



Cocoa in Indonesia

## Upscaling Climate-Smart Agriculture

- **The challenge:** Recognizing the potential to reduce emissions through promotion and adoption of more sustainable and efficient land management practices and resource use, the Government of Indonesia outlined its vision in 2011, to realize a twenty-six percent GHG emissions reduction by 2020, in line with its national climate change mitigation action plan (RAN-GRK).
- Sixty-seven percent of Indonesia's greenhouse gas (GHG) emissions at a national level stem from land-based activities: agriculture and estate, livestock, fishery and forestry. In comparison to the energy, transport and construction sectors, however, the Land Use, Land Use Change and Forestry (LULUCF) sector lags far behind in formulating and implementing a Nationally Appropriate Mitigation Actions (NAMA) strategy.
- The cocoa sector is likely a major contributor to LULUCF sector emissions, given the extensive and expansionist nature of production, encroachment on forestland, continued use of practices such as slash-and-burn to clear land, and overuse and inappropriate use of fertilizer and agro-chemicals leading to soil degradation.
- In this context, the sector could significantly contribute to reducing GHG emissions associated with the sector by promoting climate-smart agriculture (CSA) practices for smallholder farmers, which would lead to efficiency gains and reduce the amount of land planted to cocoa. In addition, it would enhance the resilience of smallholder farmer's chosen livelihood strategy, and the supply chain for cocoa beans.



RESEARCH PROGRAM ON  
**Climate Change,  
Agriculture and  
Food Security**



## The opportunity

Public and private sector actors have a key role to play in promoting and facilitating adoption of climate-smart agriculture (CSA) practices in Indonesia. Particularly given that smallholder farmers typically face constraints in adopting new technologies - ranging from access to information, training and extension - to access to credit and inputs. By designing a roadmap for adoption of CSA practices and establishing a learning community on climate-smart value chains and landscapes - to facilitate interaction and learning at value chain, sector and landscape levels – public and private sector actors can reduce the barriers facing smallholder farmers and therefore, significantly increase adoption of practices.

## The strategy

The proposed project will build a business case for agribusiness to engage with and promote adoption of CSA practices by smallholder cocoa producers in Indonesia. Although adoption of practices would lead to many benefits, collective action initiatives to respond to bottlenecks currently undermining adoption of CSA practices such as a lack of financial resources, capacities - technical, strategic, leadership - and incentives, are contingent on synergies between climate and smallholder focused commitments being identified.

To improve understanding of how to incorporate climate change mitigation and adaptation into sustainability strategies, the project will engage development practitioners, financial institutions, and the public and private sector. This will facilitate the development of a CSA value chain engagement model underpinned by good data and an easily adaptable framework, as well as the establishment of a learning community.

The learning community will comprise so-called early mover or 'leader' actors who are already advanced in incorporating CSA into their sustainability strategies, as well as those lagging behind in recognizing the value and importance of adaptation to climate change and mitigation of impacts. Existing networks will be leveraged to identify actors with interest and capacity to invest in CSA.

Many of the key actors participating in the Sustainable Cocoa Production Program (SCPP) work with smallholder cocoa producers in Central America, East and West Africa. As CIAT is already engaged in conversation with many of these actors, the project will look to complement and connect work in Indonesia to work ongoing in other key cocoa origins, thus avoiding duplication of efforts.

Decision-support tools will be tailored to:

- 1) the role played by different actors in the value chain;
- 2) their product-sourcing and the role played by smallholder farmers;
- 3) their sourcing footprint and finally;
- 4) their climate commitments (related to sustainability and corporate social responsibility).

These tools will facilitate climate risk diagnosis, cost-benefit analysis of CSA practices, a gaps assessment of CSA practices, and monitoring and evaluation of adherence to CSA. Crop and climate models, as well as climate exposure gradient maps will be developed to determine risk and impact (high, medium and low). This will enable actors to reduce uncertainty, translate changes in crop productivity and suitability into business costs, and fundamentally increase the resilience of their supply chains by identifying CSA practices appropriate to different exposure gradients.

The proposed project will develop a typology of different agribusiness actors based on barriers and opportunities faced in promoting and adopting CSA practices. Tradeoffs between practices will be assessed, and associated positive and negative externalities analyzed. This will facilitate the development of context-specific climate-smart action plans for sourcing and investment, and enable agribusiness actors to evaluate and understand the benefits of different CSA practices and strategies.



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The International Center for Tropical Agriculture (CIAT) – a member of the CGIAR Consortium and leader of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) – develops technologies, innovative methods, and new knowledge that better enable farmers, especially smallholders, to enhance eco-efficiency in agriculture. [www.terra-i.org](http://www.terra-i.org)