

Climate-Smart Agriculture in Colombia

Supplementary material

This publication is a product of the collaborative effort between the International Center for Tropical Agriculture (CIAT), the lead Center of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS); the Tropical Agricultural Research and Higher Education Center (CATIE); and the World Bank to identify country-specific baselines on CSA in seven countries in Latin America: Argentina, Colombia, Costa Rica, El Salvador, Grenada, Mexico, and Peru.

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Contents

Annex I: Acronyms.....	2
Annex II: Economic relevance of agriculture in Colombia.....	4
Annex IV: Top production system methodology.....	8
Annex V: Climate smartness methodology.....	10
Annex VI: Detailed smartness assessment for ongoing CSA practices in Colombia.	13
Annex VII: Use of International Climate Smart Funding in Colombia.....	15

This Supplementary Material is in support of the Climate-Smart Agriculture in Colombia profile within the Country Profiles for Latin America Series. The annexes below are references where relevant in the text. The Supplementary Material cannot and should not be read in isolation. It can only be read in association with the chapter.

Annex I: Acronyms

AF	Adaptation Fund
BANAGRARIO	Agricultural Bank
BANCOLDEX	Business Development Bank
CARs	Autonomous Regional Corporations
CCAFS	Climate Change, Agriculture and Food Security Research Program
CDCF	Community Development Carbon Fund
CDM	Clean Development Mechanism
CENICAFE	International Coffee Research Center
CENICAÑA	Research Centre for Sugarcane
CENIPALMA	Research Centre for Oil Palm)
CIAT	International Center for Tropical Agriculture
CICF	Conservation International Carbon Fund
CIF	Forestry Incentive Certificate
CIPAV	Center for Research on Sustainable Farming Systems
CLCDS	Colombian Low Carbon Development Strategy
CONPES	National Council for Social and Economic Policy
CORPOICA	Colombian Corporation of Agricultural Research
CSA	Climate Smart Agriculture
CTF	Clean Technology Fund
DCF	Danish Carbon Fund
DNP	National Planning Department of Colombia
ENSO	El Niño-Southern Oscillation
EN-REDD+	National Strategy for Reducing Emissions from Deforestation and degradation
FAO	Food and Agriculture Organization of the United Nations
FCPF	Forest Carbon Partnership Facility
FEDEARROZ	Rice Producers Federation of Colombia
FEDEGAN	National Federation of Cattlemen of Colombia
FENALCE	National Federation of Producers of Cereals and Legumes
FINAGRO	Fund for financing the Agricultural sector
FONTAGRO	Regional Fund for Agricultural Technology
FUNDESOT	Foundation for Sustainable Territorial Development
GAP	Good Agricultural Practices
GCF	Green Climate Fund
GDP	Gross domestic product
GEF	Global Environment Facility
GHG	Greenhouse Gases
ICA	Colombian Agricultural Institute
IDB	Inter-American Development Bank
IDEAM	Institute of Hydrology, Meteorology and Environmental Studies of Colombia
IIAvH	Research Institute of Biological Resources Alexander Von Humboldt
IKI	Germany's International Climate Initiative
LAC	Latin America and the Caribbean
LDCF	Least Developed Countries Fund
MADR	Ministry of Agriculture and Rural Development of Colombia
MADS	Ministry of Environment and Sustainable Development of Colombia
MRV	Monitoring, reporting and verification

Mt CO ₂ -eq	Megatons of Carbon Dioxide (equivalent)
NAMAs	Nationally Appropriate Mitigation Actions
NAP	National Adaptation Plan
NCDMF	The Netherlands Clean Development Mechanism Facility
NDF	Nordic Development Fund
NGO	Non-governmental organization
NORAD	Norway's International Climate and Forest Initiative
NP	Natural Patrimony
OECD	Organization for Economic Co-operation and Development
PES	Payment for Ecosystem Services
PNACC	Climate Change National Adaptation Plan
PNN	National Natural Parks of Colombia
R&D	Research and development
REDD	Reduced Emissions from Deforestation and Forest Degradation
RNCC	Regional Nodes on Climate Change
SCCF	Special Climate Change Fund
SDF	Special Development Fund
SINA	National Environmental System
SINCHI	Amazon Institute of Scientific Research
SISCLIMA	National System of Climate Change
SRES	IPCC Special Reports on Emissions Scenarios
SPS	Silvopastoral systems
UK-DECC	Department of Energy and Climate Change of the United Kingdom
UNAL	National University of Colombia
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Programme for Reducing Emissions from Deforestation and Forest Degradation
USAID	United States Agency for International Development
WB	The World Bank

Annex II: Economic relevance of agriculture in Colombia

In Colombia, 6% of the national GDP can be attributed to agriculture (The World Bank, 2012). Trends show that in the last years (2009-2012) the agricultural GDP has been increasing. This trend is partly due to the agricultural sector's continuing recovery from the fall of coffee prices on the global market in 2008 and the consequences of 'La Niña' in 2006-2007 and 'El Niño' in 2010-2011. The highest growth recorded in the past five years was 2.6%. In 2012, high yields were recorded for short-cycle crops such as maize, potatoes, barley, and tobacco, and some perennial crops such as fruit trees, palms, flowers, and sugarcane. The livestock sector also experienced growth in milk production, poultry, and pork (MADR, 2013).

Exports of agricultural and agro-industrial sector (raw and processed) goods contributed to 3% of the total tonnage exported (more than 4 million tons) and represented 11% (USD6.574 million FOB¹) of the total value of national exports in 2012 (MADR, 2013). The value of agriculture exports remained stable between 2008 and 2012 (Table 1).

Table 1 Value of agricultural exports in Colombia

Products	Millions of USD FOB							
	2008	2009	2010	2011	2012	Var% 2011/2012	Average	Average Participation (2008-2012)
Coffee	1917	1575	1914	2658	1956	-26.4	2004	31%
Flowers	1094	1049	1240	1251	1270	1.5	1181	19%
Banana & Plantain	648	831	743	810	813	0.4	769	12%
Sugar	152	379	448	590	482	-18.3	410	6%
Beef (Fresh and Frozen)	749	593	7	22	44	100.0	283	4%
Palm and Almond Oil	359	160	115	254	236	-7.1	225	4%
Frozen Fish	191	170	142	148	144	-2.7	159	2%
Cocoa	77	66	72	78	73	-6.4	73	1%
Fruits (except banana)	60	55	56	64	59	-7.8	59	1%
Vegetables	98	40	13	15	12	-20.0	36	1%
Others (<1% participation)	1291	1025	977	1134	1485	31.0	1182	19%
Total	6636	5943	5727	7024	6574	-6.4	6381	100%

Source: DANE-DIAN, 2012

The most important products exported by value were coffee (31%), flowers (19%), banana and plantain (12%), sugar (6%), and beef (4%). The main recipients of agricultural products in the period 2008-2012 were Europe and United States of America (MADR, 2013).

Agricultural and agro-industrial imports constituted 10.7% (USD\$6,251 million CIF²) of the total value of national imports in 2012, equal to 9.8 million tons (MADR, 2013). The most important agricultural products imported by value were maize (38%), wheat (16%), soybean as meal for livestock feed (11%), sorghum (4%), and barley (3%). Imports were sourced mainly from the USA and Argentina (MADR, 2013).

¹ FOB: Free on Board

² CIF: Cost, Insurance and Freight - The price includes insurance and all other charges up to the named port of destination.

The total value of agricultural imports was on average (2008-2012) USD\$4,720 million CIF, with an increasing trend over the years (Table 2).

Table 2 Value of agricultural imports in Colombia.

Products	Millions of USD CIF							Average Participation (2008-2012)
	2008	2009	2010	2011	2012	Var% 2011/2012	Average	
Maize	935	671	806	927	1,078	16.3	883	19%
Wheat	532	342	365	540	504	-6.7	457	10%
Soy	119	142	156	152	171	12.5	148	3%
Sorghum	33	38	32	125	152	21.6	76	2%
Barley	117	65	65	86	96	11.6	86	2%
Rice	20	58	5	26	85	226.9	39	1%
Others (<1% participation)	2,475	2,246	2,765	3,506	4,165	18.8	3031	64%
Total	4,231	3,562	4,194	5,362	6,251	16.6	4720	100%

Source: MADR, 2013

According to FAOSAT data (2004-2006), the crops with the highest net production value in the country are (in descending order): sugarcane, coffee, rice, bananas, plantains, oil palm, potatoes, and maize.

In Colombia, the net production value of the livestock (meat & milk) sector is US\$5,703,006, a value 5 times larger than the NPV of any other production system in the country.

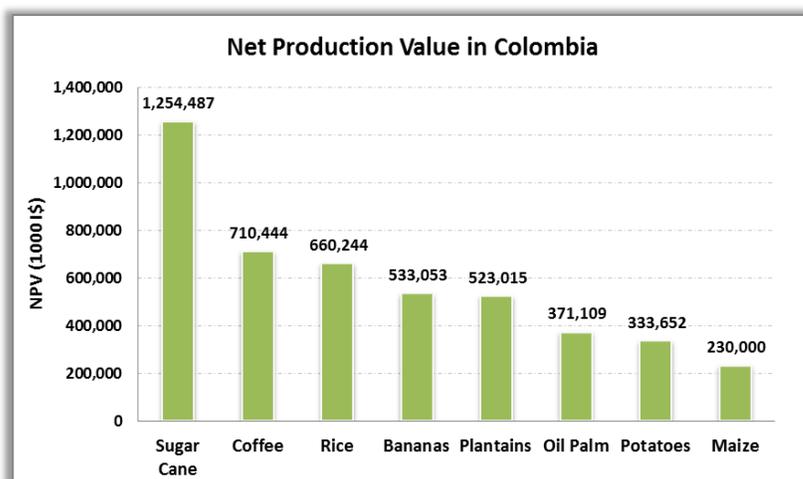


Figure 1 Net Production Value (NPV) per Crop (constant 2004-2006 x1000I\$). Source: FAOSTAT

References:

The World Bank. 2012. World Development Indicators. Washington, D.C.: The World Bank. (Available from <http://data.worldbank.org/data-catalog/world-development-indicators>) (Accessed on 2 April 2014)

MADR. 2013. Memorias al congreso de la Republica: Ministro Juan camilo Restrepo Salazar (Agosto 2010-Mayo 2013). Bogotá: Ministerio de Agricultura y Desarrollo Rural de la Republica de Colombia.

FAOSTAT. 2012. Net production value per crop from South America. Rome: FAO.

Annex III: Land-use change in Colombia

As shown in Figure 2, the Caribbean region of Colombia is known for having the most suitable land for agriculture and, alternatively, semi-intensive livestock. The main crops in this region are cotton (especially in the valleys of the Sinu River and Cesar), plantain, and banana (in the Uraba region of Antioquia), African palm (in the mid-stream part of the Magdalena River), and rice (on the Atlantic Coast). Semi-intensive farming can be found in the departments of Magdalena, Cesar, and Sucre, as well as in the center and north of Córdoba.

In the Pacific region, agricultural activities are carried out by indigenous and mestizo communities who cultivate subsistence crops. Commercial crops in monoculture, such as oil palm (Nariño department), are found to a lesser extent. Gold, silver and platinum mining is a labor-intensive activity in the region. Logging accounts for more than half of domestic production but also for high deforestation rates. Fishing is also a representative activity of the Pacific region.

The Andean region is characterized by subsistence agriculture practiced on hillsides. Predominant crops are plantain, cassava, corn, fruit, and vegetables. Coffee crops are important for the departments of Antioquia, Caldas, Risaralda, Quindio, Tolima, and Cundinamarca. The departments of Valle del Cauca, Tolima, and Huila are well known for sugarcane, soybeans, rice, and sorghum production using a high degree of mechanization. Livestock and cut flower (for export) agribusinesses predominate in the high plateaus of Bogotá and Rio Negro .

The Orinoquía region is known for subsistence farming in the plains and agroindustrial activities (cultivation of rice, sorghum, soybeans, cotton, and oil palm) developed in the foothills and alluvial terraces of Meta and Casanare. Livestock production is practiced in Arauca, Meta, and Casanare and involves the use of large areas of land and little labor. Logging is related to the exploitation of fine woods in the foothills, Andean forests and gallery forests on the plain. Fishing is practiced mainly for subsistence and for meeting local and regional demand.

Lastly, the Amazon region is home to the country's largest forest area. It registers the highest deforestation rates in the country, especially in the departments of Caquetá, Meta, and Guaviare where around 46% of the country's total forest losses are registered. According to the Institute of Hydrology,

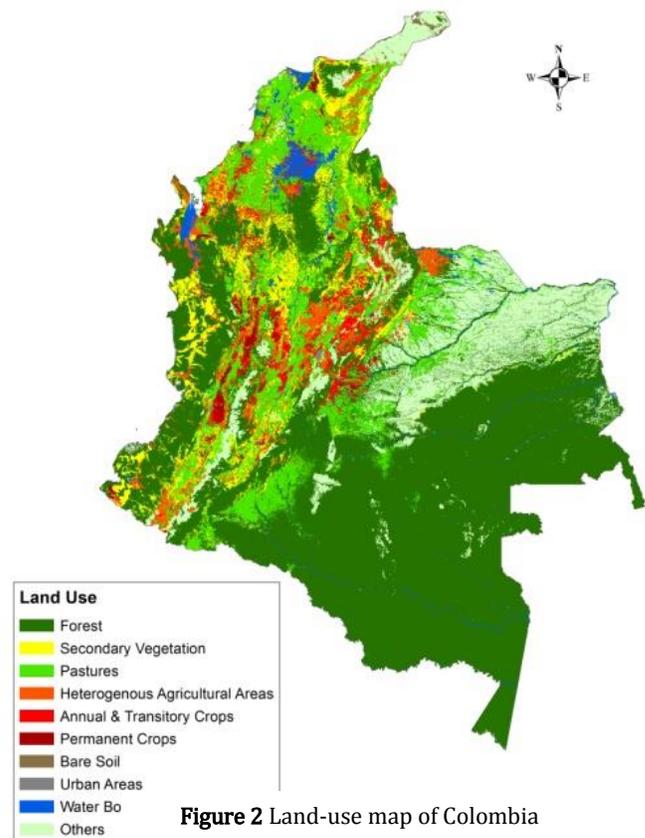


Figure 2 Land-use map of Colombia

Meteorology and Environmental Studies of Colombia (IDEAM), the average national deforestation rate was 147,946 ha/year for 2011 - 2012. Drivers of deforestation include expansion of livestock activities, expansion of colonization fronts of illicit crops (particularly coca), illegal logging, and illegal mining.³

References:

IGAC. 2010. Mapa de Cobertura de la tierra en Colombia. Proyecto sistema de informacion geografica para la planeacion y el ordenamiento territorial (SIGOT). Bogotá: Instituto Geográfico Agustín Codazzi.

³ “Nueva tasa oficial de deforestación: Colombia reduce su deforestación 147.946 hectáreas anuales”, 5 de Agosto de 2013. Ministerio de Ambiente y Desarrollo Sostenible e Instituto de hidrología, meteorología y estudios ambientales de Colombia.
<http://www.minambiente.gov.co/contenido/contenido.aspx?catID=1367&conID=8914>

Annex IV: Top production system methodology

Livestock, sugarcane, coffee, rice, plantain, maize, and potato are considered the most important production systems in Colombia, given their contribution to the country's economic development and food security. Livestock (beef and cow milk) contributes significantly to the country's agricultural GDP and land use. Rice, maize, potato, and plantain crops are cultivated mainly by smallholders and contribute significantly to national food security and the country's economy.

Coffee production (all stages) is essential for the livelihoods of more than 300,000 farmers and provides jobs for over 2 million people. In terms of economic importance, bananas and plantains are also highly relevant crops (second after coffee) and they predominate in the southern Caribbean coast (around the Urabá gulf) on both large export plantations and small plots for domestic consumption.

Maize is planted in rotation with cotton and/or rice in the Caribbean Region, Orinoquía region, and inter-Andean valleys. These regions are sown to an average of 250,000 hectares of maize per cycle.

The country is the second largest rice producer in Latin America. (The World Bank, 2012). Rice is planted in Tolima, Huila, Cauca Valley, Meta, Casanare, Santander, Cesar, Córdoba, and Bolivar. These regions are sown to an average of 293,000 hectares of rice per cycle. Rice ranks first among short-cycle crops in terms of its importance to Colombia's economy.

Potato is a crop predominantly cultivated by smallholders and is essential for food security. Moreover, it represents 32% of transitory crops. Almost 90,000 farmers are potato growers and around 20 million jobs are generated annually from potato production.

Sugarcane is planted in the northern part of the Cauca department, the central strip of the Cauca Valley, and the south of the Risaralda department. Sugarcane is a major contributor to ethanol production in Colombia. Colombia currently blends all gasoline to include 10% ethanol in an effort to reduce gasoline consumption and promote renewable energy technologies (PNUD, 2010).

Table 3 Selection of top products for economic development and food security

Selection Criteria	20%	20%	20%	20%	20%	100%	Ranking
Crops in Colombia	Net Prod Value (1000 I\$)	%Nat GDP	Food Supply (Kcal/capita/day)	Harvested Area	Variation of Production	Total	
Sugar Cane	1,254,486.82	0.469	0	397,842.80	0.07	330,466	2
Coffee	710,444.19	0.328	3	777,616.00	0.18	297,613	3
Rice	660,244.01	0.356	320	434,400.40	0.16	218,993	4
Bananas	533,053.74	0.322	10	71,182.20	0.01	120,849	8
Plantains	523,015.98	0.351	120	523,015.98	0.09	209,230	5
Oil Palm	371,109.01	0.237	143	165,912.80	0.12	107,433	9
Potatoes	333,652.58	0.192	68	333,652.58	0.14	133,475	7
Maize	230,000.00	0.130	350	602,247.40	0.10	166,520	6
Cassava	174,176.23	0.124	67	171,311.20	0.09	69,111	11
Tomatoes	173,260.62	0.133	6	173,260.62	0.12	69,305	10
Pineapples	112,440.21	0.067	6	112,440.21	0.19	44,977	12
Beans	88,802.73	0.049	29	128,189.80	0.09	43,404	13
Onions	75,822.46	0.047	7	17,083.00	0.15	18,583	15
Cocoa Beans	41,901.12	0.025	4	86,206.60	0.08	25,622	14
Livestock (Meat & Milk)	5,703,006.93	3.6	196	N/A	0.07	1,425,802	1

Source: FAOSTAT, 2012

References:

The World Bank. 2012. World Development Indicators. Washington, D.C.: The World Bank. (Available from <http://data.worldbank.org/data-catalog/world-development-indicators>)

PNUD. 2010. Documento de Discusión Nacional acerca de los asuntos claves en el análisis del sector agricultura (Mitigación). Memorias Diálogo Nacional Interministerial sobre Cambio Climático.

FAOSTAT. 2012. Statistics for Crops and Livestock from South America. Rome: FAO.

Annex V: Climate smartness methodology

Protocol for assessing climate smartness of ongoing and promising practices

The objective of the 'Climate Smart Agriculture Technologies and Approaches for Sustainable Farm Management' section of the CSA Country Profiles is to: a) identify ongoing CSA practices for key production systems in each country; b) assess how 'climate smart' these practice are; c) assess each country's current efforts to achieve 'climate smartness'; and d) identify promising future CSA practices for each country. This document outlines the protocols used for assessing this information.

a) What is climate smartness

CSA practices have different dimensions and levels of 'climate-smartness' (CCAFS, forthcoming; Figure 3), meaning that some practices contribute to mitigation of GHG emissions through carbon management ('carbon smart'), while others might increase water retention ('water smart') and therefore improve resilience. Many practices incorporate multiple dimensions of 'climate-smartness'. For example, Conservation Agriculture increases nutrients in soil ('nitrogen smart') through the incorporation of crop residues on the soil, captures carbon ('carbon smart'), and increases infiltration of water ('water smart'). Other practices, such as improved seeds for climate extremes, help farmers adapt to climate change from a 'knowledge-smart' approach.



Figure 3 Different 'smartness' categories for evaluating CSA practices Sources: (Aggarwal et al., 2013). Photos: N. Palmer (CIAT), K.Trautmann, V.Meadu and Ron Nichols (USDA)

b) Types of climate smartness

The following are key questions that help assess the smartness of different practices:

✚ **Weather**

Does the CSA practice *reduce climate - related risks (droughts, floods, etc.)?*

✚ **Water**

Does the CSA practice *enhance water availability?*

Does the CSA practice *enhance water use efficiency?*

✚ **Carbon**

Does the CSA practice *enhance soil carbon stock?*

Does the CSA practice *reduce Carbon emissions?*

✚ **Nitrogen**

Does the CSA practice *enhance soil N stock?*

Does the CSA practice *reduce Nitrogen based gases emissions?*

✚ **Energy**

Does the CSA practice *promote energy use efficiency?*

Does the CSA practice *promote alternative energy use?*

✚ **Knowledge**

Does the CSA practice *promotes local knowledge and social networks for increasing producers' adaptive capacity to climate change*

Methodology for the identification of ongoing CSA practices

The identification of ongoing and promising CSA practices has been carried out in several stages:

- Development of a list of CSA practices building on the FAO Sourcebook (FAO, 2013) (See Annex 1, Survey document).
- Review of literature to identify in-country ongoing CSA practices documented in peer-reviewed literature.
- Interviews and/or long surveys⁴ with technical experts related to the main production systems identified and/or regional experts in order to pinpoint:
 - practices that are currently being implemented in the country and associated with the main production system
 - the geographical and agro-ecological region they are associated with
 - an estimate of the adoption rate (from total agricultural land) of the practice
 - actors and institutions engaged in the implementation of the practice
 - practices that have not been mentioned previously/ implemented in the country but could be applicable to specific agro-ecological areas
 - Opportunities and barriers to adoption related to existing and promising practices.
- Development of a short baseline survey that was sent to key experts in the main production systems in the country to gather a list of CSA practices (existing and promising) in the country.

Only a few of the practices from this master list of CSA practices were selected for further investigation. They related to the main production systems identified in the country (See Annex IV) based on the following criteria:

⁴ Where in-person meetings were not possible, the author conducted expert surveys

- (1) *Adoption rate* - practices that were mentioned most often during interviews and the baseline survey.
- (2) *Impact on CSA pillars* - practices that have a high impact on productivity + adaptation, productivity + mitigation), identified via the detailed survey.
- (3) *Climate-smartness effort* - practices that have the highest overall climate-smartness scores, according to expert assessments (long survey).

d) Methodology for the evaluation of country level efforts towards climate smartness

Identifying current adoption rate of a certain CSA practice

Research informants were asked to estimate the adoption rate of the practice based on the following scale (some country specific modifications were necessary):

- 5 = Very High (81-100%)
- 4 = High (61-80%)
- 3 = Medium (41-60%)
- 2 = Low (21-40%)
- 1 = Very low (1-20%)
- 0 = Not adopted

Evaluating the climate smartness of certain CSA practices

For the assessment of the relationship between a CSA practice and the smartness categories (i.e. the potential impact of the CSA practice on the total climate smartness score), a simple scale of 0 to 5 was used as illustrated in Table 4 below:

Table 3 Scale to measure the potential impact of a CSA practice

Value	Potential impact
5	The CSA practice has a Very High positive impact on the overall climate smartness score
4	The CSA practice has a High positive impact on the overall climate smartness score
3	The CSA practice has a Medium positive impact on the overall climate smartness score
2	The CSA practice has a Low positive impact on the overall climate smartness score
1	The CSA practice has a Very low positive impact on the overall climate smartness score
0	The CSA practice has not impact on the overall climate smartness score
-	No information

References:

- Aggarwal P, Zougmore R and Kinyangi J. 2013.** Climate-Smart Villages: A community approach to sustainable agricultural development. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Available online at: www.ccafs.cgiar.org
- Food and Agriculture Organization of the United Nations. 2013.** Climate-Smart Agriculture: Sourcebook. Rome, Italy: FAO.

Annex VI: Detailed smartness assessment for ongoing CSA practices in Colombia.**Table 4** Evaluation of climate smartness of identified agricultural practices

Practice	Production Systems	Percentage of Adoption	Climate Smartness						Average
			Water	Carbon	Nitrogen	Energy	Weather	Knowledge	
Conservation Agriculture	Potato	10%	5	4	5	4	5	5	4.7
Agroforestry Plantain	Plantain-Cacao	25%	5	5	5	4	4	5	4.7
Companion planting	Plantain	No Information	4	5	5	3	5	5	4.5
Companion planting	Maize/Fruits/Coffee	No Information	4	5	5	3	5	5	4.5
Reduce residue burning	Sugar Cane	No Information	5	5	3	4	5	5	4.5
Agroforestry	Coffee	50%	5	5	5	3	4	5	4.5
Green Manure	Potato (Green Manure species are: oats, rye, Colsa, mustard, sunflower)	10%	4	4	4	N/A	5	5	4.4
Heat-tolerant varieties	Rice	62%	3	N/A	N/A	N/A	5	5	4.3
Silvopastoral systems	Livestock	10%	4	5	4	3	5	4	4.2
Soil Management	Rice	30%	5	4	4	3	5	4	4.2
Intercropping	Coffee-Maize	10%	4	4	5	3	4	5	4.2
Conservation Agriculture	Pastures for Livestock, Maize, Beans, vetch	30%	4	4	4	4	4	4	4.0
Efficient management of Water	Rice	35%	5	2	4	3	5	4	3.8
Efficient use of fertilizer	Rice	No Information	3	3	5	4	4	4	3.8
Crop Rotation	Potato-Vegetables (Onion, Carrots)	20%	3	4	5	2	4	5	3.8
Accurate irrigation scheduling	Rice	30%	5	N/A	N/A	2	4	4	3.8
Good Agriculture Practices	Plantain	35%	4	3	3	4	3	5	3.7
Efficient management of Water	Maize	40%	5	2	3	3	5	4	3.7
Soil Management	Maize/Cotton	50%	4	4	3	3	4	4	3.7
Pest- and disease- resistant varieties	Coffee	80%	N/A	N/A	N/A	3	4	4	3.7
Grass-legumen associations	Livestock	10%	4	4	5	2	4	3	3.7
Companion planting	Silvopastoral Systems- Sugar Cane	5%	3	4	4	3	4	4	3.7
Pest and diseases management	Plantain	50%	2	N/A	N/A	4	N/A	5	3.7
Border planting in Livestock	Livestock	15%	2	5	3	N/A	5	3	3.6
Drip irrigation/fertigation, water pumps	Cereals/Legumens	40%	5	3	N/A	3	4	3	3.6
Improved pastures	Livestock	25%	4	4	4	2	4	3	3.5
Good practices in livestock	Livestock	30%	3	4	4	3	2	5	3.5
Efficient management of Water	Sugar Cane	10%	5	2	N/A	2	4	4	3.4
Good Agricultural Practice	Coffee	40%	4	2	2	4	3	5	3.3
Pest and diseases management	Rice	10%	N/A	N/A	N/A	3	3	4	3.3
Soil Management Plantain	Plantain	40%	4	3	3	3	3	4	3.3
Biofertilizers	Beans / Soybean	20%	3	4	3	3	4	3	3.3
Silage, haylage and nutritional blocks	Livestock	10%	3	N/A	N/A	4	N/A	3	3.3
Pest- and disease- resistant varieties	Sugar Cane	60%	3	N/A	N/A	3	3	4	3.3
Efficient use of fertilizer	Plantain	30%	N/A	N/A	4	3	2	4	3.3

Practice	Production Systems	Percentage of Adoption	Climate Smartness						
			Water	Carbon	Nitrogen	Energy	Weather	Knowledge	Average
<i>Genetic Resources Sugar Cane</i>	Sugar Cane	80%	3	N/A	N/A	3	3	4	3.3
<i>Improved cookstoves</i>	Coffee	10%	3	N/A	N/A	3	2	5	3.3
<i>Direct seeding</i>	Legumens	30%	3	4	N/A	4	2	3	3.2
<i>Efficient use of fertilizer</i>	Coffee	40%	2	3	4	2	4	4	3.2
<i>Composting</i>	Coffee	30%	2	3	3	3	3	3	2.8
<i>Meteorological advisories</i>	Most important production systems in Colombia	30%	2	2	2	2	5	3	2.7
<i>Urban Agriculture in Bogota</i>	Vegetables and Aromatic Plants, and animals	5%	2	3	2	3	3	3	2.7
<i>Genetic Resources Maize</i>	Maize/Cotton	12%	N/A	3	2	N/A	N/A	3	2.7
<i>Rotational grazing</i>	Livestock	10%	3	2	4	3	N/A	1	2.6
<i>Beneficial organisms</i>	Legumens / other crops	10%	2	2	4	3	1	3	2.5
<i>Improved forages-based feeding</i>	Livestock	10%	N/A	3	2	3	1	1	2.0

Source: Author's compilation, based on literature review and interviews to Producers Associations: FENALCE, FEDEPAPA, FEDEARROZ, FEDEGAN and FUNDESOT.

Annex VII: Use of International Climate Smart Funding in Colombia.

Table 5 Funds applicable to CSA

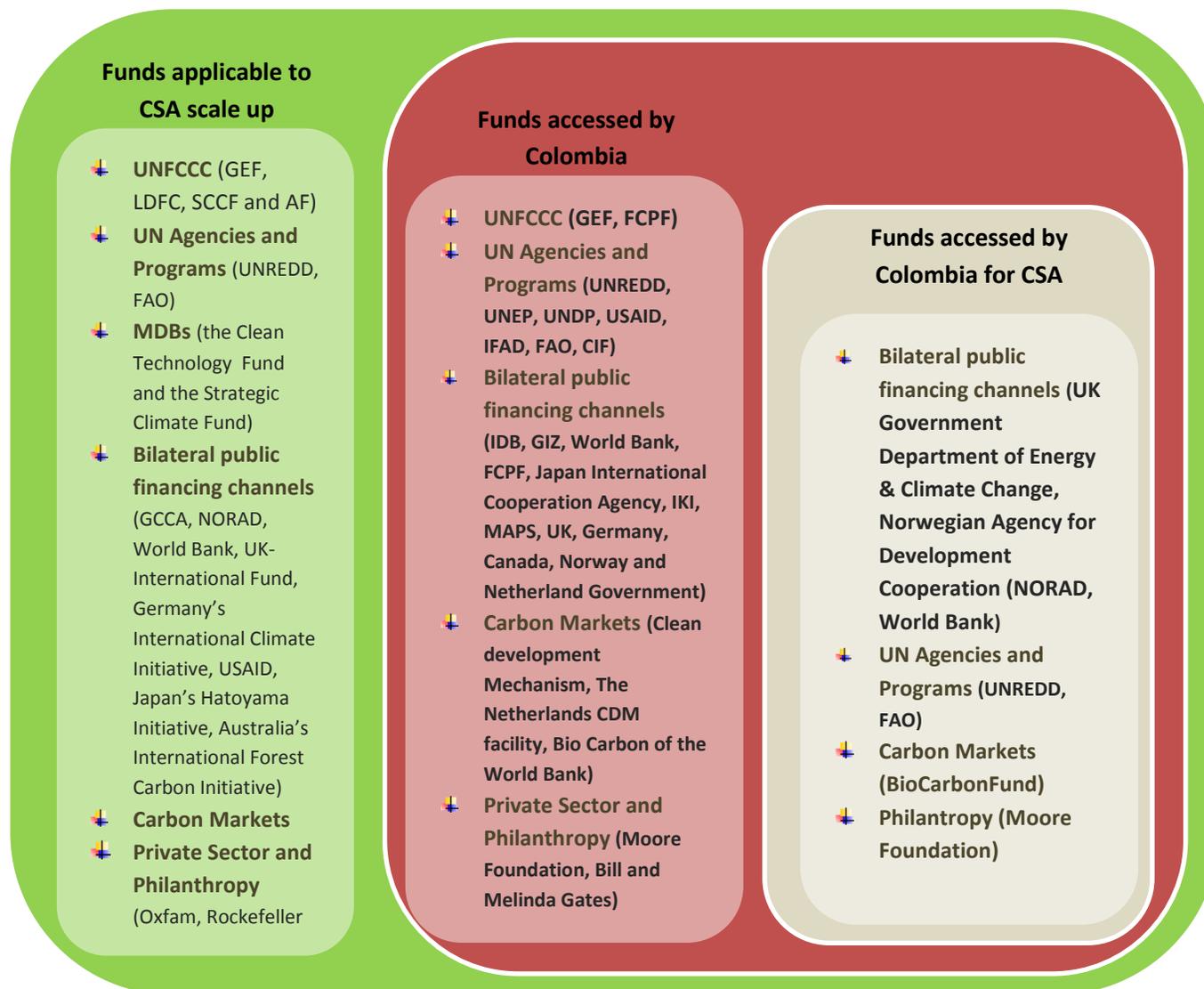


Table 6 Use of international Climate Smart Funding in Colombia

Category	Indicative list of Names of institution and Funds (all address cc adaptation and mitigation)	Objective of fund (adaptation, blended, conservation, development, agriculture development, mitigation through energy, mitigation through land use, sustainable agriculture and watershed management)	Has country accessed them for productivity and Mitigation or Adaptation in agriculture?	Name of Project	Grant	Sectors being targeted (fishing, forestry, livestock, agriculture, landscape)
1. UN Agencies and Programs	UN REDD+ Programme	Mitigation	Yes	UN-REDD Programme	US\$4 million	Forestry
	UNEP	Conservation	Yes	Assessment of Capacity Building Needs and Country Specific Priorities in the Conservation of Biodiversity, and Participation in the National Clearing House Mechanism -	US\$144,900 (GEF Grant) + US\$26,280 (Cofinancing)	Biodiversity
	UNEP	Conservation	Yes	National Capacity Needs self-Assessment for Global Environmental Management	US\$147,350 (GEF Grant) + US\$33,000 (Cofinancing)	Biodiversity
	UNDP	Adaptation and Mitigation	Yes	Third National Communication to the UNFCCC	US\$2,000,000 (GEF Grant) + US\$1,682,000 (Cofinancing)	Climate Change
	UNDP	Adaptation	Yes	Mainstreaming Traditional Knowledge Associated with Agrobiodiversity in Colombian Agroecosystems	US\$2,500,000 (GEF Grant) + US\$5,130,000 (Cofinancing)	Agriculture and Biodiversity
	UNDP	Mitigation through energy	Yes	Energy Efficiency Standards and Labels in Colombia (S&L Colombia)	US\$2,500,000 (GEF Grant) + US\$7,500,000 (Cofinancing)	Energy
	UNDP	Adaptation and Mitigation	Yes	Conservation and Sustainable Use of Biodiversity in Dry Ecosystems to Guarantee the Flow of Ecosystem Services and to Mitigate the Processes of Deforestation and Desertification	US\$8,787,000 (GEF Grant) + US\$39,460,200 (Cofinancing)	Landscape and Forestry
	UNDP	Adaptation	Yes	Reducing Risk and Vulnerability to Climate Change in the Region of La Depresion Momposina in Colombia	US\$8,518,307	Disaster Risk Reduction
	IFAD	Food Security	Yes	Building Rural Entrepreneurial Capacities		
	FAO-GEF	Conservation	Yes	Implementing the Socio-Ecosystem Connectivity Approach to Conserve and Sustainable Use Biodiversity in the Caribbean Region of Colombia	US\$6,052,110 (GEF Grant) + US\$20,370,400 (Cofinancing)	Biodiversity
	FAO	Adaptation, Mitigation and Productivity	Yes	Uso del Modelo "AQUACROP" para estimar rendimientos agrícolas en Colombia, en el Marco del Estudio de Impactos Económicos del Cambio Climático (EIECC).		Agriculture
	ECLAC	Adaptation, Mitigation	N/A			
	Cimate Investment Funds-CIF (Clean Technology Fund)	Mitigation	Yes	Energy Efficiency Program for the San Andres, Providencia, and Santa Catalina Archipelago	USD 580,000	Energy
	CIF and IDB	Mitigation	Yes	Sustainable Energy Finance (IDB and IFC)	USD 17.5 million	Energy
Global Environment Facility (GEF)	Mitigation	Yes				

Category	Indicative list of Names of institution and Funds (all address cc adaptation and mitigation)	Objective of fund (adaptation, blended, conservation, development, agriculture development, mitigation through energy, mitigation through land use, sustainable agriculture and watershed management)	Has country accessed them for productivity and Mitigation or Adaptation in agriculture?	Name of Project	Grant	Sectors being targeted (fishing, forestry, livestock, agriculture, landscape)
2. UNFCCC Funds	Special Climate Change Fund (SCCF)	Adaptation, Mitigation	N/A			
	Adaptation Fund (AF)	Adaptation	N/A			
	Green Climate Fund (GCF)	Adaptation, Mitigation	N/A			
	Forest Carbon Partnership Facility (FCPF)	Adaptation, Mitigation	Yes	REDD+ Country Participants		
3. Multilateral	Scaling-Up Renewable Energy in Low income countries	Mitigation	N/A			
	Forest Investment Programme (FIP): REDD+	Adaptation, Mitigation	N/A			
	Pilot Program for Climate Resilience	Adaptation	N/A			
	Interamerican Development Bank	Adaptation, Mitigation	Yes	Mechanism for Voluntary Mitigation of Greenhouse Gas Emissions in Colombia	US\$2,700,000 (GEF Grant) + US\$7,616,000 (Cofinancing)	Climate Change
	Interamerican Development Bank	Adaptation, Mitigation	Yes	Catalytic Investments for Geothermal Power	US\$2,727,000 (GEF Grant) + US\$192,900,000	Energy
	Interamerican Development Bank	Conservation	Yes	Sustainable Management and Conservation of Biodiversity in the Magdalena River Basin	US\$6,363,640 (GEF Grant) + US\$25,000,000 (Cofinancing)	Biodiversity
	Interamerican Development Bank	Adaptation, Mitigation	Yes	Adaptation to Climate Impacts in Water Regulation and Supply for the Area of Chingaza - Sumapaz - Guerrero	US\$4,215,750 (GEF Grant) + US\$23,000,000 (Cofinancing)	Water
	Interamerican Development Bank	Adaptation, Mitigation	Yes	Demonstration and Assessment of Battery-electric Vehicles for Mass Transit in Colombia	US\$2,200,000 (GEF Grant) + US\$29,900,000 (Cofinancing)	Energy
	Interamerican Development Bank	Conservation	Yes	Consolidation of the National System of Protected Areas(SINAP) at National and Regional Levels.	US\$4,157,000 (GEF Grant) + US\$15,650,000 (Cofinancing)	Forestry Conservation
	IFC	Adaptation, Mitigation	N/A			
	Forest Carbon Facility (FCPF)	Mitigation, Conservation	N/A			
	World Bank Bio Carbon Fund	Adaptation, Mitigation	N/A			
World Bank	Adaptation, Mitigation	N/A				

Category	Indicative list of Names of institution and Funds (all address cc adaptation and mitigation)	Objective of fund (adaptation, blended, conservation, development, agriculture development, mitigation through energy, mitigation through land use, sustainable agriculture and watershed management)	Has country accessed them for productivity and Mitigation or Adaptation in agriculture?	Name of Project	Grant
4. Bilateral agreements	French Development Agency (environment)	Development, Adaptation, Mitigation, conservation, watershed management	N/A		
	German Development Bank- International Climate United Kingdom International Climate Fund	Adaptation and mitigation Adaptation, Mitigation	N/A N/A		
	Japan International Cooperation Agency	Development	Yes	Natural Forest Management and Sustainable Use Project	Total Amount of Cooperation: 198.066 million ye
	Brazilian Development Bank	Mitigation	N/A		
	China Development Bank	Productivity and mitigation	N/A		
	Global Climate Change Alliance (GCCA)	Adaptation and Mitigation	N/A		
	ACP-EC Energy Facility (EU)	Mitigation-energy	N/A		
	USAID Development Grants Program	Development, Productivity	N/A		
	USAID Feed the future	Agriculture development, sustainable development	N/A		
	Japan's Hatoyama Initiative (Japan's Fast-Start Financing)	Mitigation, adaptation	N/A		
	Australia's International Forest Carbon Initiative	Mitigation	N/A		
	Australia's Aid Program	Sustainable development	N/A		
	Agencia Española para la cooperación y Desarrollo	Sustainable development	N/A		
	Giz (germany)	Sustainable development	N/A		
	Nordic Development Fund	Mitigation, adaptation	N/A		
	Norway (Norwegian Agency for Development and Cooperation)	Mitigation, adaptation	N/A		
	International Climate Initiative (IKI)	Mitigation and Adaptation	Yes	Integrated Planning for Implementing the CBD'S strategic Plan and to Increase the resilience of Ecosystems to the impacts of Climate Change.	€ 3,094,111.95
	International Climate Initiative (IKI)	Mitigation and Adaptation	Yes	Increasing the resilience of the Amazon biome	€ 1,943,446
	Swedish international development cooperation agency	development	N/A		
	French Agency development-water and sanitation	watershed	N/A		
Environment and Sustainable Management of Natural Resources Thematic Programme (ENRTP)	blended	N/A			
Development Cooperation Instrument	Agriculture development	N/A			
UK Government - Department of Energy & Climate Change	Mitigation, Adaptation and Productivity	Yes	Low Carbon Agriculture in Colombia	£15m	
Governments of Germany, Norway and UK	Mitigation	Yes	Supporting Colombia's government with the goal to reach zero net deforestation in the Amazon by 2020.		

Category	Indicative list of Names of institution and Funds (all address cc adaptation and mitigation)	Objective of fund (adaptation, blended, conservation, development, agriculture development, mitigation through energy, mitigation through land use, sustainable agriculture and watershed management)	Has country accessed them for productivity and Mitigation or Adaptation in agriculture?	Name of Project	Grant	Sectors being targeted (fishing, forestry, livestock, agriculture, landscape)
5. Private sector and philanthropy	Overseas Private Investment Corporation	Mitigation	N/A			
	Sustainable Agriculture Initiative Platform	Sustainable agriculture, productivity	N/A			
	Rockefeller Foundation	Adaptation	N/A			
	Cooperative for Assistance and Relief Everywhere	Development	N/A			
	Oxfam	Agriculture development, development	N/A			
	Conservation International	conservation, bundle	N/A			
	The Nature Conservancy	Conservation	N/A			
	Bill and Melinda Gates	agriculture development	Yes	Institutional, Technical and Scientific Capacity to support REDD projects.		Forestry
	The Clinton Foundation	agriculture development, CSA	N/A			
	AXA Real Estate-Forest Investment	mitigation-land use	N/A			
	Climate and Land use alliance	blended	N/A			
	McKnight Foundation International Programme	conservation	N/A			
	Gatsby charitable foundation	development	N/A			
	SHARE Agriculture Foundation	Agriculture development	N/A			
	UBS Dutch Green fund	mitigation-energy	N/A			
	Rabobank Farm and Rural Lending	sustainable AG	N/A			
	Critical Ecosystem Partnership Fund	conservation	N/A			
Gordon and Betty Moore Foundation		Yes	Institutional, Technical and Scientific Capacity to support REDD projects.		Forestry	
Macquarie Bio Carbon Group Pte	mitigation-land use	N/A				
6. Carbon Markets	Clean Development Mechanism	Mitigation	Yes	Bionersis landfill project in Pasto, Colombia and Forestry Projects in Colombia		livestock
	European Emissions Trading System	Mitigation	N/A			
	Verified Carbon Standard	Mitigation	Yes	Restoration of Degraded Areas and Reforestation in Cáceres and Cravo Norte,		livestock
	American Carbon Registry	Mitigation	N/A			
	California Environmental Protection Agency	Mitigation	N/A			
	Prototype carbon fund	Mitigation	N/A			
	The Netherlands CDM facility	Mitigation	Yes	BRT Bogotá, Colombia: TransMilenio Phase II to IV		
	Community Development Carbon Fund (BioCarbon of the World Bank)	Mitigation	Yes	Reforestation of Degraded Land in the Caribbean Savannah		
	Partnership for Market Readiness	Mitigation for Market Readiness	N/A			
	Italian Carbon Fund	Mitigation	N/A			
	Danish Carbon Fund	Mitigation	N/A			
Spanish carbon fund	Mitigation	N/A				