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Mesoamerican Agroenvironmental Program

CGIAR

RESEARCH PROGRAM ON
Climate Change, Agriculture and Food Security

CCAFS

CIAT
Centro Internacional de Agricultura Tropical
International Center for Tropical Agriculture
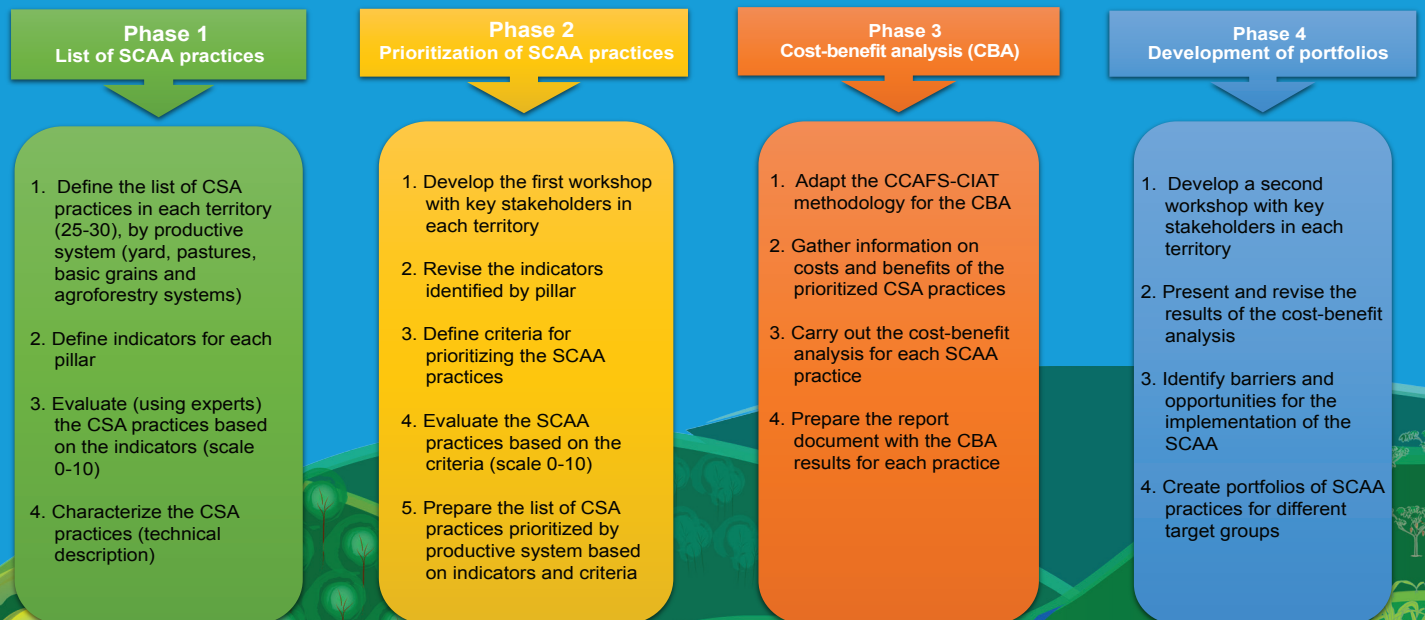Consultative Group on International Agricultural Research

Prioritization of Climate-Smart Practices in Agriculture (CSA) in two territories of Central America: NicaCentral and Trifinio

There is growing concern about the negative effects that weather variability and climate change are having on the economy and livelihoods of rural populations. To minimize these effects, CATIE (the Tropical Agricultural Research and Higher Education Center), through its Mesoamerican Agro-environmental Program (MAP), is developing research to prioritize the best CSA practices for promoting the wellbeing of rural families, food and nutritional security, as well as the conservation of natural resources, ecosystems, and the services that these provide.

In this regard, a practice is deemed a CSA practice when it contributes to three basic pillars: productivity, adaptation and mitigation (FAO, 2013).

To carry out the prioritization of CSA practices, CATIE has adapted the methodological tool for the *Prioritization of Investments in Sustainable Climate-Adapted Agriculture (SCAA)*, developed by the Research Program on Climate Change, Agriculture and Food Security (CCAFS) of the Consultative Group for International Agricultural Research (CGIAR) and the International Center for Tropical Agriculture (CIAT) CCAFS-CIAT. This methodology consists of four phases that include participatory and flexible processes, integrating key players at different levels to ensure the alignment of criteria, setting priorities and responding to local realities.

Phase 1
List of SCAA practices

1. Define the list of CSA practices in each territory (25-30), by productive system (yard, pastures, basic grains and agroforestry systems)

2. Define indicators for each pillar

3. Evaluate (using experts) the CSA practices based on the indicators (scale 0-10)

4. Characterize the CSA practices (technical description)

Phase 2
Prioritization of SCAA practices

1. Develop the first workshop with key stakeholders in each territory

2. Revise the indicators identified by pillar

3. Define criteria for prioritizing the SCAA practices

4. Evaluate the SCAA practices based on the criteria (scale 0-10)

5. Prepare the list of CSA practices prioritized by productive system based on indicators and criteria

Phase 3
Cost-benefit analysis (CBA)

1. Adapt the CCAFS-CIAT methodology for the CBA

2. Gather information on costs and benefits of the prioritized CSA practices

3. Carry out the cost-benefit analysis for each SCAA practice

4. Prepare the report document with the CBA results for each practice

Phase 4
Development of portfolios

1. Develop a second workshop with key stakeholders in each territory

2. Present and revise the results of the cost-benefit analysis

3. Identify barriers and opportunities for the implementation of the SCAA

4. Create portfolios of SCAA practices for different target groups

The expected result is the identification of portfolios of SCAA practices for productive systems in order to improve investments in agriculture.

Principal results

After Phases 1 and 2 were completed, the following list of prioritized practices was identified with key stakeholders:

№	Productive system	Name of practice	Nicacentral (point score)	Trifinio (point score)
1	Yard, home garden	Establishment and management of fruit species	8.86	7.83
2		Food and poultry production	7.85	7.54
3		Planting and management of foliage crops	7.16	7.40
4	Basic grains	Management and incorporation of grain stalks with no burning	7.42	8.29
5		Companion planting legume species with corn	7.34	
6		Minimal tilling for corn and beans	6.68	8.54
7		Seed selection and management		8.31
8	Agroforestry systems	Design and establishment of diversified agroforestry systems with coffee and cacao	8.53	8.97
9		Management of trees in an agroforestry system	8.25	
10		Tissue management in perennial crops	7.92	
11		Nutrition for coffee plantations		7.10
12	Pastures, livestock production	Establishment and management of improved pastures with scattered trees	8.51	8.89
13		Establishment and management of forage grasses	7.95	8.68
14		Establishment of rotational systems (division of pastures)	7.57	7.37

The point value corresponds to weighting on a scale from zero to 10 of indicators by pillar (defined by a group of experts) and established criteria (key stakeholders).

A radar chart was designed for each practice to reflect its contribution to each pillar. An example is given below for a livestock pasture system practice: establishment and management of improved pastures with scattered trees.
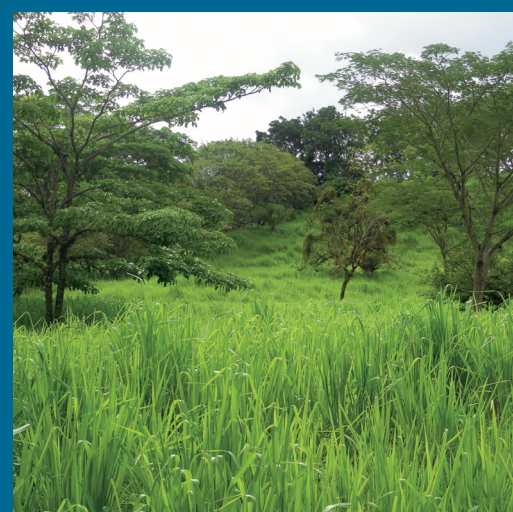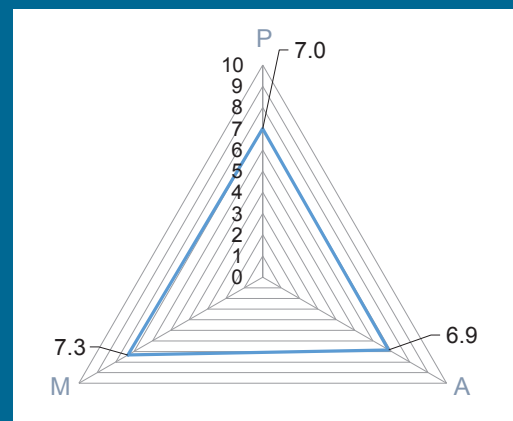
Level of impact 10 = very high, 0 = no effect.
P: productivity **A**: adaptation **M**: mitigation

The next steps

Phase 3 is now in development, with cost-benefit analyses being prepared for each one of the prioritized CSA practices. Based on these results, in Phase 4 the key stakeholders and experts will choose the best CSA practices to be promoted in the territories.

Prioritized CSA practices will be submitted to national and local government decision-makers and donor organizations. Upon seeing the potential of the CSA practices, the expectation is that these decision-makers will invest in their application in both territories by the rural families.

More information

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