

Fostering local adaptation platforms for agriculture: How context specific climate-smart villages (CSVs) can relate to local adaptation efforts

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Climate Resilience in Agriculture: How context-specific climate-smart villages (CSVs) could help

Climate change is expected to adversely affect lives, livelihoods, nutrition, and food security in the future. If we start NOW, we can do a lot to reduce the impacts of climate change, build resilience in our food systems, ensure food safety, reduce risks and vulnerabilities of farming communities, and protect agriculture and smallholder farmers.

Adaptation is often considered a high priority and a primary consideration for policy makers and planners because of the current and projected impacts of climate change on agriculture and natural resources. Communities that lack the capacity to respond to climate variability are at great risk. The impacts of climate change on agriculture include the loss of agrobiodiversity, soil degradation, reduction in crop, fish, and livestock productivity, water shortages, reduction of nutritional quality of foods, and possible increases in destructive pests and diseases. With a large population reliant on farming, it is important to find ways of building resilience to climate change.

Adapting to climate change requires adjusting agricultural practices to meet changing and more difficult environmental conditions. Traditional and newly introduced practices can help farmers cope with current variability and future climate risks. Climate-Smart Agriculture (CSA)/Climate Resilient Agriculture (CRA) is one way of helping farmers prepare for the future.

Climate change affects different communities in different ways. Adaptation efforts must therefore be localized and context-specific. Various studies have already shown that smallholder farmers are most vulnerable to adverse impacts of climate change. Interventions that support them in building their resilience are not only necessary but urgent.

Building the resilience of smallholder farming and fishing communities requires interventions that provide them greater access to a portfolio of technologies, information, support services, market linkage, and finance/credit. These would enable them to adjust, modify, or change their current production systems and practices in an environmentally friendly way. This process is community-based adaptation.

Climate smart villages (CSV) are platforms that nurture adaptation efforts and build local adaptation capacities. CSVs are geographic locations where action

research is undertaken to learn how to adapt to climate change while reducing green house gas emission from agriculture. CSVs promote low emission development options and serve as focal point for developing such solutions. CSV serve as lighthouses for learning, providing an evidence base for similar location and context-specific adaptation efforts. Local and National Adaptation Planning efforts can benefit from such efforts.

To ensure lasting results, it is not enough to limit our work that address climate change impact on agriculture. We also need to address poverty and reduce climate vulnerabilities through the use of multiple benefit approaches (e.g. diversified farms, alternative livelihoods, and micro enterprises).

CSVs as platforms for climate-resilient agriculture technologies and practices

CSA/CRA refers to environment friendly and sustainable agricultural practices that takes climate change and variability into consideration. Scaling-out CSA/CRA involves building adaptive models that provide practical guidance and serve as focal points for communities, organizations, and governments in the local level. CSA/CRA considerations should be included in local government plans. Projects must demonstrate impact and uptake at scale if local governments are to take notice. The new interest and investments are our best opportunity to deliver on our promises to end hunger, reduce poverty, and achieve the sustainable development goals.

The key objectives of CSA/CRA include:

- Increase agriculture productivity and income in a sustainable, environmentally sound manner;
- Build the capacity of households and food systems to adapt to climate change;
- Ensure food safety and security while protecting lives and livelihoods; and
- Promote low emission development (reduced green house gas emission and enhanced carbon capture).

Examples of key CRA interventions

Climate-Smart Village/Farm					
Weather Smart	Water and Soil Smart	Carbon Smart	Nutrient & Pest Smart	Energy Smart	Knowledge Smart
<ul style="list-style-type: none"> • Seasonal weather forecast • Information and Communications Technology (ICT)-based agro-advisories • Climate analogues 	<ul style="list-style-type: none"> • Aquifer recharge • Rainwater harvesting farm ponds • Community management of water • On-farm water Management • Natural vegetative strips • Residue management 	<ul style="list-style-type: none"> • Agroforestry enhancement • Conservation tillage • Land use systems • Livestock management • Reintroduction of native breeds of livestock under better feeding regimes • Alternate wetting and drying • Multi-storied cropping 	<ul style="list-style-type: none"> • Site-specific nutrient management • Precision fertilizers • Catch cropping/ legumes • Biodiverse farms • Intra species and inter species diversity 	<ul style="list-style-type: none"> • Biofuels • Fuel efficient engines • Residue management/ biochar • Minimum tillage • Boundary planting of multi-purpose trees 	<ul style="list-style-type: none"> • Farmer-to-farmer learning • Farmer networks on adaptation technologies • Seed and fodder banks • Market info • Off-farm risk management kitchen garden • Learning groups

Source: Adapted from CCAFS SEA brochure

How local adaptation platforms such as CSVs can contribute to National Adaptation Plans in Agriculture

The objectives of any country's National Adaptation Plan are to reduce the impacts of climate change by building adaptive capacities and to facilitate the integration of climate change adaptation in a coherent manner into relevant policies and programmes and activities (UNFCCC, 2012). Climate change can lead to a loss of assets, result in reduced income flows, and affect livelihoods and food security. There is a need for no regrets climate adaptation work (promoting climate resilience in agriculture in order to build capacities to cope with climate impacts even if the worst fears do not materialize). There are risks in promoting measures that deliver on short term gains,

but which compromise the coping capacities of communities (in the long run).

This can be referred to as mal-adaptation. National Adaptation Plans reduce vulnerability to climate change, help build capacities, and promote resilience. At local levels, CSVs (or other local adaptation platforms) can help serve as crucible for testing and developing solutions relevant to National Adaptation Plans. They facilitate climate change adaptation into local programs and plans. Climate change adaptation process and approaches are developed in these community-based platforms.

Building adaptation capacities to continue to cope

To design effective Community-Based Adaptation (CBA) efforts, we have to first understand and assess the local risks and vulnerabilities of communities. Focus group discussions, key informant panels, surveys, and the study of secondary data are important methods. Vulnerability assessments help to better understand location and context-specific climate change impacts, which enables stakeholders to properly identify options for addressing it.

CBA is a process of resilience building that is grounded on location and context-specific vulnerabilities. The goal of CBA is to build resilience in a bottom up manner. This is why community-based participatory action research is essential for deriving effective

solutions. Finding solutions that work locally involve a process of participatory technology development (action research and learning). Farming and fishing communities identify, plan, design, field test, and learn about the effectiveness and scalability of a portfolio of options for addressing specific risks and vulnerabilities.

Building resilient smallholder farms and communities entails understanding the complexities that contribute to vulnerabilities and risks; and developing multiple scales and levels of strategies that all contribute to addressing the multi-dimensional challenges of food, nutrition and livelihood insecurities.

CSVs: focal points for adaptive research at local level

Individual action is not enough to cope with climate change. CSVs provide venues where different stakeholders collectively participate in the program/project planning and implementation. Here, they can generate practical adaptation and mitigation options to improve their food security, nutrition, and climate resilience. Concerted actions in the CSVs operate at the community level and its surrounding landscape.

CSVs are primarily focal points for deriving or/and testing location-specific adaptation options in agriculture, livestock, aquaculture, and in allied natural resource management sectors (agroforestry, agrobiodiversity, community forestry, etc). Multiple CSV sites represent different agroecologies, climate risks, etc. This diversity in context is useful for comparison, extrapolation, climate analogue research, etc. CSVs

help develop solutions to anticipated future impacts of climate change. No regret options are developed in anticipation of climate change.

The CSV approach is a collaborative effort designed to test and identify appropriate interventions, innovations, and policies which are not only technically appropriate but also gender- and socially-sensitive. In CSVs, rural communities partner with local governments, national programs, and international research and development organizations to develop villages as models for local research and development. They provide platforms for multi-stakeholder participation and collaborative work in targeted, clearly delineated geographic areas (“territories” or “small landscapes”).

CSVs are “lighthouses” where communities strengthen existing farming systems and enrich them with CSA practices and technologies. Climate resilience thinking is already noted in communities as demonstrated by farmers. The approach rides and builds on current systems, enhancing diversification, nutrient cycling, food safety, and market linkages.

CSVs feature incremental development and adaptation approaches

Collective action on a wider scale is usually necessary for successful local adaptation programs (e.g., no burning of rice straw campaign, watershed rehabilitation, etc.). The interface between forestry and agriculture is blurred in such approaches requiring multidisciplinary and convergence approaches. Groups processes are involved. Learning methods recognize that farmers and local communities have limited time for a series of structured courses. Instead, experiential learning and sharing is featured. With a deepening engagement, more sophisticated methods of learning might be considered.

CSVs at local levels (villages and municipalities) are ideal locations for harmonising and converging agricultural and natural resource management and governance inputs. Using participatory land use planning approaches, communities can be assisted to develop local adaptation plans to address climate-related risk.

CSVs are unique in that they provide space for the

CSVs consider not only the farms but the landscapes as well

CSA/CRA is usually best undertaken across landscapes because ecosystems are interconnected. By conserving and improving forest and water resources, nutrient flows to farms on lower slopes are likewise enhanced. Landscapes are useful organizing frameworks for operationalizing climate-smart/resilient agriculture on the ground. Landscape approaches help us better understand the multi-functionality of agriculture and links to forests, water, and other natural resources. Climate, Environment, and Ecosystem elements interact with farms and local communities in a small landscape or micro-watershed setting. These natural resource boundaries are important because of the ecosystem influences on climate adaptation and resilience building objectives of a CSVs.

testing of shortlisted options (derived from on-station research, local indigenous and technical knowledge, etc.). This eventually leads to the prioritization of best options for particular geographic areas. CSVs also help generate methodological innovations.

Though CSVs are focal points for action research (or lighthouses for learning and sharing), they should not remain as islands of innovations. Wider adoption of innovations needs to be ensured. They should “not [be] a showcase but a pattern”. The integrity of the CSV as a unit for action research should not be compromised. Otherwise, its emphasis on generating local evidence is lost. It is important for the CSV proponent to clarify the role and purpose of doing CSVs and specify their intended scope and scale of application. The question of scale must be understood in the context of what is driving the need for a CSV.

Conclusion

Local adaptation platforms help empower sub-national and local government players, civil society organizations, and public-private partnerships in demonstrating the validity of agro-ecology-specific solutions to current and future climate change impacts. Such adaptation platforms are invariably diverse in their portfolio addressing multiple needs and purposes. Development-oriented CSVs feature scaling, social inclusiveness, and sustainability.

CSVs serve as centers for discovery, adaptation, learning, and sharing. They serve as basis for documentation and field level advocacy. Adaptation research, which is a basic element of a CSV, helps build and nurture local capacities at different levels. Local communities of practice are encouraged to continue to innovate, experiment, and adapt (incrementally or step by step). Communities that have had a successful community-level adaptation management experience are likely to adapt better to future changes. In a CSV, we ultimately need to ask ourselves whose needs are being addressed. Achieving outcomes such as reduced poverty, enhanced resilience, improved livelihoods, and better nutrition should be the primary considerations. After all, CSVs are not about doing business as usual! CSVs feature ways of achieving both scale and sustainability in a socially inclusive manner.

Reference:

UNFCCC. (2012). National Adaptation Plans. Technical guidelines for the national adaptation plan process. Least Developed Countries Expert Group. UNFCCC Secretariat. Bonn. Germany (available at www4.unfccc.int/nap/Guidelines/Pages/Technical-guidelines.aspx).



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