

# Decision support tools for climate smart agriculture

## Decision support tools for strengthening family farmers' capacity to design climate smart options in Colombia

### ABSTRACT

Climate Smart Agriculture (CSA) has emerged as a new framework that links climate change and agriculture development initiatives and aims to establish agriculture systems that simultaneously increase productivity, enhance resilience, and reduce emissions. The transition to climate smart farming systems implies helping farmers acquiring new knowledge, attitude, and skills to analyze the complex impact of technical changes on the three pillars of CSA (productivity, resilience, attenuation). Particularly, new assessment methods are needed to be sure that to avoid solving one environmental problem (greenhouse gas emissions) while creating another.

Figure 1: Biopesticides can be considered as CSA practices, but tools are needed to assess their relevance at farm level

**Keywords :** Sustainability, Society, Family agriculture, Climate change, Farming systems, Innovation, Participatory, Scenario

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**Project number :** 1502-006

**Type of funding :** AAP MOBILITE

**Project type :** AAP

**Research units in the network :**

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**End date :** 2018-03-31

**Flagship project :** no

**Project leader :** Nadine Andrieu

**Project leader's institution :** CIRAD

**Project leader's RU :** INNOVATION

**Budget allocated :** 30000 €

**Total budget allocated ( including co-financing ) :** 90000 €

**Funding :** Labex

### GOAL

The overall objective of this proposal was to co-design with family farmers involved in a broader participatory research conducted in Colombia and Honduras, a methodology permitting to (1) strengthen their capacities to analyze the complex impacts of climate-smart practices on their farms, and to (2) facilitate their interactions with other local actors involved in a multi-stakeholder innovation platform.

### ACTION

Participatory definition and delimitation of the scope of the assessment based on surveys with farmers and a typology of existing farming systems

Selection of assessment criteria according to the literature on the three CSA pillars

Selection, Design and Calculation of Indicators based on focus groups with farmers and an inventory of all production, transportation, and processing processes for representative farms

Choice of the reference value to use (relative versus normative)

Interpretation of the results of the assessment and recommendations to improve synergies between the three pillars of CSA  
Drafting of scientific papers

## RESULTS

An operational methodology called LCSA4CSA for ministry of agriculture of Colombia, partners of the broader project, based on life cycle assessment and that allows to take into account the different environmental impact of CSA practices

A scientific paper submitted on the participatory process and its effects on farmers' knowledge and adoption of innovative practices

A scientific paper presenting the prospective evaluation of the role of climate-smart alternatives in adapting and mitigating climatic impacts and improving productivity

An oral communication to LCA AgriFood Asia 2018

Figure 2: Schematic representation of the system under consideration: at farm and crop system levels