

NS-217 - MULTIPURPOSE UTILIZATION OF BIOCHAR IN MONGOLIA

Mongolia

NAMA Seeking Support for Preparation

A Overview

A.1 Party

Mongolia

A.2 Title of Mitigation Action

MULTIPURPOSE UTILIZATION OF BIOCHAR IN MO

A.3 Description of mitigation action

Mongolia is a developing country with a small population (3 million people) and vast territory (1,564,116 square kilometers). The nomadism coexist with modern urban lifestyles. Approximately 30% of the population is nomadic or semi-nomadic.

According to the National Statistic Office of Mongolia, in 2014, there were reported 51.9 million livestock were reported: 349,299 camels, 2,995,754 horses, 23,214,783 sheep, and 22,008,896 goats by 2014. At the household level, utilization of stockbreeding manure is used for heating of dwellings and bedding for livestock barn is less than its production. Study suggests that utilization of biochar (about 5 -100 t/yr at herder household level in Mongolia) has numerous advantages and potentials, activities related to biochar *it is difficult to distinguish between biochar and charcoal in the document we referred charcoal as a carbonized material from trees as a produced from the other bio-sources*) in Mongolia are still limited and only few small scale pilot projects are implemented. Study estimates that additional income for the total herder producers will be around 330,0 billion MNT/year (Mongolian currency "Tugrug". One US dollar is equal to ~2000 tugrug).

Moreover, in last two decades near the settlement a shift to intensive farming of cow, pig and poultry is increasing. This is emerging serious problems on environment including soil degradation and waste management.

Within a biochar project, emissions reductions (ERs) can be achieved by changing fresh organic matter to a much more stable form through the production of biochar, from increasing soil carbon stocks upon biochar application, possible reductions in soil GHGs, enhanced carbon storage in growing crops and reduced fertilizer and other energy-intensive agricultural inputs.

The project would implement climate change mitigation measures at the same time and it consist of following

a). The pilot projects to test the feasibility of utilizing biochar by small scale herder families, vegetable gardeners and farm workers on an individual and community level to

improve soils, and to combat land degradation and warming. The biochar would be returned to the agricultural system to improve soil fertility and water management. The level and prevailing factors of land degradation was estimated in 2013, and result of this research shows 77.8 per cent of the territory affected by degradation, of which 9.9 per cent is degraded.

b). The other challenge is that herder families are widely scattered to wide areas which is hard to manage manure productions and implement MRV for small scale farmers. Thus, the feasibility study that assesses the possibility of establishing MRV system for nomadic herders and small scale farmers is the challenge to pursue with this project.

Currently, we are proposing following five main project activities: a) modified through the technical assistance from the CTCN to evaluate the availability of existing biomass which could be used to produce biochar and analyzing the biochar produced from that; b) possibility to establish MRV; b) assessing technologies to produce biochar and from that assessment, constructing/operating a mini-scale and a small- to medium-scale production pilot facility including monitoring performance; c) conducting research plots to evaluate the biochar to analyze costs, application, and changes in soil organic matter; and finally, e) analyzing the related revenues such as carbon credits, farming gains, and other benefits (if sold to outside parties).

The beneficial potential of biochar as an approach to address environmental challenges: the need for waste management, bioenergy, improving degraded soils and mitigating climate change has widely spurred interest in last two decades in the world. This project can help to:

- Increase income for herders, vegetable gardeners, and other small scale farmers and workers on an individual and community level and create jobs in urban areas
- Increase efficient use of agricultural waste and forest residues
- Reduce soil degradation, soil contamination and other environmental issues in urban areas
- Reduce GHG emissions from unhandled manure and increase GHG removals through carbon sequestration in pastureland soil and vegetation growth
- Increase water holding capacity in the soil
- Decrease fertilizer application per area unit by 2-3 times
- Decrease overusing of forest resource (illegal logging)
- Substantial amount of biochar storage with higher energy density (28-33MJ/kg) than wood (18 MJ/kg) and coal (15-20 MJ/kg) help to overcome the severe cold of winter disasters

A.4 Sector

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

A.5 Technology	<input type="checkbox"/> Other <input type="text"/> <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
A.6 Type of action	<input checked="" type="checkbox"/> Other <input type="text" value="carbonization"/> <input type="checkbox"/> National/ Sectoral goal <input type="checkbox"/> Strategy <input type="checkbox"/> National/Sectoral policy or program <input type="checkbox"/> Project: Investment <input type="checkbox"/> Project: Investment infrastructure <input checked="" 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 checked="" 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	Nature Conservation Fund under Ministry of Environment, Green Development and Tourism
B.1.1 Contact Person 1	Saruul Dolgorsuren
B.1.2 Address	Apt 22-7G Nature Conservation Fund, Amar Street, 8th khoroo, Ulaanbaatar-14200, Mongolia
B.1.3 Phone	7000 0743
B.1.4 Email	saruulsh@gmail.com
B.1.5 Contact Person 2	Sanaa Enkhtaivan
B.1.6 Address	Apt 22-7G Nature Conservation Fund, Amar Street, 8th khoroo, Ulaanbaatar-14200, Mongolia
B.1.7 Phone	7000 0743
B.1.8 Email	ezsanaa@gmail.com
B.1.9 Contact Person 3	Batjargal Khandjav
B.1.10 Address	
B.1.11 Phone	7000 0743
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B.1.13 Comments	<p>The mission of the NCF which is established in 1998 is to support programs and services that value nature, and use funding with optimal efficiency; support various research studies on ecosystem services intended to protect the nature and biodiversity, preserve nature, provision strategies for use of natural resources, introduce advanced environmentally sound technologies to reduce adverse environment, spread environmental laws and policies, encourage the activities of individuals and entities in the implementation of programs and services, and increase the awareness of ecological education.</p> <p>To achieve the countries obligation under the UNFCCC, government has decided to establish a new Change Project Implementing Unit (CCPIU) specifically to achieve the UNFCCC reporting obligation. The Conservation Fund in 2015. The main functions of CCPIU is to bear main responsibilities of the following three projects: a) Preparation of intended nationally determined contribution (INDC) to the INDC under the United Nations Framework Convention on Climate Change (UNFCCC), b) Preparation of the Biennial Update Report (BUR) to UNFCCC and c) Preparation of the Third National Communication Report (NCR) to UNFCCC under the United Nations Framework Convention on Climate Change (UNFCCC) for Mongolia.</p> <p>With respect to this project, the CCPIU of NCF shall serve as the project implementing unit and report to the NCF director and reports regularly to the Ministry of Environment, Green Development and Tourism.</p>

Name	Role
Agriculture University of Mongolia, Mongolian Biochar Research Institute (MoBRI)	Technology and product training
Nature Conservation Fund, Climate Change Project Implementing Unit	Project coordination
Ministry of Environment, Green Development and Tourism	Policy regulation
Ministry of Agriculture	Policy regulation

C Expected timeframe for the preparation of the mitigation action

C.1 Number of months for completion 24

D Currency

D.1 Used Currency

AED

Conversion to USD: 1

E Cost

E.1.1 Estimated full cost of preparation 500000

E.1.2 Comments on full cost of preparation The amount of funding is rough estimation and will require assessment.

F Support required to prepare the mitigation action

F.1.1 Amount of Financial support 200000

F.1.2 Type of required Financial support

- Grant
 Loan (sovereign)
 Loan (Private)
 Concessional loan
 Guarantee
 Equity
 Carbon finance
- Other

F.1.3 Comments on Financial support The amount of financial support is rough estimation and requires assessment.

F.2.1 Amount of Technical support 100000

F.2.2 Comments on Technical support

Currently, we are proposing the following five main project activities, modified to include technical assistance from the CTCN:

- evaluating the availability of existing biomass which can be used to produce biochar and analyzing the biochar produced from that biomass for the possibility to establish MRV;
- assessing technologies to transport biochar and from that assessment, constructing a production pilot facility including monitoring performance; and
- the research plots to test for the biochar to analyze costs, applications, and changes in soil organic matter; and finally,
- analyzing biochar-related revenues such as carbon credits, farming of biochar (if sold to outside parties).

F.3.1 Amount of capacity building support 200000

F.3.2 Type of required capacity building support

- Individual level
 Institutional level
 Systemic level

F.3.3 Comments on Capacity Building support

 Other

The amount of capacity building support is rough estimate further assessment.

Ex: Training for farmers, handy book for estimating the G do PDCA (plan do check act process for improvement)

F.4 Financial support required

F.5 Technological support required

F.6 Capacity support required

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

G.1 Relevant National Policies

- National Action Program on Climate Change
- National programme to combat desertification
- Livestock programme
- Programme to support the development of int
- Energy efficiency Improvement, Renewable E Programme
- Forest clearance program,
- National REDD+ program

G.2 Link to other NAMAs

H Attachments

H Attachments

Title Description

H.1 Attachment description

Typical view of manure in Mongolia near the settlement a

H.2 File

Browse...

I Support received

I.1 Outside the Registry

none

I.2 Within the Registry

Support provided Support Type Amount Comment Date