

# NS-72 - NAMA - Low Carbon Coffee - Costa Rica

## Costa Rica

### NAMA Seeking Support for Implementation

#### A Overview

A.1 Party

Costa Rica

A.2 Title of Mitigation Action

NAMA - Low Carbon Coffee - Costa Rica

A.3 Description of mitigation action

Costa Rica's coffee production accounts for nearly 10% of national GHG emissions (inventory 2005). The Costa Rican government aims to implement the Coffee NAMA in a participatory process between 2014 and 2023. It covers the two most important GHG sources in national coffee sector: the coffee farms and the mills. The Coffee NAMA and the NAMA support project include four measures for reducing GHG in the sector: 1. reduction in the use of nitrogenated fertilizers and N<sub>2</sub>O emissions, 2. avoidance of methane through improved treatment and reuse of wastewater in mills, 3. improved use and management of biomass as energy source instead of wood and 4. carbon capture through spread of agro-forestry systems.

The implementation of these measures requires institution and capacity building, evidence building and knowledge sharing. This support project will provide incentives for investments in GHG-efficient technologies and for collaborating with low-carbon coffee producers, support the dissemination of new practices, and monitoring of NAMA activities (MRV). This will be achieved through technical advice to administration, extension services and coffee producer's practices transformation, through partnerships with the international coffee and fertilizer industry, and through financial support instruments like grants, concessional loans or guarantees for coffee farmers and mills.

Intending national carbon-neutrality in 2021, Costa Rican government is convincingly leading a national mitigation process and has implemented the political framework for elaborating and implementing of NAMAs in different sectors. The NAMA Low Carbon Coffee Costa Rica fits in the National Strategy for Climate Change (ENCC) as well in the agriculture sector strategy.

This NAMA support project will facilitate more intensive cooperation between the leading institutions like, Ministry of Agriculture and Livestock, Ministry of Environment and Coffee Institute of Costa Rica (ICAFE), as well with the private sector to make coffee production more climate-friendly. Policy changes proposed in the NAMA Project are related to national strategies and focus on an intelligent mix of regulations and incentives that

concede preferential advice and microfinance for innovative farmers and mills.

This will improve the entrepreneurial position and the competitiveness of producers and processors in the coffee sector. The NAMA support project will address the knowledge gaps of extension personnel on climate mitigation and adaptation opportunities, and improve access on existing additional government incentives (e.g. FONAFIFO Payments for Environmental Services - (PES). It will significantly develop capacities of farmers and millers for investing in better technologies.

The incentives for fertilization in low nitrous oxide emissions that are to be developed will influence innovations in the fertilizer industry that might have much broader impacts in the agriculture sector in the medium- and long term (indirect effect). Most farmers are organized into cooperatives and associations, which facilitates the implementation of new technologies and proposed data collection for MRV. Coffee NAMA, as a kind of “Product NAMA” is a very good laboratory to transfer MRV experiences to other sectors.

The support of a collective and collaborative GHG monitoring system in the coffee sector will allow changing the perspective in the Costa Rican agriculture sector and also in other countries in the region and on an international level on the production of low carbon coffee, and will enable a stronger position in marketing of low carbon or carbon-neutral agriculture products and thus leverage private contributions to less GHG-intensive coffee and agriculture production methods.

The strong institutional structure, high degree of organization and collaboration of public and private stakeholders and the civil society in the coffee sector has enabled many successful transformational processes on Costa Rican’s way to middle income country. The support project stimulates local capacities for low-carbon technologies and measures and provides a suitable surrounding for technology transfer. Farmers and millers become innovative entrepreneurs and thus secure their own existence.

The NAMA support project will offer up-scaling potential for the roll-out to other sectors of agricultural production in Costa Rica. The first coffee NAMA worldwide could also be an example for mitigation actions to the entire coffee sector in Latin America and worldwide. The Coffee NAMA counts on an intensive cooperation with private sector, with technology providers as well as coffee distributions systems, especially in Europe. Therefore there is a high potential for up-scaling processes based on international joint ventures and public-private partnerships.

A.4 Sector	<input type="checkbox"/> Energy supply <input type="checkbox"/> Residential and Commercial buildings <input checked="" type="checkbox"/> Agriculture <input type="checkbox"/> Waste management <input type="checkbox"/> Transport and its Infrastructure <input type="checkbox"/> Industry <input type="checkbox"/> Forestry <input type="checkbox"/> Other <input type="text"/>
A.5 Technology	<input checked="" type="checkbox"/> Bioenergy <input type="checkbox"/> Energy Efficiency <input type="checkbox"/> Hydropower <input type="checkbox"/> Wind energy <input type="checkbox"/> Carbon Capture and Storage <input type="checkbox"/> Land fill gas collection <input type="checkbox"/> Cleaner Fuels <input type="checkbox"/> Geothermal energy <input type="checkbox"/> Solar energy <input type="checkbox"/> Ocean energy <input type="checkbox"/> Low till / No till <input checked="" type="checkbox"/> Other <input type="text"/> Reduction in the use of n
A.6 Type of action	<input type="checkbox"/> National/ Sectoral goal <input type="checkbox"/> Strategy <input checked="" type="checkbox"/> National/Sectoral policy or program <input type="checkbox"/> Project: Investment in machinery <input type="checkbox"/> Project: Investment in infrastructure <input type="checkbox"/> Project: Other <input type="checkbox"/> Other <input type="text"/>
A.7 Greenhouse gases covered by the action	<input checked="" type="checkbox"/> CO2 <input checked="" type="checkbox"/> N2O <input type="checkbox"/> PFCs <input type="checkbox"/> CH4 <input type="checkbox"/> HFCs <input type="checkbox"/> SF6 <input type="checkbox"/> Other <input type="text"/>

### B National Implementing Entity

B.1.0 Name	Ministry of Agriculture and Livestock MAG, Government of Costa Rica
B.1.1 Contact Person 1	Tania López, Vice-Minister
B.1.2 Address	San José, Sabana Sur antiguo Colegio La Salle. Segundo piso
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B.1.5 Contact Person 2	
B.1.6 Address	
B.1.7 Phone	
B.1.8 Email	
B.1.9 Contact Person 3	
B.1.10 Address	
B.1.11 Phone	
B.1.12 Email	
B.1.13 Comments	

### C Expected timeframe for the implementation of the mitigation action

C.1	Number of years for completion	5
C.2	Expected start year of implementation	2014

### D Currency

D.1 Used Currency	<input type="text"/> AED Conversion to USD: 1
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## E Cost

E.1.1 Estimated full cost of implementation 7000000

E.1.2 Comments on full cost of implementation

Of the €7 million an amount of €4 million are used for direct investments as well as for the direct preparation, managing, monitoring and support of investments. The investments are necessary for small local grants or subsidies, guarantees and concessional loans to producers and processors. For Personnel are calculated three (2) international and eight (8) local experts (3 for management of loans and grants). External services are necessary for national and international consultants, financing for studies and cost-benefit calculations. Other costs are for office and travel costs of partner personnel and other stakeholder, like promoters from ICAFE and management of Fundecooperación.

E.2.1 Estimated incremental cost of implementation

E.2.2 Comments on estimated incremental cost of implementation

## F Support required for the implementation the mitigation action

F.1.1 Amount of Financial support

F.1.2 Type of required Financial support

<input type="checkbox"/> Grant	<input type="checkbox"/> Guarantee
<input type="checkbox"/> Loan (sovereign)	<input type="checkbox"/> Equity
<input type="checkbox"/> Loan (Private)	<input type="checkbox"/> Carbon finance
<input type="checkbox"/> Concessional loan	
<input type="checkbox"/> Other <input style="width: 100%;" type="text"/>	

F.1.3 Comments on Financial support

F.2.1 Amount of Technological support

F.2.2 Comments on Technological support

F.3.1 Amount of capacity building support

F.3.2 Type of required capacity building support

<input type="checkbox"/> Individual level
<input type="checkbox"/> Institutional level
<input type="checkbox"/> Systemic level
<input type="checkbox"/> Other <input style="width: 100%;" type="text"/>

F.3.3 Comments on Capacity Building support

F.4 Financial support for implementation required

F.5 Technological support for implementation required

F.6 Capacity Building support for implementation required

## G Estimated emission reductions

G.1 Amount 0.120

G.2 Unit

G.3 Additional information (e.g. if available, information on the methodological approach followed)

The agricultural sector accounts for 37 % of national GHG emissions, 25% of these belong to the coffee sector (10% of overall emissions). The NAMA support project addresses the two most important sources of GHG identified in the coffee sector: the farm (NO<sub>2</sub> mitigation and CO<sub>2</sub> fixation) and the mills (CH<sub>4</sub>

and CO<sub>2</sub> mitigation). The support project will have direct and indirect effects on mitigating GHG emissions as it will focus on improving the “mitigation capacity” of Costa Rica. Indirectly, the support project will contribute to the following emission reductions by the target groups (farms and mills):

1. Reductions in nitrous oxide emissions, by adoption of efficient practices of fertilizer application.
2. Reductions in methane emissions by improved water management in anaerobic treatment systems and by introducing technologies for wastewater treatment.
3. Reductions in methane and CO<sub>2</sub> emissions through aerobic treatment and energetic use of pulp.
4. Reduction in CO<sub>2</sub> emissions coming from electrical energy savings by improving the coffee drying process
5. Increased fixation of carbon by the spread of coffee agroforestry systems (intensified shading).

The reduction potential in growing and milling is approx. 30,000 Ton CO<sub>2</sub>/year, meanwhile carbon sink potential is approximately 90,000 Ton CO<sub>2</sub>/year, resulting in a total mitigation potential of 120,000 Ton CO<sub>2</sub>/year. The expected aggregate GHG emission reductions over 20 years will be 1,850,000 Ton CO<sub>2</sub>e in conservative estimates. The support project could directly or indirectly influence about 250,000 ton CO<sub>2</sub> of this mitigation potential. The quantification of GHG mitigation potential will become available through the application of the MRV system.

## H Other indicators

### H.1 Other indicators of implementation

The Ministry of Agriculture in cooperation with the coffee sector of Costa Rica implements policy reforms that induce low carbon coffee production. Innovations in the fertilizer industry, Capacity building and incentive mechanisms will improve production changes in the national coffee sector, regarding its climate impacts. This will enable Costa Rica a stronger position in carbon-neutral agriculture products.

The coffee industry, worried about future supply of premium coffee, will be brought in as a major financial partner for NAMA implementation. Co-benefits will include more sustainable energy consumption in milling, increased soil conservation and biodiversity, improve adaptation of coffee production to climate change, cost savings and income diversification of farmers through agro-forestry systems.

The support project will improve the capacities to implement and monitor the political framework for environmentally and climate-friendly economic practices.

The MRV methods will assess the real mitigation achievement. It is estimated that the project will contribute to around 250.000 Tons CO2 mitigation, by direct implementation of mitigation infrastructure and practices.

Component 1: New efficient practices of fertilizer use and low-emission fertilizers are implemented in coffee sector (indicator: 50% of total number of total producers)

Component 2: Agroforestry systems (PSA) are promoted to coffee farmers. (Indicator: 7.500 coffee ha with shadow trees)

Component 3: Coffee processors have implemented new low carbon technologies reducing GHG emissions, eg energy efficiency, biomass aerobic treatment of residues (pulp) and wastewater. (indicator: 25% of total number of total number of mills or 75% of total number of great mills)

Component 4: MRV system is applied (Indicator: 30% of coffee farmers and mills or 100% of support project partners).

Component 5: Access to markets for low-carbon coffee is improved and financial incentives for low-emission production practices are in place.

## I Other relevant information

### I.1 Other relevant information including co-benefits for local sustainable development

Socio-economic Co-benefits: such as cost savings, income diversification and capital building on farmers level, higher yields and earnings through increased soil fertility and less vulnerable soils, ecological competitiveness on regional/international markets through a certified carbon-neutral coffee trademark; maintenance of the level of employment: up to 150,000 jobs during harvest.

At all, 52,787 coffee producers, 184 coffee mills (organized in cooperatives or private companies) are maintaining the coffee sector as an important export sector: actually about 9.2% of national exports. NAMA Coffee will impact the standard of living of more than 400,000 people; and possibly improving its international image through climate change actions.

Ecological Co-benefits: such as reduction of eutrophication through improved wastewater management and reduced fertilizer use, more sustainable energy consumption in milling activities, increased soil conservation and biodiversity, improved adaptation capacity of the coffee farms to climate change through spread of agro-forestry systems etc.

Institutional Co-benefits: The NAMA support project will improve the capacities of relevant Costa Rican stakeholders to design, finance, implement and monitor NAMAs (in the coffee sector in specific and in general), and it will improve the political framework for inducing environmentally and climate-friendly economic practices. In addition to the direct benefits on the

institutional and political level, the support project will contribute to low emission institutional development.

## J Relevant National Policies strategies, plans and programmes and/or other mitigation action

### J.1 Relevant National Policies

The political-institutional framework is provided by the National Development Plan (PND), a National Strategy on Climate Change (ENCC), a Carbon-Neutral Country Program (Programa País Carbono Neutralidad), and a specific framework "State Policy for Climate Change in Agriculture and Food". The Ministry of Agriculture and Livestock recently issued, in 2011, the State Policy for the Agriculture and Livestock Sector and Costa Rican Rural Development 2010-2021, in which one of four pillars established is Climate Change and Agroenvironmental Management. The agricultural sector is defined as priority in the Climate Change Action Plan (2012). The Coffee NAMA Steering Committee (Mesa Café) is the existing project management unit to link strategies with concrete implementing actions. A mechanism for payment for environmental services in agroforestry systems (Coffee PSA-SAF), as well as a recognition system for environmental agricultural services are already established, and could leverage incentives for implementing Coffee NAMA. The Carbon Neutral Country Program will determine the reference level for MRV, participation criteria for interested organizations and monetary transfers based on reduction plans and compensation options. The Costa Rican government has recently approved a budget of around 40 million USD for the coffee sector, of which a big part can also be used for mitigation actions. The Costa Rican government is developing a National Carbon Market, including advances in mechanisms for carbon neutral operations certification and Costa Rican carbon credits production. The Agriculture and Livestock sector is a potential producer of Costa Rican Carbon Units (UCC's) through carbon capture and low emission production practices, or as a potential buyer of UCC's if interest to certify operations as carbon neutral through market incentives existed.

1) The BMU/ GIZ Project "Implementing National Strategy for Climate Change/Niedrigemissionsland Costa Rica" has supported the whole preparation process of the NAMA-Café, including the development and presentation of the NAMA concept note, suggestion of MRV methods and NAMA contents, etc. The NAMA support project will build on these activities.

2) The experiences of the project EC-LEDS on measurement methods for GHG inventories might also be used for the further development of the MRV system, at the same time its support to the agriculture sector in general and to the transport sector creates possibilities for synergies and exchange on NAMA implementation issues.

3) The Low Emissions Capacity Building Programme (LECB) works in Costa Rica specifically in Livestock and Transport,

financed with resources from the European Union, Germany and Spain.

3) The Multilateral Investment Fund (FOMIN) of the IADB currently finances a small pilot project implemented by Fundecooperación for the development and testing of GHG-efficient farming practices and MRV methods for coffee sector. The proposed support project will continue and scale up the experiences of this project.

4) A World Bank/PMR – Partnership for Market Readiness Project supports the setup of a national compensation market. The PMR project aims to elaborate and implement important financing mechanisms that might leverage future investments also in the coffee sector. The proposed NAMA support project will cooperate closely with PMR.

5) A program financed by the national budget (Fidecomiso Café) invests in the coffee sector to tackle climate-change related plant diseases, and the extension services supported under the NAMA support Project will be designed in a complementary manner to this program.

J.2 Link to other NAMAs

K Attachments

K Attachments

Title	Description
Giz-Ing.pdf	
NF_Low Carbon Coffee Costa Rica_support letter	
Fundecooperacion.pdf	
NF_Low Carbon Coffee Costa Rica_support letter	
GIZ.pdf	

K.1 Attachment description

K.2 File

 

L Support received

L.1 Outside the Registry

L.2 Within the Registry

Support provided	SupportType	Amount	Comment	Date
Inter-American Development Bank (IDB)- Support for the design, development and implementation of NAMAs in the LAC region	Financial			5/6/2015 8:09:14 PM