

# Advancing climate-resilient agriculture in India: Key lessons and challenges

3<sup>rd</sup> February 2023



# Overview

## Advancing climate-resilient agriculture in India: Key lessons and challenges



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**Anil Kumar Jha**  
Deputy Director, Department of Agriculture  
Government of Bihar



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Consultant  
TERI



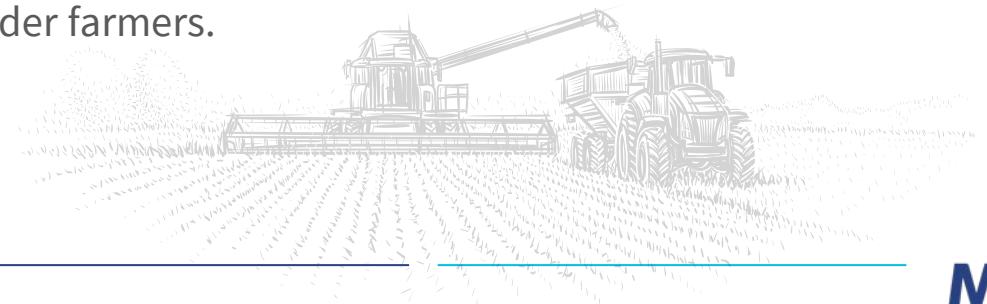
**Rajat Shubhro Mukherjee**  
Advisor, Climate Change and Finance  
GIZ-CAFRI

A webinar hosted by MSC on “Advancing climate-resilient agriculture in India: Key lessons and challenges” included panelists from the Government of Bihar, TERI, and GIZ.

The session was structured around understanding good practices that have advanced climate-resilient agriculture in Bihar and elsewhere in India and the challenges that persist due to climate change risks for smallholder farmers.

Participants looked at interventions by the Government of Bihar to advance climate-resilient agriculture and ways to scale them up. They also examined challenges related to financing and information to expand climate-resilient agricultural practices to rural communities in India.

The webinar brought together stakeholders working on various elements of agricultural value chains, particularly with a focus on advancing financial services to meet the needs of vulnerable smallholder farmers.



# Impacts of climate change on smallholder farmers and their coping strategies in the state of Bihar



## Partha Ghosh,

Senior Manager, Agriculture  
MSC

- MSC's flagship work on climate-resilient agriculture highlights the impacts of climate change on smallholder farmers in Bihar. Read the full report [here](#).
- The overuse of fertilizers leads to production loss in the face of climate vulnerabilities.
- As a part of their adaptation strategy, resilient farmers who have switched to high-yielding crops can secure good returns on their produce. Some have moved toward jobs in the rural sector, supported by JEEViKA, an initiative by the Government of Bihar to alleviate poverty.

Discover insights on the resilient strategies adopted by smallholder farmers in Bihar and learn how gender influences their experience, in MSC's blogs here:

[Traits of resilient and vulnerable smallholder farmers](#)

[The impact of climate change and coping strategies adopted by smallholder farmers in Bihar](#)

[Seven factors that determine the resilience and adaptive ability of smallholder farmers in Bihar](#)

# Climate-resilient agriculture program, Bihar: Genesis and journey

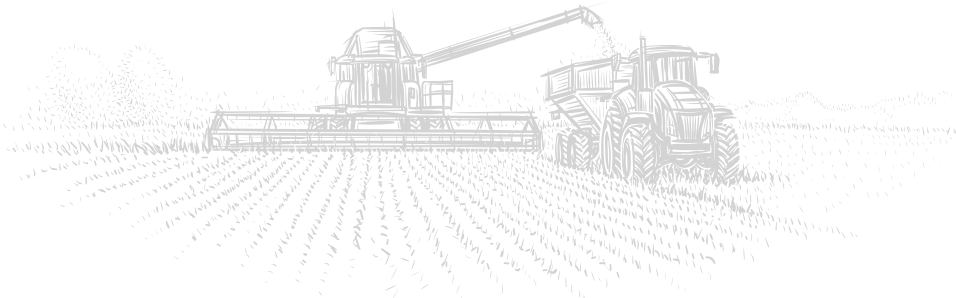


## Anil Kumar Jha

Deputy Director, Department of Agriculture,  
Government of Bihar

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- Biotic and abiotic stressors are leading to declining crop productivity, increased crop loss, dwindling incomes, and increased production costs, stressing farmers across Bihar.
- Projected temperature and rainfall anomalies adversely impact small and marginal farmers. Bihar will likely experience a 10-40% reduction in rice production.
- One-third of Bihar's agricultural budget comprises financial assistance to farmers to help them decrease climate vulnerabilities.
- Bihar's Climate Resilient Agriculture Program aims to nurture farming practices and develop an adaptation framework that improves smallholder farmers' resilience.



# Advance funding for climate-resilient agriculture in rural areas



## Rajat Shubhro Mukherjee

Advisor, Climate Change and Finance  
GIZ-CAFRI

- The CAFRI project initially attempted to link losses farmers grapple with in financial terms when faced with climate change. That focus has now shifted to coproducing information on climate risks and vulnerabilities with farming communities. This helps farmers communicate climate risks and discuss their loss and damage in financial terms.
- Instead of focusing on vulnerabilities, business plans help farmers think of how they can address risks and thrive despite increasing climate change risks. This requires analysis of system-level value-chain approaches and not just a focus on farmers alone.
- Farmers and agri-businesses must proactively adapt to changing risk scenarios to thrive under climate change. They can no longer afford to only search for public safety nets to cope with increasing impacts.
- Read MSC's blog [\*\*The impact of climate change on farmers in Bihar and how farmer producer organizations can help them adapt\*\*](#) to understand the prominent role FPOs could play to promote and help farmers adapt to climate change.



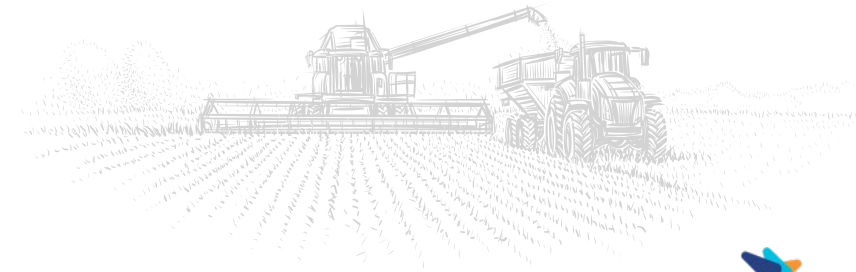
# Challenges and opportunities to increase the resilience of smallholder farmers across India



## Dr. R. B. Singandhupe

Consultant with TERI and Former Director, Central Institute of Cotton Research (CRI), Nagpur

- Innovative irrigation techniques could minimize water losses in irrigation. These techniques could include methods, such as drip irrigation, which the Government of Maharashtra #POCRA project implements.
- The POCRA project also promotes and scales up farming technologies to build the climate resilience of smallholder farmers.
- Cotton yields in the Maharashtra region have increased from 2-3 quintals to 11-12 quintals annually using irrigation systems instead of relying on rainfall.



# Way forward

- A wide range of institutions working with smallholder farmers needs to come together and operate at the value chain level and increase climate resilience.
- Barriers to commercial finance can reduce only if the financial institutions look beyond the immediate losses and focus on long-term gains.
- Smallholder farmers could receive more financial support if the government increases support and guarantees to commercial financiers to lend to smallholder farmers.



