

Extension and Advisory Services in Scaling up Climate Smart Agriculture in South Asia

CONTEXT

Mounting evidence points to the fact that climate change is already affecting agriculture and food security, which will therefore make the challenge of ending hunger, achieving food security, improving nutrition, and promoting sustainable agriculture even more difficult (FAO 2016). Through Sustainable Development Goal (SDG) 13, the 2030 Agenda calls for strengthened resilience and adaptive capacity in response to natural hazards and climate-related disasters globally. It calls on all countries to establish and operationalize an integrated strategy – one that includes food security and nutrition – to improve their ability to adapt to the adverse impacts of climate change, and to foster climate resilience and lower greenhouse gas (GHG) emissions without jeopardizing food production (FAO et al. 2018).

World Bank (2018) noted that almost half the South Asian population (800 million to be exact) are at risk of seeing their standards of living and incomes decline as rising temperatures and more erratic rainfall will reduce crop yields, make water scarce, and push more people away from their homes to seek safer places. Productivity decline leading to food supply shortfalls and increase in food prices would directly affect millions of low-income smallholder farmers, especially those who depend on agriculture for their livelihood and income in South Asia.

In principle, Climate Smart Agriculture (Box 1) may help achieve higher production with reduced emissions. This would have been the simple answer to climate change impacts on agriculture, if the issues were simple. But they rarely are. For instance, smallholder farmers of South Asia, who are already facing a plethora of climatic and non-climatic stresses, have limited capacity to adopt new technologies due to limited access to natural resources, information, and finance.

Overcoming these barriers requires institutional and policy support (Pal et al. 2018). Extension and Advisory

Box 1: Climate Smart Agriculture (CSA)

Climate Smart Agriculture (CSA) is an approach that integrates climate change into planning and development of sustainable agricultural systems. The Food and Agricultural Organization of the United Nations (FAO 2013) defines CSA as “agriculture that sustainably increases productivity, enhances resilience (adaptation), reduces/removes GHGs (mitigation) where possible, and enhances achievement of national food security and development goals”. CSA is not a one-size-fits-all set of practices to be adopted by every farmer. In each location, its form needs to be defined by the context (i.e., extent of vulnerability to climate change, varying community risk profiles, availability of resources, and livelihood options). It can be applied on a single farm or over entire landscapes, and it often needs involvement of diverse agricultural stakeholders and coordination across different agricultural sectors, as well as other related sectors, such as energy and water. Enhancing the capacity of farmers to manage risk and adopt effective climate change adaptation and mitigation strategies therefore needs special attention. The implementation of CSA innovations calls for the design of appropriate solutions adapted to the technical, institutional, and policy-related needs of the stakeholders involved.

Services (EAS)¹ need to support farmers in addressing some of these concerns, but their capacities need to be significantly enhanced to play these roles. This brief discusses some of these issues and draws significantly on the South Asia Policy Dialogue organised jointly by Agricultural Extension in South Asia (AES), IRRI South Asia Regional Centre (ISARC), the Centre for Research on Innovation and Science Policy (CRISP) and the Sri Lanka Network of Agricultural Extension and Advisory Services (NAEASSL) at Colombo, Sri Lanka, on 5 October 2018. Several policy makers, donors, and key extension professionals engaged in promotion of climate smart agriculture in South Asian countries participated in this dialogue.

Role of Extension and Advisory Services (EAS) in scaling up CSA

Farmers need support to understand the impacts of climate change and adopt CSA practices. This would involve changes in the behaviour, strategies, and agricultural practices of millions of farmers worldwide. Extension and Advisory Services (EAS) have a crucial role to play in linking farmers with sources of new information and tools so that they can transition to CSA practices (Simpson and Burpee 2014). Moreover, only EAS have an explicit focus on supporting such change among rural communities.

EAS personnel, especially those working at the field level, usually have a comprehensive understanding of the local vulnerability context, as well as knowledge of local support and service networks. Farmers are often more receptive to their advice, as they have long been supporting farmers with information on new and improved technologies and practices. In many countries, EAS personnel have also been supporting the mobilisation of farmers' groups to collectively deal with natural resource management and marketing challenges.

FAO (2016) noted that while EAS have been contributing significantly to enhancing food security through their advice on improved technologies, they have so far not been very successful in promoting CSA, which demands a strategy that captures the synergies and manages trade-offs among food security, adaptation and mitigation.

Lack of adequate capacities to promote CSA at different levels have been identified as one of the major weaknesses of EAS which constrain it from supporting up-scaling CSA. Apart from these, there are several institutional and policy bottlenecks in the wider enabling environment that are also limiting EAS from playing a significant role in promoting CSA.

The policy dialogue discussed how EAS is supporting the scaling up of CSA in four South Asian countries, the challenges it faces in promoting CSA, and how the role of EAS in scaling up CSA could be enhanced. The major issues that emerged are presented here.

EAS in CSA scaling up in South Asia

Though the public sector dominates EAS provision in South Asia, the private sector and the non government organizations (NGOs) are playing an increasing role in supporting farmers with new knowledge and information related to CSA. EAS have been promoting technologies,

such as stress tolerant varieties, conservation agriculture, rainwater harvesting methods, including construction of farm ponds, and water efficient irrigation systems such as drip irrigation mechanisms. It has also been providing weather advisory services to farmers to help them adapt better to climate change. Through promotion of integrated pest management, organic farming practices, conservation agriculture, crop rotation, agro-forestry, etc., EAS has also been contributing to climate change mitigation. Mechanisms, such as climate field schools and seed banks, have been piloted and there have been efforts to mobilise farmers for collective action to better deal with climate risks. Increasingly, remote sensing and weather insurance are also being used to deal with climate risks. Wherever these approaches are promoted, there has been positive impact. However, EAS in South Asian countries face several challenges in scaling up these efforts and these are discussed below.

Lack of adequate research support

This has three dimensions. Firstly, there is little documentation of successful and cost-effective CSA technologies. Secondly, adaptive research support that can help improve the understanding of EAS on what works, where, and why in different agro-ecologies and farming systems is limited. Thirdly, lack of adequate and systematic evaluation of CSA practices in farmer fields in diverse locations/contexts is also constraining promotion by EAS and adoption of these practices by farmers.

Most of the research on CSA focuses on crops and less on livestock and fisheries. There is also little extension research in this area and practically no guidance is available on the type of approaches (demonstrations, trainings, climate field schools, ICTs, use of master trainers, para extension workers) that are effective in addressing the different components of CSA.

Lack of capacities to scale up CSA

There are significant capacity gaps within EAS at several levels. These are as follows:

Capacity gaps among field level functionaries: This mainly arises from lack of sufficient understanding of CSA mainly due to lack of exposure to associated technologies and practices. Many EAS functionaries at the field level lack capacities critical for community adaptation to climate change, such as capacities for mobilising farmers into groups, mediate conflicts, or organise climate field schools.

Capacity gaps among middle and senior level

functionaries: Successful scaling up of CSA involves collaboration and knowledge flows among several agencies and this demands significant capacities for coordination among middle and senior level functionaries. Senior managers in EAS should have knowledge and expertise to write project proposals for mobilising resources from climate funds and private sector, including Corporate Social Responsibility (CSR) funds.

Capacity gaps at the organisational and enabling

environment levels: The existing mechanisms for capacity development are not supporting development of these capacities partly due to lack of awareness on how EAS could support scaling up of CSA. Paucity of adequately trained trainers and lack of training manuals on CSA appropriate to different levels of staff are other major constraints. There are no mechanisms for continuous capacity up-gradation of EAS personnel. Funds specifically ear-marked for capacity development in the area of CSA is also needed to enable EAS to perform this role.

Lack of a learning platform

Lack of a virtual learning platform for EAS to share technologies, experiences, and learning relevant to EAS is also constraining capacity development of EAS in South Asia. Donor representatives also highlighted the need for a learning platform comprising different stakeholders as currently there is very little sharing among donors and different agencies in the same country on CSA interventions, and also among different countries in the region. Donors are keen to learn about good practices in incorporating projections on future impacts of climate change in today's investment planning for sustainable agricultural development.

Need for regional cooperation to scale up CSA

There are very few examples of regional agreements and sharing of knowledge across South Asia in addressing these issues. One example is the agreement signed among Bangladesh, India, and Nepal with IRRI aimed at harmonization of seed systems, and policies that allowed reciprocal recognition of varieties released in neighbouring countries, notable among them being stress tolerant varieties. There is a demand to extend these types of arrangements that facilitate exchange of knowledge and sharing of technologies related to pest management as well as regional cooperation for capacity development of EAS.

WAY FORWARD

The over-arching issue identified at the policy dialogue was the need for strengthening capacities of EAS at all levels for promoting CSA. The suggested steps in this direction are as follows:

Enhance knowledge and skills related to promotion of CSA among

- **Field level functionaries:** Strengthen staff training on technical aspects of CSA and functional aspects related to CSA promotion;
- **Middle and senior management level functionaries:** Train staff on development of strategic collaboration frameworks for promoting joint planning and implementation of CSA, climate financing, policy advocacy for strengthening investments and capacities in EAS, inter-agency coordination, and establishment of learning events on CSA promotion;
- **Trainers:** Enhance their capacities to develop training modules and development of master trainers on CSA aspects;
- **Researchers:** Facilitate their involvement in action research so that they can play a more prominent role in disseminating CSA.

Strengthen organisational capacities to support CSA

Strengthen knowledge management through development of a database on CSA practices and experiences/good practices deriving from CSA promotion, and organise events for experience sharing and learning.

Enhance capacities at the regional level for joint action on

- Setting up a regional level learning forum on EAS in support of CSA;
- Organizing regional level exchange of information and experiences on CSA promotion and establishing regional agreements to share technologies across the region;
- Organize training of senior EAS managers and trainers on aspects of climate financing and develop online courses to strengthen EAS capacities on CSA;

- South Asian Regional centres/networks such as ISARC (IRRI South Asia Regional Centre, Varanasi, India), SAC (SAARC Agricultural Centre, Dhaka, Bangladesh), and

AESA (Agricultural Extension in South Asia) should play a major role in strengthening the capacities of EAS at the regional level.

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¹ Extension and Advisory Services (also called Rural Advisory Services) collectively comprise several types of providers from the public, private, NGO, and producer organisations, known by different names - namely extension agents, community knowledge workers, agronomists, facilitators, advisors, promoters, knowledge intermediaries, programme managers, etc. –provide a range of services and support to rural communities including technical, organisational, entrepreneurial, and managerial support.

AUTHORS

Rasheed Sulaiman V¹, Onima VT², Nimisha Mittal³, Ranjitha Puskur⁴ and Nafees Meah⁵

¹ Rasheed Sulaiman V is Director, Centre for Research on Innovation and Science Policy (CRISP), Hyderabad, India. (<http://crispindia.org/>).

² Onima VT is Research Officer, CRISP, Hyderabad, India.

³ Nimisha Mittal is Lead Researcher, CRISP, Hyderabad, India.

⁴ Ranjitha Puskur is Theme Leader - Catalysing Innovation for Health, Equity and Resilience, Sustainable Impact Platform, International Rice Research Institute (www.irri.org).

⁵ Nafees Meah is IRRI Regional Representative-South Asia (www.irri.org).

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