CLIMATE RESILIENCE IN AGRICULTURE

Key concepts for community-based adaptation

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The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), led by the International Center for Tropical Agriculture (CIAT), brings together the world's best researchers in agricultural science, development research, climate science and Earth System Science, to identify and address the most important interactions, synergies and tradeoffs between climate change, agriculture and food security.

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Climate change is expected to adversely affect lives, livelihoods, nutrition and food security in the future. However, if we start NOW, we can:

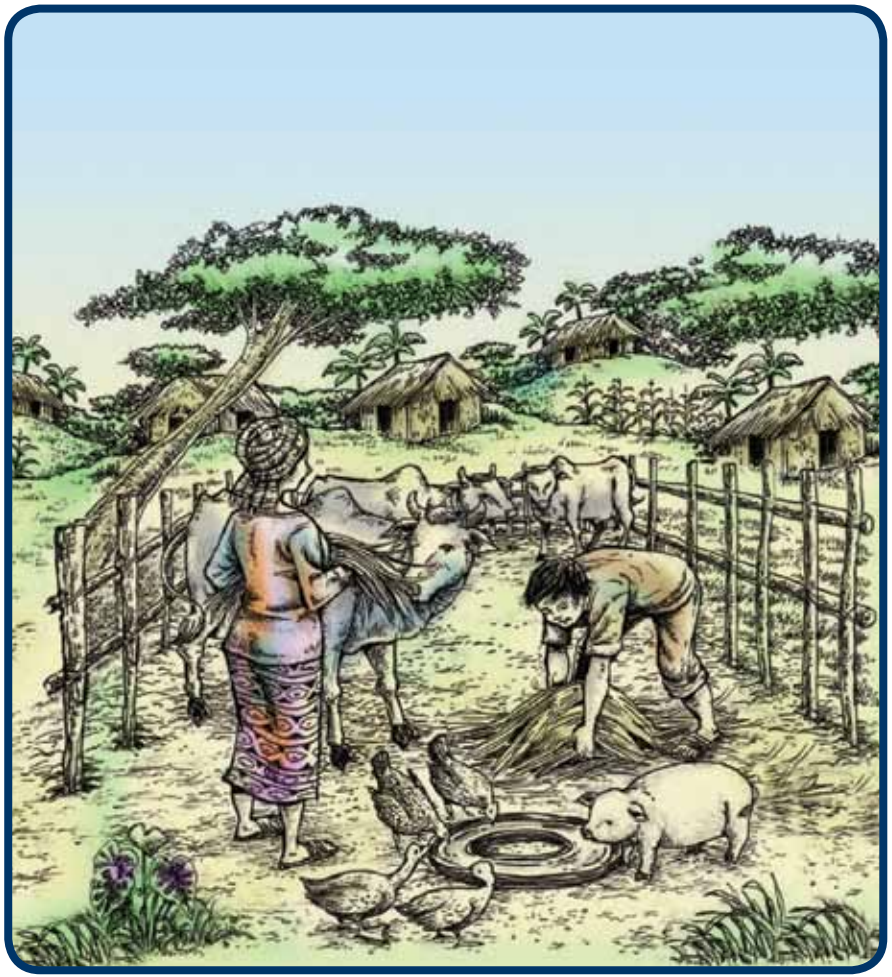
- do a lot to reduce the impacts of climate change;
- build resilience in our food systems; and
- reduce risks and vulnerabilities of farming communities.

The impacts of climate change on agriculture include the loss of agro-biodiversity, soil degradation, reduction in crop, fish and livestock productivity, water shortages and possible increases in destructive pests and diseases. With a large population reliant on farming, it is important to already discover ways to build 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 both current climate variability and future climate scenarios.

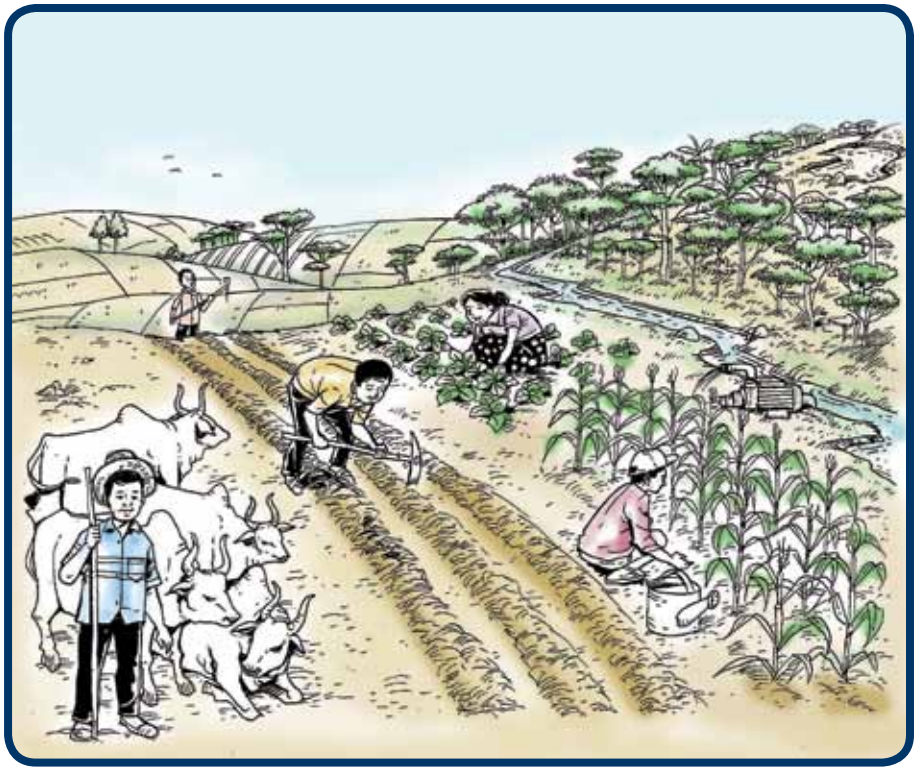
Climate Smart Agriculture (CSA) / Climate Resilient Agriculture (CRA) can help farmers prepare for the future.



CSA/CRA refers to environment friendly and sustainable agricultural practices that takes climate change and variability into consideration.

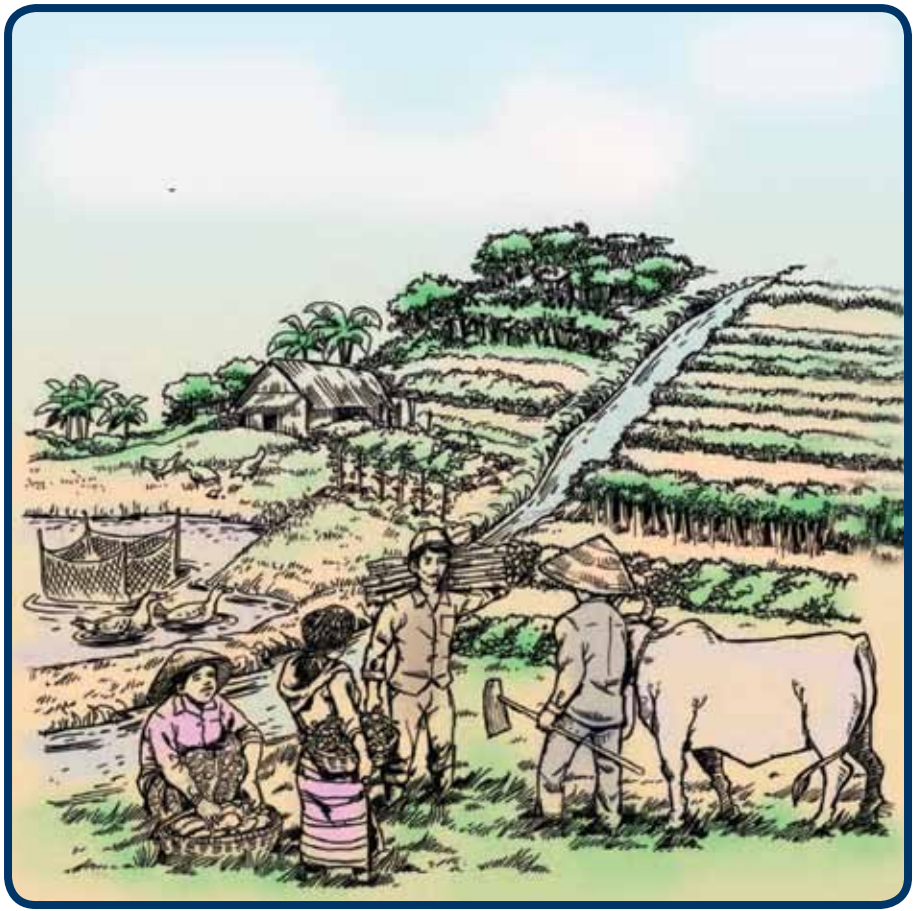
Key objectives of CSA/CRA:

- Increase agriculture productivity and income in a sustainable, environmentally sound manner.
- Build the capacity of households and food systems to adapt to climate change.
- Reduce GHG emissions and increase carbon sequestration.



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.

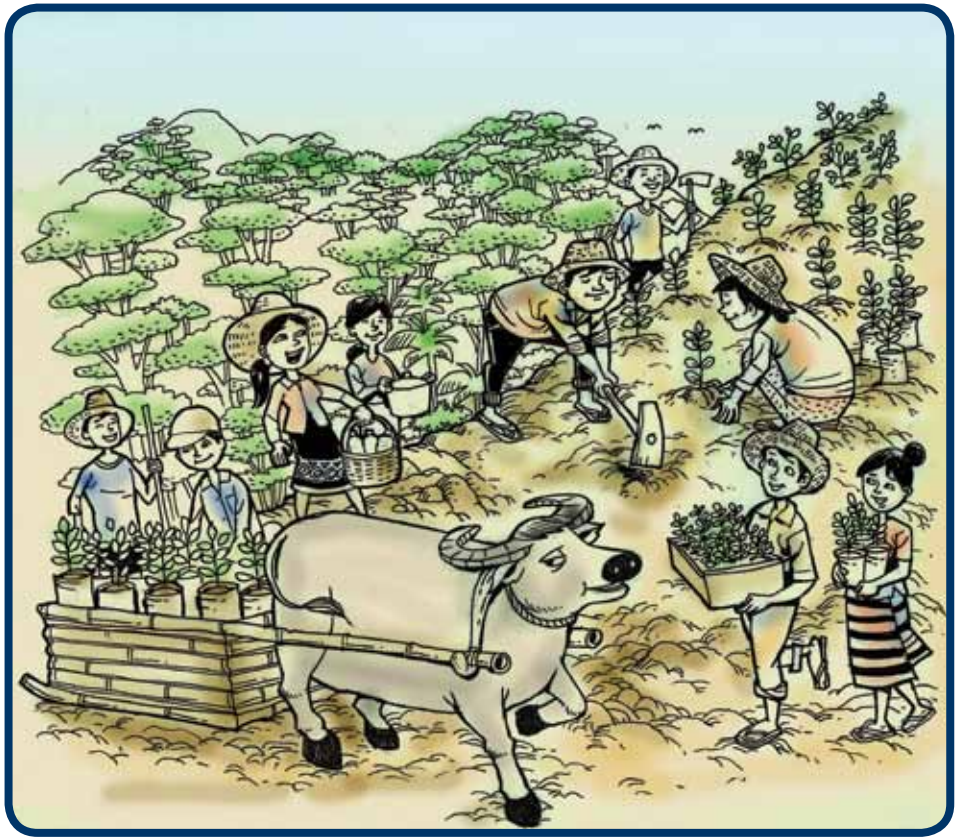
Landscapes are useful organizing frameworks for operationalizing climate smart/resilient agriculture on the ground. Landscape approaches help us better understand the multi-functionality of agriculture and links to forests, water and other natural resources.



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

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

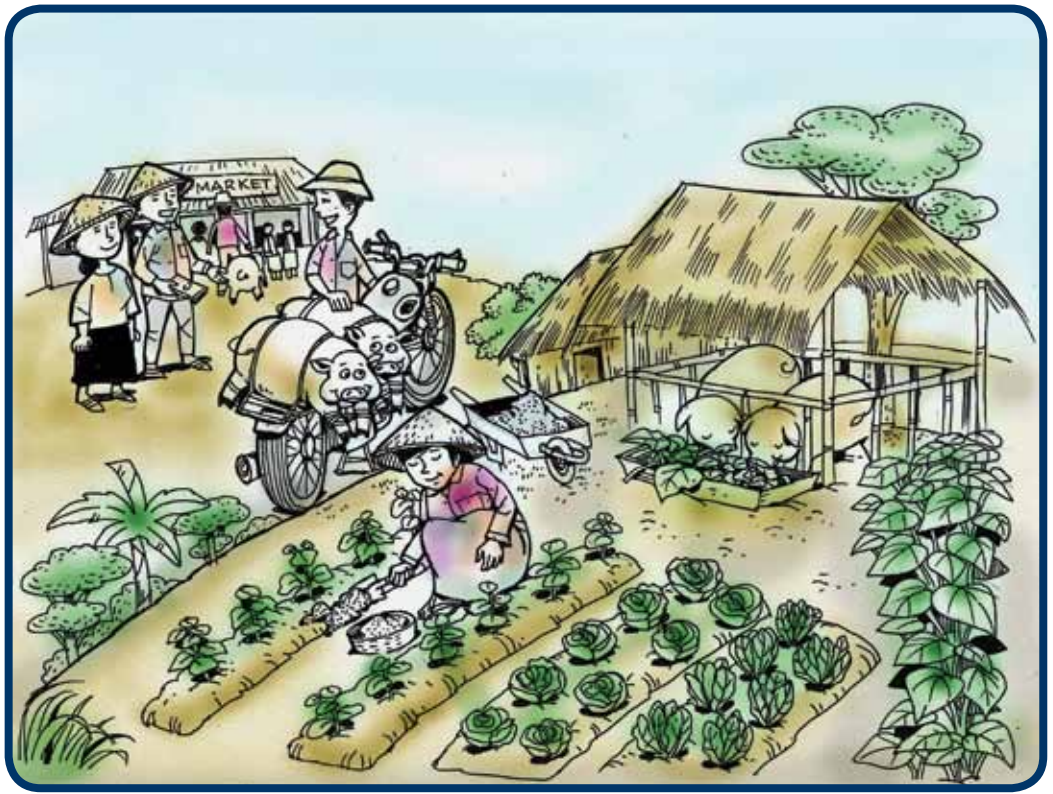
Building the resilience of smallholder farming and fishing communities require interventions to provide them greater access to portfolio of technologies, information, support services, market linkage and finance/credit that would enable them to adjust, modify or change their current production systems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



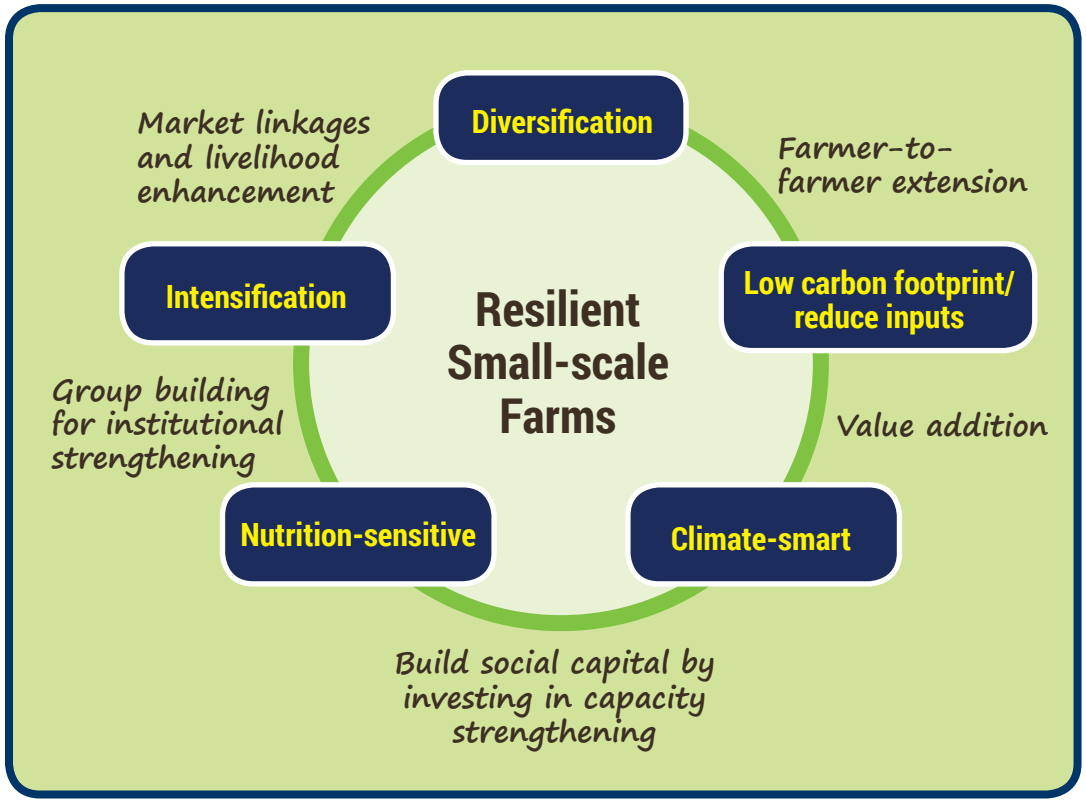
To design effective Community-based Adaptation (CBA) efforts, we have to first understand and assess local risks and vulnerabilities of communities. Focus group discussions, key informant panels, surveys and the study of secondary data are important methods. Vulnerability assessments are done to better 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 community-based adaptation is to build resilience bottom up. This is why community-based participatory action research is essential for deriving effective solutions.

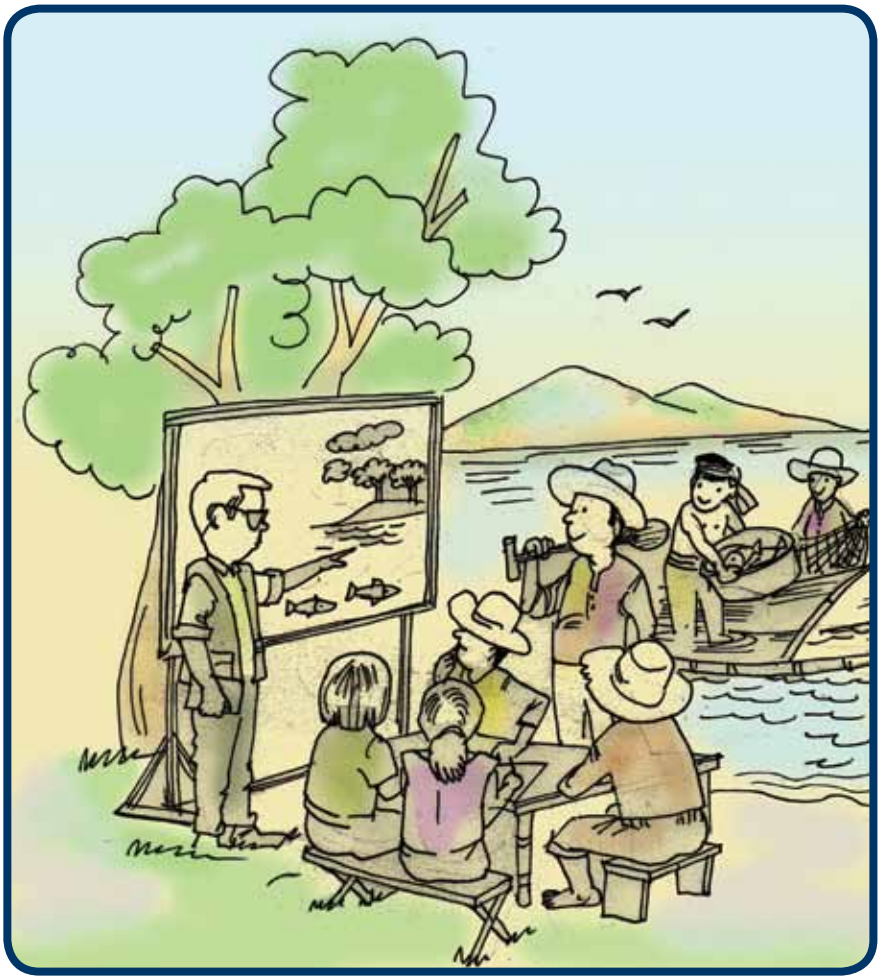
Finding solutions that work locally involve a process of participatory technology development (action research and learning). Farming and fishing communities identify, plan, design, field test, and learn about the effectiveness and scalability of portfolio of options for addressing specific risks and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



Building resilient small holder 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.



Certain geographic areas are designated as impact sites where wide scale adoption can be demonstrated. These centers evolve as centers of discovery, adaptation, learning and sharing. They serve as basis for documentation and field level advocacy.



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 the local government plans. Projects must demonstrate impact and uptake at scale if local governments are to take notice.

Let us look at climate change and the new interest and investments as our best opportunity to deliver on our promises to end hunger, reduce poverty and achieve the sustainable development goals.

Reminders:

- Community innovation development funds can encourage farmer experimentation, thereby building capacities to innovate/adapt.
- CBA is a bottom up approach that is driven by community needs and priorities. The process is context specific but lessons can be drawn for scaling out efforts.
- Identifying options for adaptation at the community level can help build adaptive capacities.
- It is important to understand the differential impacts of climate change on men and women.
- Communities with more assets and diverse income sources can better adapt to climate change.

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