

NS-225 - Sustainable Bovine Livestock

Colombia

NAMA Seeking Support for Preparation

A Overview

A.1 Party

Colombia

A.2 Title of Mitigation Action

Sustainable Bovine Livestock

A.3 Description of mitigation action

Bovine cattle raising NAMA aims to diminish the greenhouse effect gas emissions generated in cattle production and increase the carbon sinks of the pasture agro-ecosystems, through an environmental and productive management system at a regional level, promoting conservation and/or restoration of natural ecosystems, encouraging sustainable productive landscapes through the harmonization of the different public policy tools.

The specific goals of the project are:

-To intensify in a sustainable manner the cattle raising production by implementing intensive and non-intensive silvopastoral systems, and efficient management of the productive system

-Earmark areas in the cattle farms for conservation and/or restoration of natural ecosystems

-Manure management and utilization of the methane gas generated in the sacrifice lots

In a 15 year period of implementing the project, NAMA expects to achieve:

-Implement 1'250.000 ha of Silvopastoral Systems

-370.000 ha of Intensive Silvopastoral Systems

-2'200.000 ha intervene with eco-efficient management of improved foliage

-Achieve 2'000.000 ha restored in bovine livestock grounds

-4'000.000 ha freed in other sustainable uses

-Benefit 200.000 families across 15 departments in the country

-Reduce 4 MTon CO₂e by enteric fermentation

- Capture 6 MtonCO₂e by SSP implementation
- Capture up to 167 MtonCO₂ by restored ecosystems
- Avoid deforestation of 2'500.000 ha of forest, reducing the pressure it has, and mitigating 1,228 MtonCO₂e
- Total investment of USD\$900 millions
- Abatement cost 4,16 \$USD/TCO₂e

Background

According to the Second National Communication before the United Nations Framework Convention on Climate Change (2010), enteric fermentation represents the 18.48% of the greenhouse gas emissions generated in the country (48.51% from the agricultural and livestock sector, from which 91% corresponds to bovine beef cattle), manure management represents 0.66% from the total of emissions in the country (1.73% from agricultural and livestock sector), in addition to being a major factor in the emissions of land use, change in land use and forestry that correspond to a 14.45%.

In terms of production, bovine livestock generates 950.000 direct jobs, but its productive levels are very low, with stock levels of 0.6 units of great bovine livestock per hectare. On the other hand, the weight gain per day is just 350 grams, which is not much compared to the average of other more efficient countries in the region. In addition to this, it is believed that conflict regarding the use of soil that present in Colombia is related to with the expansion of the bovine livestock activity on lands with an agricultural, forestry, or conservation vocation (IGAC, 2002, 2012), and this reflects an underutilization and degradation of natural resources in the 33'800.000 ha of pasture attributed to bovine livestock in the country (DANE, 2015).

To transform this area in sustainable and productive bovine livestock, releasing areas for conservation and other uses, is a most critical element in the future rural development of Colombia. To achieve this transition with equity, competitiveness and environmental sustainability is a challenge to the agricultural, livestock and environmental politics, which this NAMA aims to help achieve.

However, aiming to plan a productive and sustainable growth of the bovine livestock sector, FEDEGAN, the most representative union of the sector, elaborated a strategic plan to reduce the area dedicated nationally to the bovine livestock production, recover

natural ecosystems and increase the animal stock in the areas, aiming for a sustainable and competitive production. In this framework, it is intended to transform the actual use of 10'000.000 ha in pastures, as well as establishing 1'000.000 ha of silvopastoral systems by 2019 (FEDEGAN, 2006).

In this sense, in 2011 started the big scale project "Sustainable Colombian Livestock", led by the World Bank and the National Federation of Cattle Ranchers (FEDEGAN) with the support of the Global Environmental Fund and the United Kingdom Ministry of Energy. This became a successful public-private alliance which promotes the sustainability and climate change mitigation in the pastures agro-ecosystems. The project takes place in seven regions (Cesar river valley, low Magdalena, Boyaca-Santander, Coffee region, Orinoco's foothills, Guajira and Meta) and aims to benefit 2800 small and medium cattle raisers through the implementation of sustainable production systems which contributes to ecological connection and the provision of environmental services while reduce poverty and increase productivity, contributing to climate change adaptation and mitigation (Zuluaga 2015).

Under this framework, The Agriculture Ministry alongside of association of producers as FEDEGAN and research centres as CIAT, CIPAV and GASA performed studies to understand the mitigation potential of different technical alternatives related to pastures agroecosystems. Different measurements of carbons stocks and emission in livestock intensification techniques as intensive silvopastoral systems were made.

The research conclude that this kind of systems have a great mitigation potential and contributes to the improvement of many environmental services as water regulation, erosion control and biodiversity.

Various projects are ongoing nowadays which intend to follow the validation of productive options associated to bovine livestock with a mitigation potential. Different institutions in the country like Universidad Nacional, Universidad de los Llanos, Universidad del Cauca, and Corpoica, amongst others, have constant research and validation programs at a regional level concerning this theme. CGIAR also has a Climate Change, Agriculture and Food Security program that has, at a global level, the Livestock Plus project. This project aims to generate information regarding sustainability for practices such as different types of rotation and supplementation and its potential monitoring mechanisms.

Social, environmental and economic cobenefits of the NAMA:

According to the study for Low Carbon Development Colombian Strategy, the Econometría consulting team (2013) and the analysis from the NAMA Information Note (NINO), the following cobenefits were estimated:

Economic:

- Improvements in the bovine livestock production returns in Colombia
- Improve the competitiveness of the sector
- Increase of income
- Reduce supply costs
- Reduce the climate variability risk

Social:

- Ease formalisation of workers
- Reduction of poverty
- Food security
- Increase of technical capability of bovine livestock
- Cobenefits of adaptation to climate change

Environmental:

- Improvements in hydrological cycles
- Soil conservation
- Biodiversity protection

Other Co-benefits:

- Strengthening of the agenda between Ministries of Environment and Agriculture.
- Increasing land uses based in land vocation, therefore reducing land use conflicts.

However there are a set of important limitation to accomplish the land use transformation that this NAMA is aiming for. Due to history and institutional design, have generated a set of legal framework and land occupation dynamics which have discourage

the sustainable intensification of pastures based agro-ecosystems.

An important proportion of land units doesn't have diffuse property structures due to different causes as informal appropriation, according to the department of national statistics (DANE) the 44% of rural units doesn't have registered title (Restrepo, 2011). The causes of this informality issue in Colombia are associated to lack of knowledge in the procedures and requirements, high direct and transaction cost in the procedures, the difficult access to notary and registration offices, lack of coordination between authorities and low incentives to formalize for land owners.

Besides there are other barriers which can be overtaken with an effective NAMA design as the limitation of financial services, low regional specialization, lack of infrastructure in some specific regions, and weak rural extension program.

A.4 Sector

<input type="checkbox"/> Energy supply	<input type="checkbox"/> Transport and its
<input type="checkbox"/> Residential and Commercial buildings	Infrastructure
<input checked="" type="checkbox"/> Agriculture	<input type="checkbox"/> Industry
<input type="checkbox"/> Waste management	<input type="checkbox"/> Forestry

Other

A.5 Technology

<input type="checkbox"/> Bioenergy	<input type="checkbox"/> Cleaner fuels
<input type="checkbox"/> Energy Efficiency	<input type="checkbox"/> Geothermal Energy
<input type="checkbox"/> Hydropower	<input type="checkbox"/> Solar Energy
<input type="checkbox"/> Wind Energy	<input type="checkbox"/> Ocean Energy
<input checked="" type="checkbox"/> Carbon Capture and Storage	<input type="checkbox"/> Low till / No till
<input type="checkbox"/> Land fill gas collection	

Other Emissions reductions through

A.6 Type of action

<input type="checkbox"/> National/ Sectoral goal	<input type="checkbox"/> Project: Investment in machinery
<input checked="" type="checkbox"/> Strategy	<input type="checkbox"/> Project: Investment in infrastructure
<input checked="" type="checkbox"/> National/Sectoral policy or program	<input type="checkbox"/> Project : other

Other

A.7 Greenhouse gases covered by the action

<input checked="" type="checkbox"/> CO2	<input checked="" type="checkbox"/> CH4
<input checked="" type="checkbox"/> N2O	<input type="checkbox"/> HFCs
<input type="checkbox"/> PFCs	<input type="checkbox"/> SF6

Other

B National Implementing Entity

B.1.0 Name

Ministry of Agriculture and Rural Development of Colombia
(Ministerio de Agricultura y Desarrollo Rural de Colombia)

B.1.1 Contact Person 1

Nelson Enrique Lozano Castro

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B.1.7 Phone	
B.1.8 Email	apinto@minambiente.gov.co
B.1.9 Contact Person 3	
B.1.10 Address	
B.1.11 Phone	
B.1.12 Email	
B.1.13 Comments	The Ministry of Agriculture and Rural Development is in charge to formulate, coordinate and evaluate policies that promote competitive, equitable and sustainable development for agricultural forestry, fisheries and rural development processes with criteria that include decentralization, consultation and participation in order to improve the level and quality of life of Colombian population. Its vision is to be the national leading institution in the development, management and coordination of agricultural, fisheries, forestry policies and rural social development, fostering harmonisation with the macroeconomic policy. Climate change matters are institutionally framed in the Vice Ministry of Agricultural Affairs under through the Direction of Innovation, Technological Development and Health Protection, who has created the on Climate Change Group.

C Expected timeframe for the preparation of the mitigation action

C.1	Number of months for completion	12
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D Currency

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

E.1.1	Estimated full cost of preparation	500000
E.1.2	Comments on full cost of preparation	The financial support could also be provided in kind as the need is to construct a complete GHG baseline and projected scenarios, the MRV process and the financial component of the NAMA. There is also need to strengthen investigations in order to reduce GHG manure management and utilisation of the methane gas generated in slaughterhouse, to scale the NAMA activities among all geographic zones where cattler ranchs are settled in Colombia.

F Support required to prepare the mitigation action

F.1.1	Amount of Financial support	
F.1.2	Type of required Financial support	<input checked="" type="checkbox"/> Grant <input type="checkbox"/> Loan (sovereign) <input type="checkbox"/> Loan (Private) <input type="checkbox"/> Concessional loan <input type="checkbox"/> Other <input type="text"/>
		<input type="checkbox"/> Guarantee <input type="checkbox"/> Equity <input type="checkbox"/> Carbon finance

F.1.3	Comments on Financial support	Amount included in costs comments
F.2.1	Amount of Technical support	
F.2.2	Comments on Technical support	Amount included in costs comments
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 type="text"/>
F.3.3	Comments on Capacity Building support	Amount included in costs comments
F.4	Financial support required	<input type="checkbox"/>
F.5	Technological support required	<input type="checkbox"/>
F.6	Capacity support required	<input type="checkbox"/>

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

G.1 Relevant National Policies	<ol style="list-style-type: none"> 1. Second Law of 1959, whereby the forest reserves are sorted 2. Law 99 of 1993, General Law of the National Environmental System 3. Law 101 of 1993, General Law of the agricultural sector 4. Law 139 of 1994, Forestry Incentive 5. Law 160 of 1994 Rural reform national system 6. Law 388 of 1997, Land use planning. 7. Climate Change Policy Guidelines, Ministry of Environment (2002), as result of United Nation Framework on Climate Change (1992) signing, the convention ratification through the Law 164 (1994) and the signing of Kyoto Protocol (1997) and its ratification in 2000. 8. National Development Plan 2002-2002 (2002), which establishes the National Strategy for Climate Change Mitigation, focusing on emissions reductions and CMD prioritising. 9. Institutional Strategy for Environmental Services trading as result of CDM Mitigation actions (DNP, 20003). 10. Law 1133, 2007. Secure agro income law. 11. Ministry of Environment, Housing and Territorial Development, 2088. National Strategy for Payment for Ecosystems Services. Bogota. 12. Law 1286, 2009. Which strengthen the Science, Technology and Innovation National System in Colombia. 13. Law 1450, 2010. National Development Plan 2010- 2014. "Prosperity for All", which included commanded the National Climate Change Policy implementation and the National Climate Change System structuring. In addition, it established the need for developing the National Low Carbon
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Development Strategy, the National Plan for Adaptation to Climate Change and the REDD Strategy (DNP, 2010).

14. Climate change Adaptation Fund, 2010.

15. CONPES 3700 of 2011 "Institutional Strategy for the articulation of policies and actions on climate change in Colombia," where the need to work in four complementary strategies established to address the issue of climate change in the country: a. The Colombian Strategy for Low Carbon Development - ECDDBC, b. The National Strategy for Reducing Emissions by avoiding Deforestation and Degradation - ENREDD + c. The National Plan for Adaptation to Climate Change - PNACC, and d. Financial Strategy Disaster Protection - EPPD.

16. Law 1454, 2011. Land Use Organic Law.

17. Law 1448, 2011. Victims and Land restitution Law.

18. National Policy for integrated management of Biodiversity and ecosystems Services. Ministry of Environment and Sustainable Development, 2012

19. Decree 1640 of 2012, which set tools for planning, organisation and management of watersheds and aquifers. Ministry of Environment and Sustainable Development

20. Low Carbon Strategy Development. 2012. (MADS, 2014)

In February 2012, the Ministry of Environment, set the Colombian low carbon strategy. To achieve a low-carbon development, the ECDDBC has identified and assessed the actions re-quired, developed Sector Action Plans in each country's productive sectors, creating tools for implementation, including a system of monitoring, reporting and verification. There-fore, the ECDDBC is prioritizing those mitigation targets through the development of NAMAs. This sectorial approach has identified that the agricultural sector plays an important role in mitigating GHG with 38% of the total emissions of the country. If the emissions by land-use change and forestry (14%) is added the participation increases to 52%.

21. Rural Mission which promotes sustainable and competitive agricultural development in the field, included in the National Development Plan 2014-2018.

22. Law 1731 of 2014, Agricultural sector financing and recovery.

23. Green Growth Strategy proposal on the basis of the National Development Plan 2014-2018

Particularly the new development Green Growth Strategy plan aims to promote sustainable development of the country ensuring "economic and social welfare in the long term and ensuring the recovery of the environment from the impacts of productive activities". According to the OECD the implications of the intensive over exploitation of natural resources in Colombia are potentially more damaging compared to its

counterparts because of the high extractive industries and to the high urbanization rate to achieve economic development (OECD/ECLAC, 2014)

Similarly by achieving green growth the sectors competitiveness is equally increased, ensuring natural resources recognized in this document as the basis of capital, thus preventing degradation of these and the impacts generated by climate change and extreme weather events continue to affect the most vulnerable and needy communities in the country (DNP , 2014) .

Some key elements of this public policy guideline, is to increase national stocking rate from 0.6 to 1 cow unit per hectare, and augment by one million hectares land uses without conflict of use (DNP 2015).

RELATION WITH OTHER NAMAS

Nowadays, Colombia is developing 3 NAMAs initiatives that have a direct relation with the Sustainable Bovine livestock NAMA. According to the Colombian Coffee Growers Federation, 5% of bovine livestock farmers also have coffee crops within their properties, particularly in Caldas, Risaralda and Quindio; despite of the fact that production systems between these two practices vary significantly, there is a synergy as the Coffee NAMA is proposing the establishment of agroforestry systems and the Livestock NAMA intends to promote the land use change.

On the other hand, the Productive and Technological Reconversion of Colombia's Panales Sector NAMA has identified that only the 5% of panales farmers also have livestock production; nonetheless, as they are small farmers, the land use and vocation conflict is not an issue, but it is proposed that during the design of both projects, particular synergies are review according to the production characteristics of each area.

Finally, The Forestry NAMA lead by the Ministry of Environment and Sustainable Development, seeks to restore degraded areas in Colombia and encourage a commercial reforestation, which will help the livestock NAMA to promote interconnected restored landscapes, increasing the benefits of cattle farms improvements. In this sense, it is estimated that due to deforestation in ranching areas to establish pastures, it will be possible to check links in common areas where impacts are representative. Then again, the Forestry NAMA also intends to counter different barriers forest producers are facing, solving constraints that would also present the silvopastoral systems in terms of plant material handling, post-harvest and sale.

Since the three NAMAs are in the design stage, it is proposed working sessions during the livestock NAMA design owing to review in greater detail the synergies and future agreements among projects.

G.2 Link to other NAMAs

Productive and Technological Reconversion of Colombia's Panales Sector

H Attachments

H Attachments

Title Description

H.1 Attachment description	The document here presented corresponds to the NAMA's Information Note of the project in a Spanish version. The english one will be upload soon.
H.2 File	<input data-bbox="699 168 1029 212" type="text"/> <input data-bbox="1029 168 1189 212" type="button" value="Browse..."/>

I Support received

I.1 Outside the Registry	<p>The Ministry of Agriculture and Rural Development has promoted investigations under an agreement with CIAT (International Center for Tropical Agriculture) which have been the based for proposing the NAMA's activities; strong commitment and participation during the conceptualisation of the NINO has been recieved from both institutions. The Project has also recieved technical support from CIPAV and the Colombian Sustainable Livestock Project, a GEF project lead by FEDEGAN (National Federation of Cattle Ranchers).</p> <p>Additionally the NAMAs Information Note has been design with the support of the Colombian Low Carbon Development Strategy, a programme lead by the Ministry of Environment and Sustainable Development which is supported by UNDP's LECB programme and MAPS programme.</p>					
I.2 Within the Registry	<table border="1"> <thead> <tr> <th data-bbox="686 851 925 909">Support provided</th> <th data-bbox="925 851 1085 909">SupportType</th> <th data-bbox="1085 851 1244 909">Amount</th> <th data-bbox="1244 851 1404 909">Comment</th> <th data-bbox="1404 851 1560 909">Date</th> </tr> </thead> </table>	Support provided	SupportType	Amount	Comment	Date
Support provided	SupportType	Amount	Comment	Date		