

Institutional Change and Adaptation to Climate Change



Agricultural extension system has been slow to adapt and communicate climate science to farmers, as there is still limited institutional priority accorded in processing and communicating the scientific knowledge, opines Dr Hemant R Ojha.

Adapting agriculture to climate change has now become a matter of widespread concern among scientific community and policy actors in South Asia. Recent studies have documented various aspects of climate change impacts on agro-ecological and hydrological systems and how it will impact the wider socio-economic system. Along with the growing number of analysis of the meteorological data, farmers' perceptions of climate related risks and their responses are also being documented. However, there is still little knowledge on how the key actors in agricultural systems - the farmers, service providers and regulators - perceive, learn and respond to diverse impacts of climatic change and variability on agro-ecological systems.



Southasia Institute of Advanced Studies (SIAS), Nepal and its India (Centre for Research on Innovation and Science Policy) and Bangladesh (Flood Hazard Research Centre) based partners collaborated with the CGIAR program on Climate Change, Agriculture and Food Security (CCAFS) to study what innovations and challenges exist in the Indo-Gangetic Plains (IGP). We collected evidence from 15 sites in Nepal, India and Bangladesh. One of the questions we looked at was - how and to what extent the different stakeholders (both state and non-state), are helping farmers to adapt to climate risks. The study blended qualitative and quantitative methods – combining case studies with survey research methods. A range of qualitative tools were used, including focus group, key informant survey, interactive field observation, semi-structured interviews and others.

Findings

The study confirms that farmers in the IGP have experienced diverse forms of climatic change in the recent years. This increasing exposure to climate risk is also supported by available scientific evidence. This study identifies diverse adaptive and innovative responses to such climatic shocks that have emerged at individual farms and community levels.

Climate Adaptive Innovation Threads

When farmers have access to services and information, they have resorted to more climate adaptive and innovative practices – such as changing cropping patterns, containing climate induced risks, improving common lands management, and adopting technological options that have become available in the recent years. We have identified 10 different types of what we called *adaptive innovation threads* - involving creative responses to risks as well as opportunities in the changing socio-economic context of South Asia.



While farmers, local communities and locally based NGOs are catalyzing a wide range of adaptive innovations, more established agricultural institutions are yet to be ready to learn from these innovative practices, much less scale up through needed institutional and policy change. On the contrary, farmers' ability to engage in innovative practice is substantially shaped and determined by the stakeholders operating at local and meso levels, whose efforts are in turn affected by state governments and national policy. It is therefore important to see farmer innovation capacity in relation to wider institutional capacity in agricultural system to generate and translate scientific information, offer institutional and technological development advice, and broker resilient change at across multiple scales.

Communicating climate science

Strong gaps exist between predicted level of climate change and the actual adaptive actions among both the farmers and other locally based agriculture stakeholders, suggesting the deficit of processes and institutions to facilitate adaptive innovations. By and large, climate science data still remains within the research institutions, not readily accessible to agricultural actors. Agricultural extension system, which is largely within government, is also slow to adapt and communicate climate science to farmers, as there is still limited institutional priority accorded in processing and communicating the scientific knowledge.



In particular, this study shows that the role of NGOs, local governments, agricultural extension and communication agencies, technology service providers are all important, whose capacity is in turn contingent upon the assistance of international organizations, research agencies, government subsidies and funding, and overall policy environment at state and national levels. Despite information revolution and universal acceptance of participatory strategy in management and policy, channels of communication and interactions between farmers and these agencies are weak, often top-down, driven by an orientation to upward accountability, and having scale bias (with a tendency to plan and act at higher scales than farmers would meaningfully benefit). As farmers are the ones who experience the effect of climate change before other service delivery organizations, it is crucial for other stakeholders to be more democratic and interactive with farmers while formulating strategies for adaptation at district and sub-national levels.

Need for institutional change

The dominant narrative of adaptation emerging within the discourse of climate policy appears to 'target' farmers, but fails to appreciate the crucial need to adapt institutions at higher scales of agricultural governance. There is now an urgent need to transform agricultural institutions, not only because farmers' capacity to adapt is determined by the responsive and accountable regulatory and service providing institutions, but also because it is through these institutions that the short term and farm level adaptation actions of farmers could be integrated with the large scale agricultural landscape management and adaptation. The current adaptation narrative has a tendency to leave the burden of innovation to farmers, while overlooking the massive restructuring needs of external institutions, including extension. This is also related to a question of how farmers' contributions of environmental and public goods – in terms of enhancing food security, soil conservation, agro-biodiversity management - are compensated in a fairer way.

Conclusions

Given the uncertainty around the future effects of climate change on agriculture, compounded by fluctuating market trends of agricultural commodities, questions persist as to how agricultural actors will be able to integrate 'a comprehensive and dynamic policy approach, covering a range of scales and issues, from individual farmer awareness to the establishment of more efficient markets. The evidence from South Asia now clearly shows that the 'unfinished' agenda of green revolution has now met with a new imperative of adaptation.



In order to consider such issues in adaptation planning and policy process, we need to consider 'adaptive innovation' thinking, integrating both adaptation and innovation in a single work package. This view can offer a new conceptual tool to understand how agricultural system can adapt to climate risks on the one hand, and improve production and equitable benefit sharing, on the other. The adaptive innovation thinking also needs to recognize cross-scale and inter-sectoral processes of extension, learning and communication.

Both adaptation and innovation happen in particular institutional context, and therefore it is now time to think more fundamentally about how institutional structures change and become part of adaptive innovation dynamics. Those who aim to catalyze adaptive innovation must identify and act upon actionable opportunities for reshaping institutional boundaries and nurturing innovative agency for climate-smart agriculture in the developing countries.

Reference

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