

Evidences

Study #4417

Contributing Projects:

- P1604 - Digitally integrated approaches for managing climate risk and increasing food security
- P262 - Research and engagement for scaling climate-smart agriculture in Latin America

Part I: Public communications

Type: OICR: Outcome Impact Case Report

Status: Completed

Year: 2021

Title: Participatory integrated agro-climatic services benefits 33,000 farmers in 5 countries of Latin America

Short outcome/impact statement:

CCAFS scientists has co-developed and implemented "last-mile" mechanisms to reach directly the farmers providing climate information adapted for its use and allowing it to make a timely decision to mitigate its risk (i.e.,PICSA). In Guatemala's and Honduras's Climate-Smart Village, more than 60% of the farmers have perceived positive effects in yields/production with climate-informed decisions, even in unfavorable rainfall conditions. The effectiveness of PICSA has promoted their scaling out in zones of the Central America dry corridor and other Latinamerica countries.

Outcome story for communications use:

The impact of climate change and variability on agricultural production in Latin America (LAM) -a region that contributes around 14% of world food production- is undeniable. A transition towards more climate-smart agriculture practices has become increasingly urgent. Promoting the development of production in vulnerable areas must involve helping farmers manage the risks associated with climate hazards by providing access to timely and understandable information that supports decision-making in the field. This will help farmers safeguard their livelihoods and food security, increase productivity and adapt to a climatic variations.

In LAM, the Local Technical Agroclimatic Committees (LTAC) establishment has promoted higher connectivity and climate information democratization, to enable informed decision-making. However, to make information highly useful to farmers and can be transformed into actionable knowledge, CCAFS scientists has also co-developed and implemented "last-mile" mechanisms to reach directly the farmers providing climate information adapted for its use and allowing it to make a timely decision to mitigate its risk (i.e., Participatory Integrated Climate Services for Agriculture -PICSA).

In the Climate-Smart Villages (CSV) of Guatemala and Honduras, more than 60% of the farmers have perceived positive effects in yields/production with climate-informed decisions based on PICSA, such as changes in planting dates, implementation of rainwater harvesting systems, terracing, home gardens, conservation tillage, windbreaks, the introduction of water stress-resistant seeds, fish farming systems, among others. Field trials experiments with beans on the CSV generated evidence of the effectiveness of climate-informed decisions with substantial traction among stakeholders and farming communities. Prioritized practices by the LTAC in line with PICSA implementations, such as changes in planting dates and plant density, permanent control of pests and diseases, adequate land preparation, weeding, and correct fertilization duplicate yields in Colombia (2.4-2.9 in comparison with 1.5 ton/ha of the average) and triplicate in Guatemala (2.3-2.4 in comparison with 0.8-1 ton/ha), even in unfavorable rainfall conditions (ref.5). Some of these results have been also used for calibration varieties in a crop modeling framework.

The effectiveness of the participatory climate services has promoted their scaling out in zones of the Central America dry corridor potentially reaching 30k farmers in post-CCAFS collaborations with WFP both in Guatemala and Honduras (ref.8), 1.8k in Guatemala with Catholic Relief Services (CRS), and hundreds of small-scale farmers in Colombia, Ecuador, and Peru, in a low-carbon and agroecology agriculture context (ref.9).

Links to any communications materials relating to this outcome:

- <https://tinyurl.com/y665nrk3>
- <https://tinyurl.com/y6du8ars>
- <https://tinyurl.com/yypdojx8>
- <https://hdl.handle.net/10568/116798>
- <https://ccafs.cgiar.org/news/evaluating-bean-crop-management-through-olopa-tesac>
- <https://www.youtube.com/watch?v=gCxSaq9OMRQ>
- <https://tinyurl.com/y4yska8j>
- <https://tinyurl.com/y6fgqrwx>

Part II: CGIAR system level reporting

Link to Common Results Reporting Indicator of Policies : Yes

Policies contribution:

- 650 - National Framework for Climate Services (NFCS) development for Guatemala and Honduras
- 824 - The Ministry of Agriculture, Livestock and Nutrition (MAGA) led the Local Technical Agroclimatic Committees (LTAC) officialization in Guatemala

Stage of maturity of change reported: Stage 2

Links to the Strategic Results Framework:

Sub-IDs:

- Reduced smallholders production risk
- Increased resilience of agro-ecosystems and communities, especially those including smallholders

Is this OICR linked to some SRF 2022/2030 target?: Yes

SRF 2022/2030 targets:

- # of people, of which 50% are women, assisted to exit poverty

Description of activity / study: <Not Defined>

Geographic scope:

- Multi-national

Country(ies):

- Guatemala
- Peru
- Honduras
- Ecuador
- Colombia

Comments: <Not Defined>

Key Contributors:

Contributing CRPs/Platforms:

- CCAFS - Climate Change, Agriculture and Food Security

Contributing Flagships:

- FP4: Climate services and safety nets

Contributing Regional programs:

- LAM: Latin America

Contributing external partners:

- IHCAFE - INSTITUTO HONDURENO DEL CAFE
- CIP - Centro Internacional de la Papa
- CRS - Catholic Relief Services
- CASM - COMISIÓN DE ACCIÓN SOCIAL MENONITA
- Fundación EcoHabitats
- EkoRural
- WFP - World Food Programme
- ASORECH - Asociación Regional Campesina Chorti

CGIAR innovation(s) or findings that have resulted in this outcome or impact:

N/A

Innovations:

- 1911 - Assessment tool to identify the effects of COVID-19 on food security
- 1741 - Quick appraisal monitoring and evaluation tool for the Local Technical Agroclimatic Committees (LTACs) in Latin America (LAM)
- 1248 - Competencies for Climate Risk Management: making climate-smart agriculture operational

Elaboration of Outcome/Impact Statement:

The impact of climate change and variability on agricultural production in Latin America (LAM) -a region that contributes around 14% of world food production (ref.1)- is undeniable. A transition towards more climate-smart agriculture practices has become increasingly urgent. Promoting the development of production in vulnerable areas must involve helping farmers manage the risks associated with climate hazards by providing access to timely and understandable information that supports decision-making in the field. This will help farmers safeguard their livelihoods and food security, increase productivity and adapt to a climatic variations.

In LAM, the Local Technical Agroclimatic Committees (LTAC) establishment has promoted higher connectivity and climate information democratization (ref.2), to enable informed decision-making. However, to make information highly useful to farmers and can be transformed into actionable knowledge, CCAFS scientists has also co-developed and implemented "last-mile" mechanisms to reach directly the farmers providing climate information adapted for its use and allowing it to make a timely decision to mitigate its risk (i.e., Participatory Integrated Climate Services for Agriculture -PICSA; ref.3).

In the Climate-Smart Villages (CSV) of Guatemala and Honduras, more than 60% of the farmers have perceived positive effects in yields/production with climate-informed decisions based on PICSA, such as changes in planting dates, implementation of rainwater harvesting systems, terracing, home gardens, conservation tillage, windbreaks, the introduction of water stress-resistant seeds, fish farming systems, among others (ref.4). Field trials experiments with beans on the CSV generated evidence of the effectiveness of climate-informed decisions with substantial traction among stakeholders and farming communities. Prioritized practices by the LTAC in line with PICSA implementations, such as changes in planting dates and plant density, permanent control of pests and diseases, adequate land preparation, weeding, and correct fertilization duplicate yields in Colombia (2.4-2.9 in comparison with 1.5 ton/ha of the average) and triplicate in Guatemala (2.3-2.4 in comparison with 0.8-1 ton/ha), even in unfavorable rainfall conditions (ref.5-6). Some of these results have been also used for calibration varieties in a crop modeling framework (ref.7).

The effectiveness of the participatory climate services has promoted their scaling out in zones of the Central America dry corridor potentially reaching 30k farmers in post-CCAFS collaborations with WFP both in Guatemala and Honduras (ref.8), 1.8k in Guatemala with CRS, and hundreds of small-scale farmers in Colombia, Ecuador, and Peru, in a low-carbon and agroecology agriculture context (ref.9).

References cited:

- [1] Dorward P, Clarkson G, Stern R. 2015. Participatory Integrated Climate Services for Agriculture (PICSA): Field Manual. Walker Institute, University of Reading. (<https://hdl.handle.net/10568/68687>)
- [2] WMO. 2021. State of the Climate in Latin America and the Caribbean. World Meteorological Organization. (https://library.wmo.int/doc_num.php?explnum_id=10876)
- [3] [D25026] Navarro-Racines C., et al. 2021. Implementacion de servicios climaticos participativos en comunidades de Zacapa, El Progreso y Chiquimula; Informes Tecnicos Mensuales 2021. Wageningen, Paises Bajos: Programa de investigacion del CGIAR sobre cambio climatico, agricultura y seguridad alimentaria (CCAFS). (<https://hdl.handle.net/10568/116227>)
- [4] [D27628] Alvarez Toro P, et al. 2020. Establecimiento de ensayos para modelaci?n de fr?jol en el TeSAC del Cauca, Colombia. CCAFS Working paper No.351. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). (<https://hdl.handle.net/10568/111715>)
- [5] [D25428] Navarro-Racines C, ?lvarez-Toro P, R?os D, Borja R, Padilla G, Montalvo D, Oyarz?n P, Orrego P, Renato O, Taipe D, Canto R, Franco A, Arce A. 2021. Implementaci?n de Servicios Integrados Participativos de Clima para la Agricultura (PICSA) en comunidades de Ecuador, Per? y Colombia con enfoque agroecol?gico. CCAFS Working Paper no.402. Programa de Investigaci?n de CGIAR en Cambio Clim?tico, Agricultura y Seguridad Alimentaria (CCAFS). (<https://hdl.handle.net/10568/116717>)
- [6] [D32486] Lopez C, et al. 2020. Manual de implementacion de practicas de Agricultura Sostenible Adaptada al Clima (ASAC). Experiencias de los TeSAC de Guatemala y Honduras. Programa de Investigacion de CGIAR en Cambio Climatico, Agricultura y Seguridad Alimentaria (CCAFS). (<https://hdl.handle.net/10568/111802>)
- [7] [D32978] Jara C, Navarro-Racines C.2021. Gu?a de manejo agron?mico de frijol arbustivo para peque?os agricultores. CCAFS Training material. Wageningen, Pa?ses Bajos: Programa de investigaci?n del CGIAR sobre cambio clim?tico, agricultura y seguridad alimentaria (CCAFS). (<https://hdl.handle.net/10568/116328>)
- [8] [D19847] Giraldo et al. 2020. Outcome Harvesting: Assessment of the transformations generated by Local Technical Agroclimatic Committees In Latin America. CCAFS Working Paper No.299. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). (<https://hdl.handle.net/10568/108492>)
- [9] [D32979] Jara C, et al. 2021. Establecimiento de ensayos de campo de frijol en el TeSAC de Olopa, Guatemala, para evaluar la efectividad del uso de servicios climaticos participativos. CCAFS Reports. Wageningen, Paises Bajos: Programa de investigacion del CGIAR sobre cambio climatico, agricultura y seguridad alimentaria (CCAFS). (<https://hdl.handle.net/10568/116329>)

Quantification:

Type of quantification: a) Actual counts or estimates from a particular study (please provide reference)

Number: 33000.00

Unit: Farmers

Comments: Actual count based on census of prioritized communities of CCAFS-WFP collaboration in Guatemala (Pro-Resilience program) and from the CCAFS-CIP collaboration (Agroecology, project) . References as follows: [D25026] Navarro-Racines C., et al. 2021. Implementacion de servicios climaticos participativos en comunidades de Zacapa, El Progreso y Chiquimula; Informes Tecnicos Mensuales 2021. Wageningen, Paises Bajos: Programa de investigacion del CGIAR sobre cambio climatico, agricultura y seguridad alimentaria (CCAFS). <https://hdl.handle.net/10568/116227>; [D25428] Navarro-Racines C, Alvarez-Toro P, Ros D, Borja R, Padilla G, Montalvo D, Oyarzun P, Orrego P, Renato O, Taipei D, Canto R, Franco A, Arce A. 2021. Implementación de Servicios Integrados Participativos de Clima para la Agricultura (PICSA) en comunidades de Ecuador, Perú y Colombia con enfoque agroecológico. CCAFS Working Paper no.402. Programa de Investigación de CGIAR en Cambio Climático, Agricultura y Seguridad Alimentaria (CCAFS). <https://hdl.handle.net/10568/116717>.

Gender, Youth, Capacity Development and Climate Change:

Gender relevance: 1 - Significant

Main achievements with specific **Gender** relevance: PICSA approach has explicit gender components, which has led to producing gender-sensitive climate information.

Components include i) indiscriminate access to weather and climate information for both men, women and youth; ii) participation of the whole family in the design of the farm resource allocation map for the planning of CSA practices; iii) co-design and prioritization of agronomic practices differentiated according to the needs/participation of men, women and the whole family on-farm (e.g., crop/livestock/livelihood practice option matrix, providing options by context).

Youth relevance: 1 - Significant

Main achievements with specific **Youth** relevance: PICSA approach has produce young-sensitive climate information.

Components include i) indiscriminate access to weather and climate information for both men, women and youth; ii) participation of the whole family in the design of the farm resource allocation map for the planning of CSA practices; iii) co-design and prioritization of agronomic practices differentiated according to the needs/participation of men, women and the whole family on-farm (e.g., crop/livestock/livelihood practice option matrix, providing options by context).

CapDev relevance: 2 - Principal

Main achievements with specific **CapDev** relevance: PICSA approach sought to strengthen participants' capacities by conducting training workshops on agro-climatic information and tools which are used to inform crop management decisions. To build skills, it also focused on empowering members of the committees by assigning alternating roles and tasks among participating organizations.

Climate Change relevance: 2 - Principal

Describe main achievements with specific **Climate Change** relevance: By enhancing farmers capacity to understand and access agro-climatic information, they are able to make better decisions, thus increasing their resilience in the face of climate variability and climate change.

Other cross-cutting dimensions: <Not Defined>

Other cross-cutting dimensions description: <Not Defined>

Outcome Impact Case Report link: [Study #4417](#)

Contact person:

Julian Ramirez-Villegas, Senior Scientist on Climate Impacts, CCAFS, CIAT. j.r.villegas@cgiar.org;

Carlos Navarro-Racines, Associate Researcher, CCAFS, CIAT, c.e.navarro@cgiar.org