



# Climate Resilient Agriculture in South Asia:

## An analytical framework and insights from practice

Agriculture is one of the most climate vulnerable sectors of the economy. Agricultural production is highly sensitive to extreme events such as floods and drought, as well as long-term changes to rainfall and temperature that can lead to reduction in yields and shifts in cropping patterns. This is particularly problematic for South Asia given the high dependence of its population on agriculture as the primary source of livelihood.

The Action on Climate Today (ACT) programme, has been working in five South Asian countries to help increase the resilience of agricultural systems by deploying the 'Climate Resilient Agriculture' (CRA) approach. The CRA approach targets the full agricultural process from farm to market and ACT uses the following entry points to increase resilience:

- 1 – Policy and institutions
- 2 – Finance
- 3 – Information and knowledge management
- 4 – Technology and asset management

The ACT framework for mainstreaming adaptation to climate change within agricultural systems can be used to inform policy and practice in South Asia and around the world. It has been successfully deployed in Afghanistan, Bangladesh, India, Nepal and Pakistan.

A full description of ACT's work can be found in the associated ACT learning paper: Climate Resilient Agriculture in South Asia: An analytical framework and insights from practice.

Entry-Points	Agriculture Value Chain Phases				Non-farming options
	Pre-production	Production	Post-harvest	Market	
<b>Policy and Institutions</b> 	e.g. Climate-proof existing agriculture policies	e.g. Develop climate-proofed food security strategy	e.g. Develop food storage capacities	e.g. Encourage climate-resilient consumer food choices	e.g. Policies to encourage diversification of livelihoods and reduce dependence on agriculture
<b>Finance</b> 	e.g. Provide financial services to farmers for adaptation actions	e.g. Review water pricing policy	e.g. Develop financial instruments to reduce farmer risk at or after harvest	e.g. Develop contingencies for emergencies, such as famine	e.g. Establish non-farm income generating activities
<b>Information and knowledge management</b> 	e.g. Provide information on climate risks	e.g. Provide weather forecasting	e.g. Inform farmers of post-harvest value chain diversification options	e.g. Reduce food wastage	e.g. Provide information on non-farm strategies
<b>Technology and asset management</b> 	e.g. Identify risks to agricultural assets from climate change	e.g. Improve ecosystem health and buffering	e.g. Climate-proof agricultural post-harvest infrastructure	e.g. Establish harvest failure contingency systems	e.g. Establish contingency actions against climate extremes



ACT has undertaken Value Chain Analysis (VCA) of climate-resilient crops in India (Assam, Bihar, Maharashtra, Odisha), Pakistan and Bangladesh. ACT has used VCA to identify entry-points for enhancing climate resilience across agriculture value chain phases. In each location, a select number of climate-resilient crops in different agro-ecological zones are selected based on environmental and economic criteria as well as government priorities. ACT has worked with each government to use the VCA as a tool to adjust agricultural policy and implementation so that they support adaptation and enhance resilience. ACT is now working with the governments to execute the opportunities that the VCA has highlighted, for example, making financial instruments that may reduce weather-related risks available to vulnerable farmers in Odisha.

In Maharashtra, India, ACT completed a cost-benefit analysis of climate resilient agricultural options proposed in the State Action Plan on Climate Change. Options included promoting organic farming and market access for organic produce; improving access to climate services; and encouraging farmers to use accredited warehouses by offering credit-linked interest subsidies. The analysis included both direct and indirect benefits, including environmental and social benefits. For the most part, activities were shown to have benefits that outweighed cost. This in turn provides an empirical and sound argument for executing these resilience enhancing measures for the agricultural sector.





Across the Indian states of Odisha and Bihar, and in Bangladesh, ACT is working to systematically upgrade the state of knowledge and information on Climate Resilient Value Chain Analysis. Across these locations, ACT is currently collaborating with the agriculture departments, institutes and training centres to develop and deploy new training modules on climate resilient agriculture for both the agricultural department staff and farmers. ACT is also consolidating its insights on this topic across the region by building an open access, e-learning course on Climate Resilient Agriculture.

In Maharashtra, India, ACT has supported the development of a web-based tool and mobile app that can be used for planning climate sensitive forestry. The tool will indicate which tree species are suited to specific agro-ecological areas, taking climate change-induced risks and opportunities into account. It will aid government and non-government stakeholders in making evidence-based, climate-sensitive planning decisions for forestry programmes that have positive knock-on impacts on agriculture.



# Key Lessons from ACT's Experience:

**Climate resilient agriculture is not business as usual.** CRA is specially aimed at enhancing the resilience of agriculture systems and the people that depend on them. CRA activities must demonstrate the manner in which they are reducing vulnerability to climate change by addressing exposure or sensitivity to climate shocks and stressors or increasing the adaptive capacity of target beneficiaries.

**Stakeholder engagement is central to the CRA process.** ACT's work involves multiple government departments and other stakeholders from the private sector, civil society, universities and farmers. Delivering CRA systemically is complex and therefore, the participation of groups with diverse skills, perspectives and interests is vital.

**CRA is not simply a technical issue.** Navigating complex issues of politics and power dynamics is important to enhancing the resilience of agricultural practice. Most agricultural interventions aim to improve management of natural resources (water, soil, vegetation), which can be very contentious in an over-populated and resource scarce environment such as South Asia. Therefore, all of ACT's initiatives start with detailed context assessments and in-depth political economy analysis, to map the potential for such political pitfalls.

**Integrating initiatives with government priorities is important for sustainable and institutionalised CRA.** Governments have significant influence over agricultural practices, for example through subsidies, land-use rules, and production support programmes. In South Asian countries, agricultural policy and extension support is governed by complex configurations of local, subnational and national governments. The implementation of government policies, programmes and rules is often inadequate. To be sustainable, it is therefore vital that CRA is operationalised in a way that integrates and strengthens government systems.

**CRA must be scaled up across South Asia.** South Asia will face increased warming, increased extreme temperatures (including heat waves), increased incidences of extreme precipitation and sea level rise as a result of climate change. This in turn carries the potential for social unrest, economic downturn and political upheaval for social unrest, economic downturn, political upheaval and threats to local and national food security. Therefore, there is an urgent need to scale up climate resilient agriculture across South Asia. ACT's framework provides a range of practical entry-points that can operationalise and scale-up CRA across the region.

***These and other lessons from the ACT programme are elaborated in the ACT learning paper: Climate Resilient Agriculture in South Asia: An analytical framework and insights from practice.***

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