Clima-LoCa: Fostering CLIMAte-relevant and LOw CAdmium innovations to enhance the resilience and inclusiveness of the growing cocoa sectors in Colombia, Ecuador and Peru.

Objectives of the project

Clima-LoCa aims to foster the development and scaling of low cadmium and climate-relevant production practices and innovations that fit the diverse contexts of smallholder cocoa production.

Background

Latin American and the Caribbean (LAC) is the main producer of fine flavour cacao in the world and the contribution of LAC to global cacao production is growing rapidly. The governments of Colombia, Ecuador and Peru, supported by international development cooperation, actively promote cacao as a strategy for reducing rural poverty and replacement of illegal crops. However, a sustainable transformation of the cacao sectors in the Andean countries requires that critical challenges are being addressed: low productivity, climate change, and high levels of cadmium in the cacao beans.

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New food safety regulation for cadmium in cacao**,** first implemented by the European Union in January 2019, strictly limits maximum levels of cadmium in cacao products. The concentrations of cadmium in cacao from the Andean countries frequently exceed the levels that buyers find acceptable, although there is a considerable geographic variation within the countries. At the same time, climate change is negatively impacting the production of cacao and the stability of this production, due to longer and more intense periods of drought, greater incidence of pests and diseases and more irregular rainfall. But like cadmium, there is large geographic variation. Indiscriminate promotion of cacao production and technological packages without accounting for current and future cadmium and climate-related risks can exacerbate the vulnerability of smallholder cacao producers.

To be able to provide guidance for adequate production strategies and public policies, we need better information on the spatial variation and sources of cadmium in cacao production systems, and of the projected impacts of climate change on cacao production. There is also an urgent demand for scientific evidence on (i) cost-effective mitigation measures applicable to cacao production systems, such as the use of cacao cultivars or soil amendments that reduce the uptake of cadmium by cacao trees; and (ii) climate-smart production practices, including selection and management of shade trees in agroforestry systems, improvements in soil management, and drought-tolerant cacao genotypes.

The theory of change to achieve the objectives

The expected impact of the project is to contribute to a more resilient, competitive and inclusive cocoa value chains and reduced vulnerability of smallholder cocoa producers in Colombia, Ecuador and Peru to the consequences of new food safety regulation and climate change. The main outcome of Clima-LoCa is that different relevant actors in the cocoa value chains and innovation systems develop and implement low cadmium and climate-relevant production innovations and support scaling, through mobilization of science and better coordination among actors and policy incentives (Fig 1).

To achieve this, Clima-LoCa will promote interdisciplinary research to characterize the geographical distribution of cadmium and climate impacts on cacao production systems, and the needs for

mitigation measures and provide scientific information to guide policies. Researchers will conduct trials to analyse the cadmium dynamics with regards to cacao genotypes and agricultural practices and to test technologies and practices to limit the uptake or impact of cadmium in cacao.

The project will strengthen and coordinate research and knowledge sharing among research institutes, farmers, government agencies and private sector actors across the three target countries. Farmers will be involved from the beginning on the participatory research, taking part on the trials and being a key actor on the innovative platforms which will be promoted. To enhance adoption and scaling, the project will work closely with public and private sector actors, including farmer associations and other ones along the cocoa value chain, to co-develop context-relevant and cost-effective technologies and innovations, and improved strategies and incentives for dissemination and scaling.

The private sector is key on the scaling-up. For instance, CAOBISCO will work closely with the project developing the tested technologies and innovations, and conducting the trials, using the same protocols. Clima-Loca intends to foster adoption by farmers and farmer's associations, and to scale up adoption through other development operators. For example, in Colombia, Clima Loca, will work closely with the EUTF (European Union Trust Fund) partners, which are already developing sustainable practices, on the cocoa value chain. Dissemination activities will target specifically farmers and farmer's organizations, to foster adoption, and the project intends to produce policy briefs to guide policy dialogues.

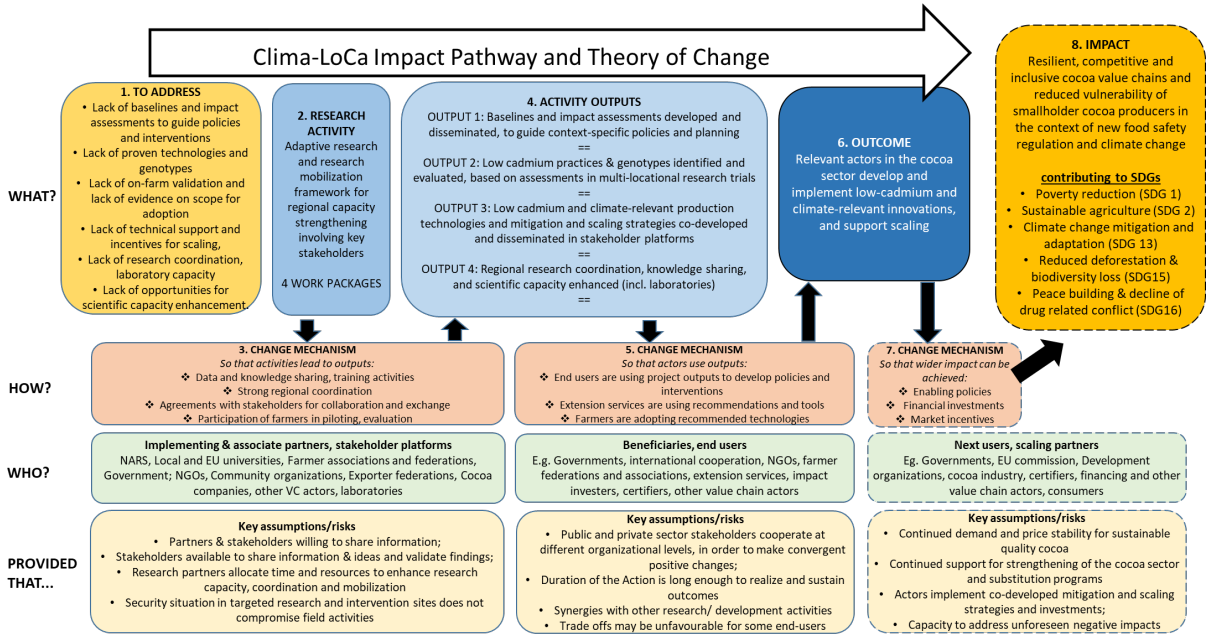

Figure 1. The impact pathway based on the theory of change, showing how research activities lead to outputs and outcomes and contribute to the impact to which the project contributes.

Main activities

Fifteen activities, organized into 4 interdisciplinary work packages (Fig 2), will generate the 4 main activity outputs shown in Fig 1

WP1 will develop baselines and impact assessments for cadmium and climate change, to guide public policies and interventions taking into account geographic variation in edaphoclimatic and socio-economic contexts and cacao genetics;

WP2 will establish and assess multilocational research trials to generate scientific evidence for low cadmium and climate-relevant production practices and genotypes, while considering effects on productivity, soil health and the cost-benefit relationship for these practices;

WP3 will pilot low cadmium and climate smart agronomic practices and genotypes through farmer participation and co-develop mitigation and scaling strategies in multi-stakeholder platforms.

WP4 will strengthen regional research coordination and research capacity, including laboratory capacity. All WPs include activities dedicated to dissemination and development of decision support tools and training materials, targeting diverse stakeholders.

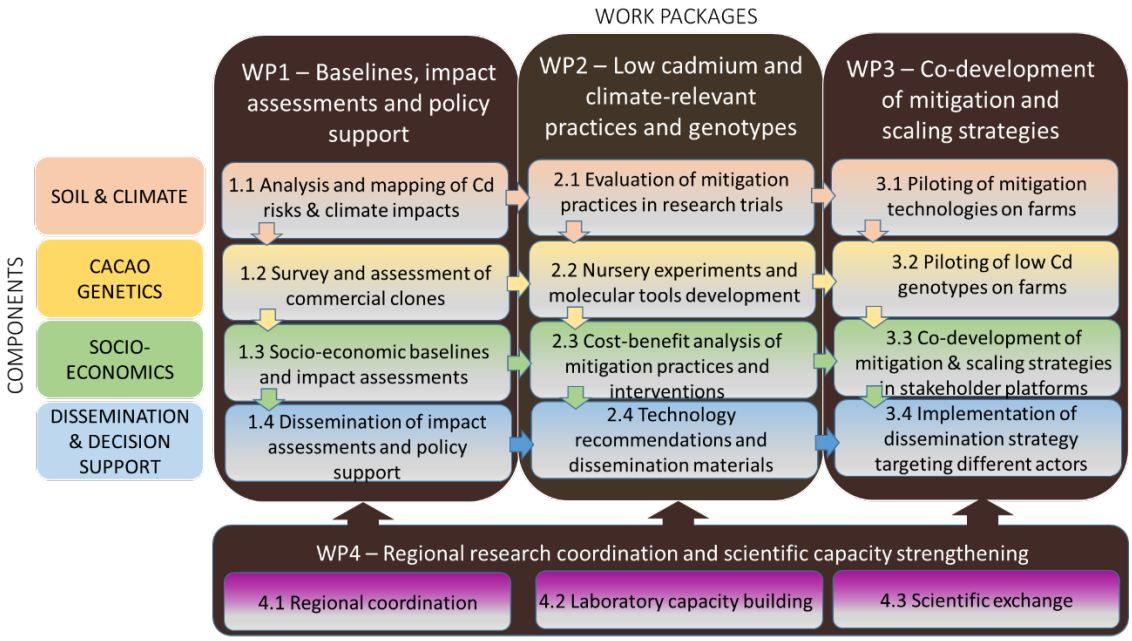

Figure 2. Overview of the project workplan, with 15 activities, organized in 4 interdisciplinary Work Packages.

Organization

The project is being implemented by a research consortium under the overall responsibility of the International Center of Tropical Agriculture (CIAT), and in close collaboration with the EU Delegations in Colombia, Ecuador and Peru. CIAT, part of the global CGIAR network, will lead overall project coordination and the regional implementation and streamlining of project activities according to four components: "soil and environment", "cacao genetics", "socio-economics" and "dissemination and decision support". For the regional streamlining regarding "cacao genetics", CIAT is being supported by CIRAD. According to the organizational structure of Clima-LoCa, partners have been assigned specific responsibilities, governance and implementation roles. Country-level focal points are CIAT in Colombia, ESPOL in Ecuador and BIOVERSITY in Peru. CGIAR institutes BIOVERSITY and CIAT are operating under the newly established CIAT-BIOVERSITY Alliance. A Steering Committee will be set up involving implementing organizations and EU Delegations of three countries. Other main stakeholders could be invited to the SC, if necessary.

Implementing organizations

CIAT, operating under the Alliance of Bioversity International, and research partners from LAC and Europe.

Partners of the project

ESPOL, INIAP, AGROSAVIA, CIRAD, KU LEUVEN, WAGENINGEN UNIVERSITY (co-applicants); INIA, IRD, Cocoa Research Center (associate partners).

Other stakeholders

Ministries of Agriculture and Ministries of Commerce and associated authorities such as SENASA (Peru), INM, ICA, and UPRA (Colombia), AGROCALIDAD and INEN (Ecuador); NGO's active in the cacao sector, EU Member States, agencies for international cooperation, Colombia in Paz, DEVIDA (Peru), private sector (e.g. cacao producers, chocolate companies, traders) including CAOBISCO, ECA and FCC members, 12TREE-finance-gmbh (impact investment), FEDECACAO and RED CACAOTERA in Colombia, NORANDINO, APPCACAO and the ALIANZA CACAO in PERÚ.

Region

Colombia, Ecuador, Peru.

Funding and co-funding

EU	€ 6,000,000
co-funding (in-kind) not specified	
Total budget	€ 6,000,000

Duration

December 2019 – December 2023 (4 years)

Further info

https://blog.ciat.cgiar.org/regional-research-project-seeks-to-promote-the-development-of-cacao-to-continue-competing-in-the-european-market/

https://www.worldcocoafoundation.org/blog/cadmium-continued-supporting-farmers-and-chocolate-companies-on-the-implementation-of-the-eu-regulation/

Alliance

Bioversity International

CIAT International Center for Tropical Agriculture Since 1967 Science to cultivate change

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