
- ❖ Special initiatives by the Governments



Initiatives Taken by Government of India

- ❖ Mapping of potential districts for cultivation of oilseeds and pulses
- ❖ Creation of water harvesting structure, supply of sprinklers for live saving irrigation, water carrying pipes
- ❖ Supply of seed minikits for pulses and oilseeds to promote new high yielding varieties.
- ❖ Creation of seed hubs by ICAR-KVKs
- ❖ Cluster demonstrations on oilseeds and pulses in selected districts and villages for a continuous period of three years.
- ❖ Coordination and collaboration with International organizations for developing varieties/technologies.
- ❖ A scheme has been launched in rabi 2016-17 for targeting 30 lakh ha of rice fallow under oilseeds and pulses by next three years

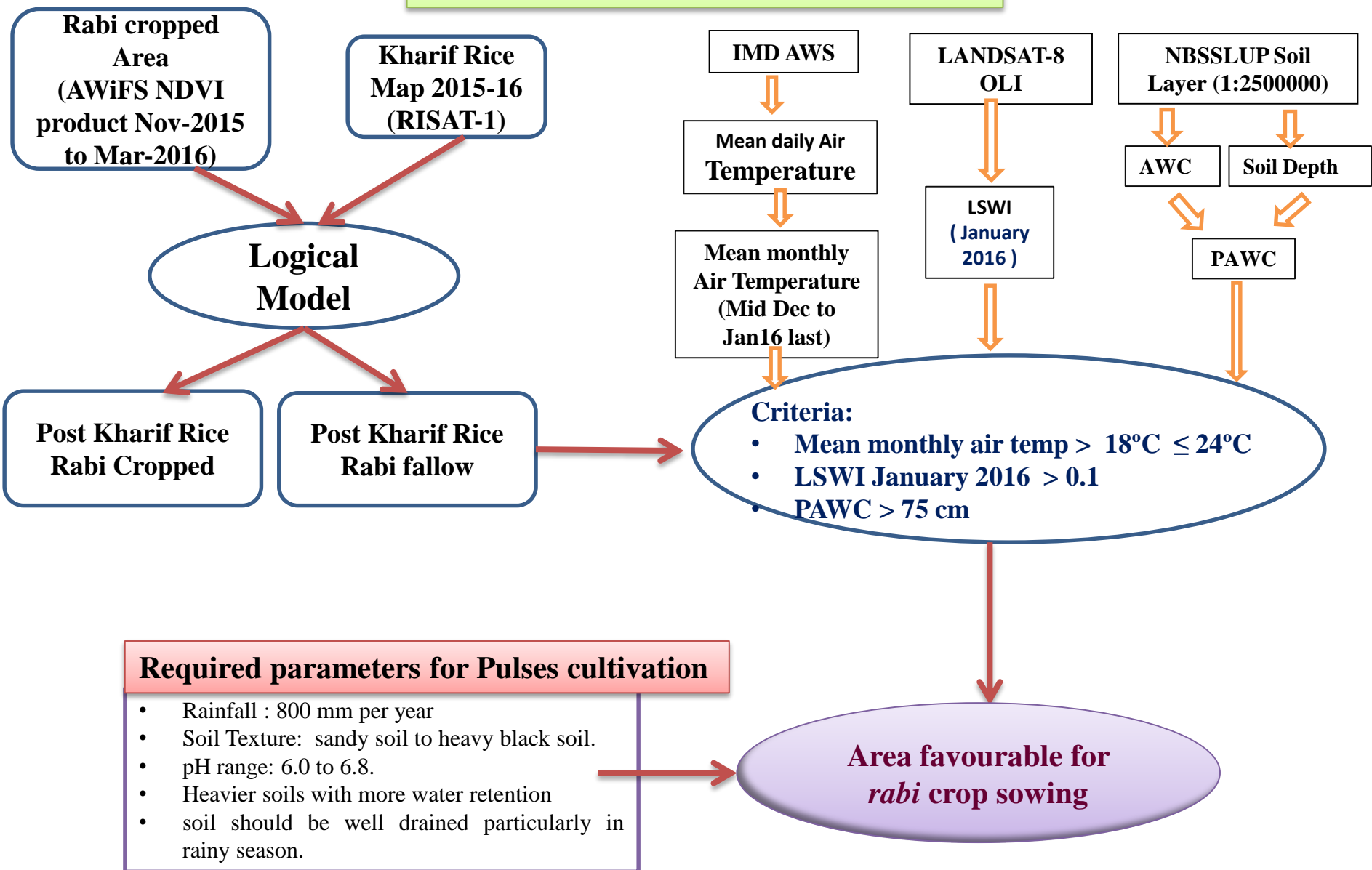
Targeting Rice Fallow Areas in Eastern India

- DAC&FW is implementing a sub-scheme under Rashtriya Krishi Vigyan Yojana (RKVY) – “Targeting Rice Fallow Areas” in Eastern India since *rabi* season 2016-17.
- The implementing states are:
 - Assam, Bihar, Chhattisgarh, Jharkhand, Odisha and West Bengal with a total fund of **Rs. 75.00 crore**.
- Potential area : above 57.00 lakh ha
- Target area : 30.00 lakh ha in 3 years.
- An area of 19.00 lakh ha has been covered during *rabi*/summer in these states.

Mapping Rice Fallow Areas in India

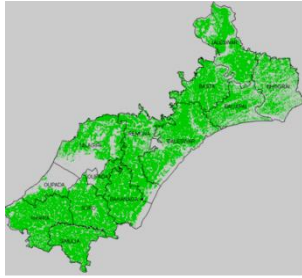
- ❖ In India efforts on mapping of rice fallow areas in some Eastern States using remote sensing technique has been attempted through Mahalanobis Crop Forecasting Centre, New Delhi.
- ❖ The centre has applied remote sensing data with ground validation survey to identify rice fallow areas in Odisha, Chhattisgarh and other states.

Approach for Suitability Analysis

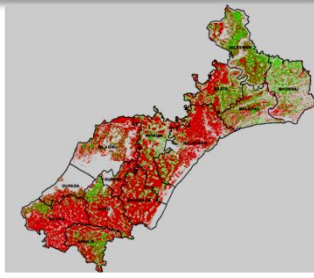


Post Kharif rice fallow area suitable for *rabi* crop growing

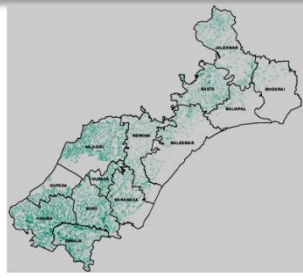
Suitability Analysis for Rabi Crops



Kharif Rice 2015-16

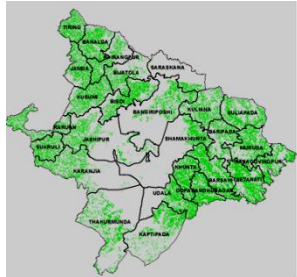


Post Kharif rice and rabi fallow
Kharif rice Rabi Crop

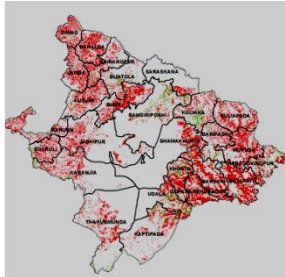


Suitable Area for Rabi Crop

Baleshwar District (Odisha)



Kharif Rice 2015-16

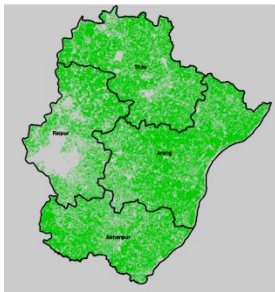


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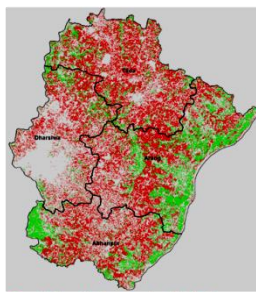


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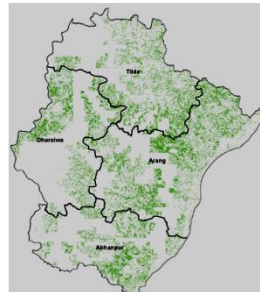
Mayurbhanj District (Odisha)



Kharif Rice 2015-16

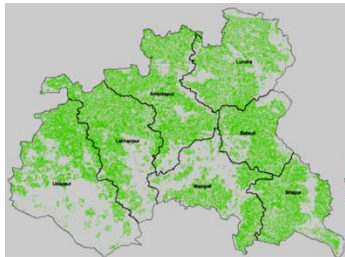


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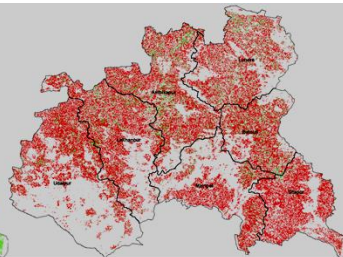


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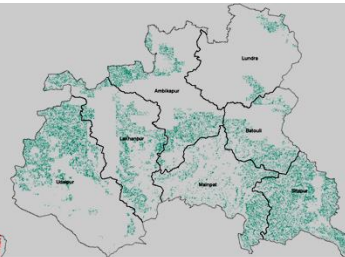
Raipur District (Chhattisgarh)



Kharif Rice 2015-16



Post Kharif rice and rabi fallow
Kharif rice Rabi Crop



Suitable Area for Rabi Crop

Sarguja District (Chhattisgarh)

Conclusions and Way Forward

- ❖ Mapping of potential zone through remote sensing
- ❖ Enabling policy- integrating market, MSP, buffer stock, warehousing.
- ❖ Cropping system approach including intercropping
- ❖ Community water reservoirs
- ❖ Promotion of Farm implements/tools.
- ❖ Ensuring timely availability of critical inputs
- ❖ Strong seed production chain
- ❖ Facilitating Rural credit
- ❖ Protection from stray cattle/wild animals
- ❖ Consolidation of R&D activities for future roadmap
- ❖ Capacity building and awareness to the farmers.

Thank You

