CTCN Technical Assistance

Request Submission Form

Guidelines:

- This Request Submission Form should be completed by the organisation requesting technical assistance from the Climate Technology Centre & Network (CTCN) in collaboration with the National Designated Entity (NDE) of the country in question
- The Form must be signed by the NDE. Please see updated contact list of NDEs here: http://unfccc.int/ttclear/support/national-designated-entity.html
- The Form can be submitted as a Word file containing a digital signature or as a signed and scanned PDF file in combination with an un-signed Word file
- For requests submitted by multiple countries, all the NDEs of the respective countries shall sign identical Forms before official submission to the CTCN
- NDEs have the opportunity to submit CTCN requests in collaboration with National Designated Authorities (NDAs) for the Green Climate Fund (GCF) if targeting the GCF Readiness Programme.

Requesting country or countries:	Cuba
Request title:	**Development of baseline greenhouse gas (GHG) emissions from cattle farming in Cuba**
NDE	Armando Rodríguez Batista Director Ministry of Science, Technology and Environment 53 78 320131 armando@citma.gob.cu
Request Applicant:	Dr. C. Giraldo J. Martin Martin Director Estación Experimental de Pastas y Forrajes Indio Hatuey (Indio Hatuey Pasture and Fodder Experimental Station - EEPFIH), University of Matanzas 53 45 571225-571235 giraldo@ihatuey.cu Central España Republicana, CP 44280 Matanzas, Cuba

Climate objective:

- ☐ Adaptation to climate change
- ☒ Mitigation of climate change
- ☐ Combination of adaptation and mitigation of climate change

Geographical scope:

- ☐ Community level
- ☐ Sub-national
- ☒ National
- ☐ Multi-country

If the request is at a sub-national or multi-country level, please describe specific geographical areas (provinces, states, countries, regions, etc.).

Problem statement related to climate change (up to one page):

In accordance with Decisions 1 CP 19 and 1 CP 20 of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP), the Republic of Cuba presented its Nationally Determined Contribution (NDC), in which combating climate change has high priority. As a small island state in the subtropics, the Cuban archipelago is highly vulnerable to global climate change. Cuba's gross GHG emissions reached approximately 40 million tonnes CO2eq in 2010, of which 76 per cent was attributable to the energy sector (energy generation, transport and industries) and 15 per cent to agriculture, with the remainder split between waste and industry (9 per cent). No reliable information is available on the contribution of cattle farming to Cuba's GHG emissions.

Livestock farming in Cuba covers more than two million hectares, of which 16-20 per cent is cultivated pasture, 38 per cent is partially or completely occupied by invasive plants (marabú, *Dichrostachys cinerea*) and the remainder is low-productivity natural pasture. The cattle farming herd numbers 4.014 million, including an average of 365,300 dairy cows. Extensive livestock farming and the agronomic practices used result in low animal productivity and high environmental damage (soil degradation, deforestation, biodiversity loss). The deterioration in the livestock environment has several causes. The most significant are the grass monocultures (and the consequent loss of plant and functional biodiversity), the inadequate management of grasslands and herds, the inappropriate use of water sources, the poor management of woody vegetation (silvopastoral systems) and the lack of knowledge about sustainable farming practices. Cuban livestock farming has low productive and economic efficiency and could be make a significant contribution to Cuba's GHG emissions. The GHG emissions footprint per unit of animal product (milk, meat) of Cuban cattle farming is not known.

The challenge is to transform the current traditional production model into sustainable low-emissions livestock farming, able contribute to GHG mitigation and adapt more readily to climate variability.

Past and on-going efforts to address the problem (up to half a page):

In Cuba the legal framework, public policies, institutions and resources focused on adapting to and mitigating climate change include: 1) the Ministry of Science, Technology and Environment (CITMA) and its Environment Agency (AMA) which are responsible for the national climate change programme; 2) the Ministry of Agriculture (MINAG-livestock/forestry) and its Livestock Development Programme; 3) the National Civil Defence System; 4) various thematic networks (water, weather, seismology, mapping, oceanography, radioactivity and health); 5) the National Atlases (Geological, Soil and Climate); 6) various research and higher education institutes that work directly or indirectly on mitigation and adaptation (Instituto de Ciencia Animal (Institute of Animal Science - ICA), EEPFIH, Instituto Nacional de Ciencia Agrícola (National Institute of Agricultural Science - INCA), and Centro Nacional de Sanidad Agropecuaria (National Centre for Agricultural Health - CNSA), among others); 7) since 2000, a joint work programme with UNDP to achieve the Millennium Development Goals, which included 103 hazard, vulnerability and risk studies conducted throughout Cuba, at first focused on hydrometeorological hazards and then on topics related to drought, fire outbreaks in rural areas, and geological, technological and health hazards; and 8) the government's plan to combat climate change (Tarea Vida), which is a priority of Cuba's environmental policy.

Specific technology[1] barriers (up to one page):

Key actors within CITMA, MINAG-livestock/forestry, the Ministry of Higher Education (MES) and livestock associations do not know the magnitude of GHG emissions from cattle farming in the country nor the mitigation capacity of the range of good livestock management practices that could be applied in Cuba. Research and higher education centres and non-governmental organizations (NGOs) have published a significant amount of information on Cuban livestock farming systems, but this information is patchy and has only been analysed in relation to livestock productivity, not GHG emissions. No reliable information is available on the contribution of cattle farming to the country's GHG emissions and the GHG emissions footprint per unit of animal product (milk, meat) is not known. There are no personnel trained in determining the GHG emissions or carbon footprint of livestock farming, or in assessing technological alternatives in terms of their GHG mitigation capacity. CITMA, MINAG-livestock/forestry, MES and livestock farmers (National Association of Small Farmers - ANAP) have no experience of working together to integrate livestock development measures, GHG emissions and the fulfilment of national commitments under the United Nations conventions, and training human resources on these issues. The technical assistance requested will enable the development of the knowledge base concerning GHG emissions from livestock farming required by the national leaders of these Ministries and livestock farmers. It will also build the trust and social capital required between these leaders to continue to implement the changes and adjustments required along the whole livestock chain and to relevant public sector bodies in the long term. It will enable this information to be incorporated into climate change and livestock development policies and plans.

Sectors:

Please indicate the main sectors related to the request:

☐ Coastal zones	☐ Early Warning and Environmental Assessment	☐ Human Health	☐ Infrastructure and Urban planning
☐ Marine and Fisheries	☐ Water	☒ Agriculture	☒ Carbon fixation
☐ Energy Efficiency	☒ Forestry	☐ Industry	☒ Renewable energy
☐ Transport	☒ Waste management		

Please add other relevant sectors:

Cross-sectoral enablers and approaches:

Please indicate the main cross-sectoral enablers and approaches

☒ Communication and awareness	☐ Economics and financial decision-	☒ Governance and planning	☐ Community based

[1] *"**any equipment, techniques, practical knowledge and skills** needed for reducing greenhouse gas emissions and adapting to climate change" (Special Report on Technology Transfer, IPCC, 2000)*

making

☐ Disaster risk reduction ☒ Ecosystems and biodiversity ☐ Gender

Technical assistance requested (up to one page):

The overall objective of this technical assistance is to estimate the level of GHG emissions from cattle farming in order that mitigation measures can be included in policies, strategies and plans as part of the climate change programme (Nationally Appropriate Mitigation Actions (NAMA), NDC, convention commitments) as well as livestock development policies, strategies and plans in Cuba.

The following specific objectives must be achieved: 1) develop an initial baseline estimate of GHG emissions from cattle farming; 2) estimate the potential of implementing good practices for achieving sustainable low-emissions cattle farming (division and grazing rotation, improving pastures and animals' diet, selecting the best animal genotypes, using biodigesters, management of silvopastoral systems and woodland on cattle ranches, restoring organic matter to the soil, using slow-release fertilizers, etc.); 3) inform and support CITMA, MINAG-livestock/forestry, MES and ANAP in relation to the current status of emissions and the potential for GHG mitigation through the application of good practices; and 4) educate and build the capacities of leaders and technical teams within CITMA, MINAG-livestock/forestry, MES and producers in relation to sustainable low-emissions livestock farming.

The following activities should be carried out: 1) with the participation of all relevant institutions, compile and quantitatively analyse the secondary data available in Cuba on cattle farming as required to estimate an initial baseline and the capacity for emissions reductions and improvements in livestock productivity which would result from the application of a range of good practices applicable to the Cuban context; 2) prepare open-access databases, technical publications, policy reports and communications on GHG emissions for the baseline and with the application of good practices; 3) participate in meetings and advise the institutions and organizations that will participate in this initiative, and support them to include the new knowledge about GHG emissions in their policies, plans and measures for climate change mitigation and sustainable low-emissions livestock farming; 4) run talks and courses and participate in exchanges and technical tours to educate and build the capacities of leaders and technical teams within key institutions and organizations in relation to GHG emissions; 5) prepare a concept note for a project to implement the main recommendations resulting from this technical assistance.

Expected timeframe:

The technical assistance will last for 12 months. See the Activity Schedule at the end of this request.

Anticipated gender and other co-benefits from the technical assistance:

Evaluating the livestock industry in terms of its GHG emissions footprint will enable weaknesses and leakages that reduce the productive efficiency of cattle farming to be identified. The points of intervention will signpost the path to transforming the present-day extensive livestock farming into sustainable low-emissions livestock farming with higher financial and productive returns which will benefit producers as well as other links in the cattle farming chain in Cuba.

Incorporating woody vegetation into the livestock environment (silvopastoral systems, reforestation, increased coverage of woody invasive species, conservation of natural forests in livestock farming landscapes) will enable the comprehensive analysis of livestock farming, tree cover and forests in the landscape, which will contribute to the conservation of biodiversity. Identifying ways to restore organic matter to the soil could have significant impacts on the water cycle in the future, once the applicable corrective measures have been implemented, promoting infiltration and aquifer recharging. At a very local level, it will increase the efficiency of water use for grasslands and animals. The integrated management of manure will reduce the faecal pollution and eutrophication of surface water bodies.

The social capital and the ability of the (public and private) environmental, agricultural and forestry sectors to coordinate and collaborate will increase.

The inclusion of women and men in workshops, courses and tours with balanced gender representation will be ensured so they can work towards the development of sustainable low-emissions livestock farming.

Key stakeholders:

Please list the stakeholders who will be involved in the implementation of the requested CTCN technical assistance and describe their role during the implementation (for example, government agencies and ministries, academic institutions and universities, private sector, community organizations, civil society, etc.).

Stakeholders	Role to support the implementation of the technical assistance
National Designated Entity	
Request Applicant	
Indio Hatuey Pasture and Fodder Experimental Station (EEPFIH)	Oversees, administrates, directs and coordinates the activities of the institutions participating in the project. Oversees financial implementation and presents the Cuban implementing partners with requests for information on the technical, narrative and economic resources required at different stage in a timely manner.
Institute of Animal Science (ICA)	Participates in the coordination and implementation of the project together with EEPFIH. Submits the information and technical findings required. Oversee the financial implementation of the project.
Ministry of Agriculture (MINAG-livestock/forestry)	Provides all facilities for the implementation of the project within the framework of current Cuban legislation and provisions, with regard to international cooperation on subjects within its competence.
Ministry of Science, Technology and the Environment (MCITMA)	National Designated Entity (NDE), responsible for managing requests to CTCN.
Ministry of Higher Education (MES)	The MES is the lead implementing partner for the project. Through EEPFIH and ICA, it will have the following responsibilities: Submit to the Ministry of Foreign Trade (MINCEX) a duly signed digital and hard copy of the implementation status of the Plan (physical) and the project budget (financial) on 10 April, July, October and January, as well as narrative technical reports at year end. At the end of the project it will submit the Final Report to MINCEX.

Ministry of Foreign Trade (MINCEX)	Provides all facilities for the implementation of the project within the framework of current Cuban legislation and provisions, with regard to international cooperation.
OTHERS	National Civil Defence System, Thematic Networks

Alignment with national priorities (up to 2000 characters including spaces):

The Cuban environmental legislative framework was established under the Constitution (1976), primarily under article 27 which recognises that *"The State shall protect the environment and natural resources of the country. It recognizes their close link with sustainable economic and social development for making human life more rational and ensuring the survival, welfare, and security of present and future generations. It is the duty of the citizens to contribute to the protection of the water and atmosphere, and the conservation of the soil, flora, fauna and all the rich potential of nature."*

Climate change studies in Cuba began in 1991 with the establishment of the national climate change commission by the Cuban Academy of Sciences. One year later, the preliminary impact assessment was carried out. The national climate change group was created by the Ministry of Science, Technology and Environment in 1997 and it produces national communications every two years. This was the basis for the development of the Environment Act (Law 81 of 1997), which provided comprehensive coverage of the subject.

The National Environmental Strategy 2011-2015 is a framework document for Cuban environmental policy which is implemented through Annual Implementation Programmes and incorporates studies on hazard, vulnerability and risk, the impacts of current and future sea level rises on the Cuban coastal zone, local environmental regulations, environmental management and risk management, sectorial and regional programmes to combat this phenomenon and measures aimed at promoting, developing and enhancing environmental awareness.

In December 2016, Cuba ratified the Paris Agreement on Climate Change and the Cuban Government approved a new framework document in April 2017, broader in scope than its predecessors, called the State Plan to Combat Climate Change in the Republic of Cuba (Tarea Vida). Its programme prioritizes areas such as the preservation of human life in vulnerable locations, food security and the development of tourism. The Tarea Vida plan includes a programme of staggered investments that will be made over the short term (2020), medium term (2030), long term (2050) and very long term (2100). This plan provides for a set of five strategic measures and activities aimed at counteracting the impact on vulnerable areas. These measures include adapting agricultural activities, in particular those with the greatest impact on the country's food security situation, changing land use as a consequence of rising sea levels and drought, and reducing agricultural areas on coastlines affected by saline intrusion. It also covers crop diversification, improving soil quality, and introducing and developing crop varieties that are resistant to the new temperature scenario.

Consequently, in 2017 Cuba's Environment Agency will prioritize projects related to researching climate change, sustainable development and weather. This will take shape through two national programmes: The sustainable use of Cuba's biodiversity and Climate Change in Cuba: Impacts, Mitigation and Adaptation.

Furthermore, one of the targets under the Ministry of Agriculture’s strategic forecast for 2021 is to mitigate the threats posed by climate change to agriculture and food and energy security. Its strategic objectives include guaranteeing the conservation and sustainable management of the environment considering the impacts of climate change and improving the population's quality of life.

Please describe how the technical assistance is consistent with national climate priorities such as: Nationally Determined Contribution, national development plans, poverty reduction plans, technology

needs assessments, Low Emission Development Strategies, Nationally Appropriate Mitigation Actions, Technology Action Plans, National Adaptation Plans, sectorial strategies and plans, etc.

Reference document (please include date of document)	**Extract** (please include chapter, page number, etc.).
Nationally Determined Contribution (NDC)	Nationally Determined Contribution - United Nations Framework Convention on Climate Change. Cuba. http://www4.unfccc.int/ndcregistry/PublishedDocuments/Cuba%20First/Republic%20of%20Cuba-NDCsNoc2015.pdf
Technology Needs Assessment	La Tarea Vida: Plan de Estado para el enfrentamiento al cambio climático del Gobierno cubano, 2017. [Tarea Vida: the Cuban Government's State Plan to Combat Climate Change, 2017] http://www.granma.cu/cuba/2017-04-27/aprueban-plan-de-estado-para-el-enfrentamiento-al-cambio-climatico-27-04-2017-23-04-48 https://www.youtube.com/watch?v=LoAlqxc5Y
National Adaptation Plans	
Nationally Appropriate Mitigation Actions	
Add others here as relevant	

Development of the request (up to 2000 characters including spaces):

The initiative was developed as a proposal by Cuban institutions (EEPFIH and ICA) and the Tropical Agricultural Research and Higher Education Centre (CATIE) to contribute to combating climate change in the livestock sector, through capacity building on subjects related to good agricultural practices, measuring GHG emissions and carbon sequestration, among others.

CITMA was informed of the relevance of presenting a project proposal to CTCN. With its agreement, joint work began with participating institutions to draft the proposal. The directors of the Cuban institutions held discussions with the Deputy Ministers of CITMA and MINAG who attended to hear an explanation of the proposal.

Current environmental legislation was consulted. Information was also sought from other relevant Cuban institutions. Once completed, it was submitted to CITMA for revision.

Background documents and other information relevant for the request:

This proposal is consistent with and falls within the scope of the following laws and decrees:

- The Framework Law governing the reduction of vulnerability and compulsory adaptation under the Constitution of the Republic of Cuba (1976), primarily under article 27, the legislative framework for the environment in Cuba. http://www.cuba.cu/gobierno/cuba .htm
- Law 33 on the Protection of the Environmental and Rational Use of Natural Resources, 1981. http://www.parlamentocubano.cu/index.php/documento/ley-de-proteccion-al-medio-ambiente-y-del-uso-racional-de-los-recursos-naturales/
- Law 81 on the Environment, 1997. 11 JULY 1997, YEAR XCV Number 7 Page 47. COUNCIL OF STATE. Official Journal of the REPUBLIC OF CUBA. STANDARD EDITION, HAVANA. http://oas.org/dsd/fida/laws/legislation/cuba/cuba_81-97.pdf

- Decree Law No. 200 on Environmental Violations. 23 December 1999, YEAR XCVII Number 83 Page 1339. COUNCIL OF STATE. Official Journal of the REPUBLIC OF CUBA. STANDARD EDITION, HAVANA. http://wwvv.medioambiente.cu/legislacion/DL-200.htm
- Directive No. 1/2005, of the Vice President of the National Defence Council. Natural Disaster Hazard, Vulnerability and Risk Studies. http://www.sld.cu/galerias/pdf/sitios/desastres/directiva_vp_cdn_sobre_desastres.ultima_version.pdf
- National Environmental Strategy 2011-2015, with the Programme to Combat Climate Change. http://climateobserver.org/wp-content/uploads/2015/06/estrategia-ambiental-cuba-2010_2015.pdf

OPTIONAL: Linkages to Green Climate Fund Readiness and Preparatory Support

The CTCN is collaborating with the GCF in order to facilitate access to environmentally sound technologies that address climate change and its effects, including through the provision of readiness and preparatory support delivered directly to countries through their GCF NDA. These actions are in line with the guidance of the GCF Board (Decision B.14/02) and the UNFCCC, particularly paragraphs 4 and 7 of 14/CP.22 that addresses Linkages between the Technology and the Financial Mechanisms[2].

The CTCN is therefore implementing some of its technical assistance using GCF readiness funds accessed via the country's NDA. Any application for GCF support, including the amount of support provided, is subject to the terms and conditions of the GCF and should be developed in conjunction with the NDA.

Please indicate whether this request has been identified as preliminarily eligible by the NDA to be considered for readiness support from the GCF.

☐ Initial engagement: The GCF NDA of the requesting country has been engaged in the design of this request and the NDA will be involved in the further process leading to an official agreement for accessing GCF readiness support.

☐ Advanced engagement (preferred): The GCF NDA of the requesting country has been directly involved in the design of this request and is a co-signer of this request, the signature indicating provisional agreement to use readiness national funds to support the implementation of the technical assistance.

NDA name: Armando Rodríguez Batista, Director

Date: 02/04/2018

Signature:

Monitoring and impact of the assistance:

By signing this request, I affirm that processes are in place in the country to monitor and evaluate the

[2] Please see: https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/auv_cop22_i8b_tm_fm.pdf

technical assistance provided by the CTCN. I understand that these processes will be explicitly identified in the CTCN Response Plan and that they will be used in the country to monitor the implementation of the technical assistance following standard CTCN procedures.
I understand that, after the completion of the requested assistance, I shall support CTCN efforts to measure the success and effects of the support provided, including its short, medium and long-term impacts in the country.

Signature:	
NDE name:	Dr. C. Giraldo Jesús Martín Martín, Director, Indio Hatuey Pasture and Fodder Experimental Station, University of Matanzas
Date:	26-03-2018
Signature:	

THE COMPLETED FORM SHALL BE SENT TO THE CTCN@UNEP.ORG

The CTCN is available to answer all questions and provide guidance on the application process.

Activity Schedule

Months / Activities	1	2	3	4	5	6	7	8	9	10	11	12
Presentation of the initiative to leaders and specialists within key actors												
Tours, exchange visits and training of key personnel on developing the baseline in a gender equitable way.												
Gathering secondary information on livestock farming, organic matter in the soils and tree coverage dynamics in grassland areas.												
Analysing the information and preparing the technical report, policy briefs and general communications.												
Short courses and talks for leaders and specialists within key institutions with equitable participation of men and women.												
Advice, participation in workshops and support for the leaders of key institutions on the integration of the new knowledge into policies, plans and measures relating to the mitigation of GHG emissions from livestock farming.												
Drafting the concept note												