



The Atlas is co-developed and co-owned by the Borlaug Institute for South Asia (BISA), Bangladesh Agricultural Research Council (BARC), Indian Council of Agricultural Research (ICAR), Nepal Agricultural Research Council (NARC), and Natural Resources Management Centre (NRMC), Sri Lanka.

It is financially supported by the Bill & Melinda Gates Foundation (BMGF) and technically supported by the University of Florida, Columbia University, and University of Washington.

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Bill & Melinda Gates Foundation (BMGF)

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About BISA

BISA is an international research institute established through a joint initiative between CIMMYT and ICAR, New Delhi, India, to implement the vision of the Nobel laureate Norman E. Borlaug. It aims to harness the latest genetic, digital, and resource management technologies and use research for development approaches to invigorate the region's agriculture and food systems to meet future demands.



Photos: ACASA-BISA

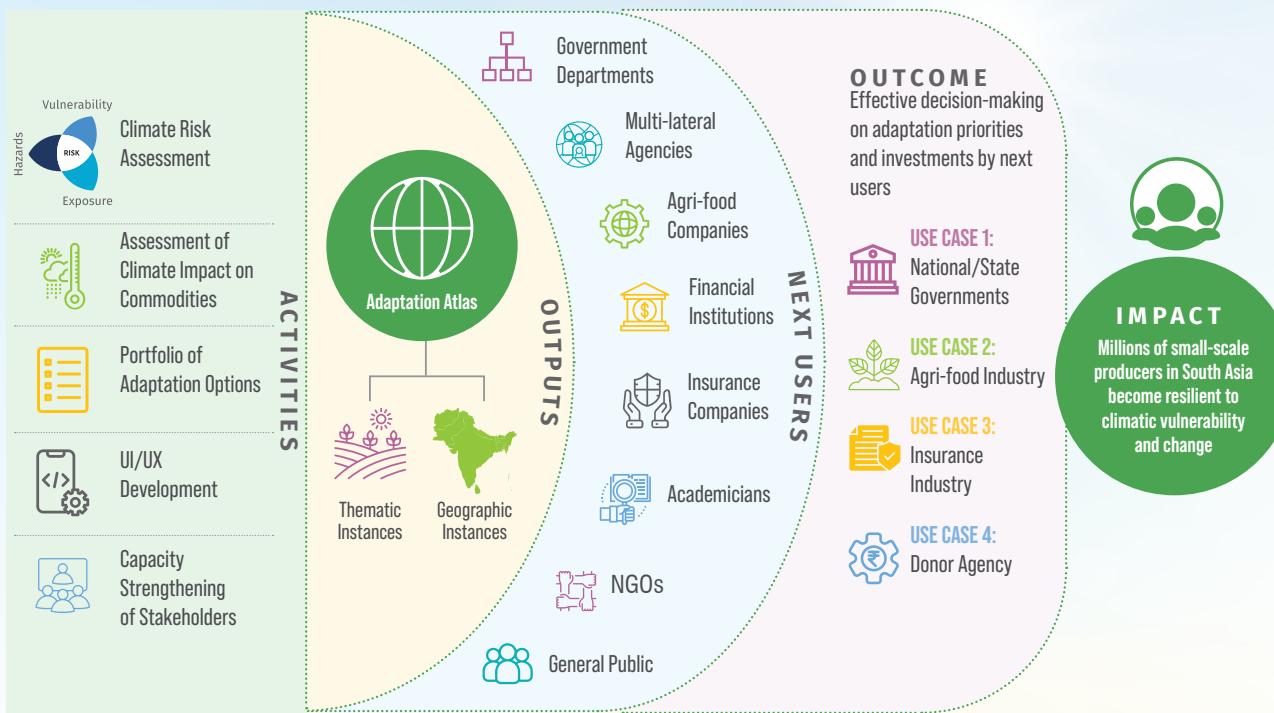
Atlas of Climate Adaptation in South Asian Agriculture (ACASA)

With climatic risks on rise, identifying spatial and temporal risks to agriculture becomes crucial.

To address this, the Borlaug Institute for South Asia (BISA), supported by the Bill & Melinda Gates Foundation (BMGF), is spearheading the development of the *Atlas of Climate Adaptation in South Asian Agriculture (ACASA)* in collaboration with the national agriculture research systems of the region.

This comprehensive tool consolidates spatially explicit data on climate hazards, assessing their impact on smallholder populations, farms, crops, and livestock enterprises. By evaluating the vulnerability of these populations, impact on region's critical commodities, and the evidence around the effectiveness of gender-informed adaptation options, ACASA empowers decision-makers with valuable insights through a comprehensive adaptation portfolio to guide strategic investments and policy formulations.

ACASA Approach



Commodities Considered by ACASA



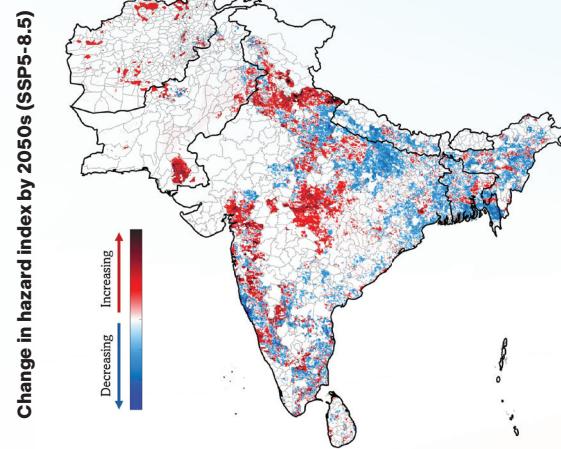
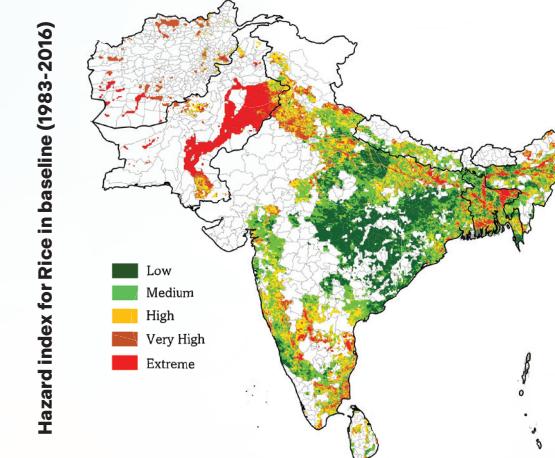
ACASA Use Cases



ACASA Workstreams

Climate Risk Assessment

Gridded climate hazard index is computed by characterizing commodity-specific climate hazards during different crop growth periods and aggregating them to develop a comprehensive hazard index. This index aggregates climate hazards specific to rice like high and low temperatures stress during anthesis which may lead to spikelet sterility, heat stress during the entire crop cycle, rainfall deficit, delayed monsoon, dry spell and flood. As an illustration, maps below show composite hazard index for rice in baseline and expected change in 2050s under Shared Socioeconomic Pathways (SSP) 5-8.5 climate change scenario.



Portfolio of Adaptation Options

A list of possible adaptation options has been identified based on a detailed literature review followed by expert consultations. A criteria for technical suitability has been developed to understand the potential of different adaptation options in reducing the impact of hazards on crop yields. These were carefully deliberated and studied based on several field studies and expert judgements in different South Asian countries. A cost-benefit analysis is planned to be conducted to understand the economic viability of technically suitable adaptation options. Finally, the implementation feasibility of economically viable options will be evaluated based on considerations of scalability. This work is in progress and will be available soon on the ACASA website. You may access the website through the following link to understand our approach and methodology better: <https://acasa-bisa.org/#/>

UI/UX Development

Integrating the visualization of key climatic hazards, risks, impacts, and adaptation options through an open-source, web-enabled, interactive, and dynamic Atlas. An early version of ACASA's interface for viewing risk and adaptation analytics is represented here.

At the core of realizing all key workstreams, ACASA is committed to strengthen the capacity of its partners to develop quality content and utilizing the Atlas for effective decisions on climate adaptation strategies.

