

Title of the Project: *Agroforestry of degraded croplands using moringa and jatropa trees*

Country: Sudan

Country has ratified the Kyoto Protocol *

√Yes

No

LOAN APPLICANT

Loan Applicant name: Muna Mahjoub Mohamed Ahmed

Loan Applicant email: munamm789@yahoo.com

Legal entity : Agricultural Technology Transfer Society (ATTS)

Legal entity can be: an individual, a private company, an NGO, a Government, a Government agency, a Municipality, etc.

Loan Applicant postal address: P.O. Box 321 Khartoum-Sudan

Loan Applicant phone: +249 183 270440

Loan Applicant fax *+249 183 268775

Loan Applicant CV: *The agricultural technology transfer society (ATTS) is non-governmental organization driven by scientists, professors and researchers with common interest in the exploitation of research and modern agricultural technologies to uplift productivity of the agricultural sector of the Sudan. Many have not less than 10 years experience in management of soil and water using crop varieties and technology to achieve maximum soil and water conservation improve knowledge of traditional agricultural practices & integrate traditional knowledge with innovative technology, and renewable energy.*

Corporate references

Contact person phone *

Contact person fax *

Contact person email

CDM CONSULTANT:

CDM consultant * Viability Africa, LLC**Countries of operation**

CDM contact person name * Kyle Denning

CDM contact person phone * +1-616-350-1722

CDM contact person Email: kyle.denning@sef-llc.com

PROJECT INFORMATION

Location of the project: rural areas in different the central states of Sudan

Country, province, city, village and geographical coordinates if available

Type of the project activity: Methane avoidance

Please use the types and subtypes in the UNEP Risoe CDMPipeline e.g.: Wind, Solar, Hydro, Biomass energy, Energy Efficiency (EE) households/service/industry etc, Fossil fuel switch, Afforestation/Reforestation, Landfill gas , Methane avoidance, N2O/HFC/PFC/SF6 removal, Transport. The subtypes can be found in the "Invest" sheet in the CDMPipeline at www.cdmpipeline.org

Scale of the project *

Large scale

Small scale

√PoA

Other ...

Brief description of the project

The most serious environmental concerns in Sudan are land degradation, desertification and the spread of deserts. About 75% of the population live in rural areas that account for over 80% of the total extreme poor. Due to degraded soils, lack of inputs and unfavorable weather conditions, most of the resource-poor farmers grow their crops in degraded soils without inputs such as chemical fertilizers or pesticides. Rainfall is extremely variable in amount and distribution, making rainfed agriculture risky and thus preventing farmers from investing in inputs that enhance productivity. Each small scale family managing 3 feddans (1 fedda =0.42 ha) on degraded land will enjoy a moringa/jatrofa model based on domestic

consumption, post harvest losses and surplus which could be marketed. Each of the 2 feddans will be divided into four quarter where vegetables will be cultivated. The remaining feddan will be divided into two halves; one half will be cultivated with a type of cereal according to the preference of the farmer the other half will be cultivated with moringa cultivated as fodder harvested after 90 days and cut every month thereafter. Along the water canal ridges moringa trees are planted at 1meter distance. The farm will be surrounded by jatrofa tree to act as wind break and to keep animals away. Each 10 families will be grouped in an association and in each 30 feddans (with 10 families) a well will be dug. The farmers will be encouraged to access microfinance on soft loan conditions as the bank will benefit from the CER. The moringa/jatrofa group will be contracted to provide free moringa seeds the seeds later harvested from the trees will be delivered to the group to be marketed and the revenue will be shared between the group and farmers. The agricultural technology transfer society will implement this model in 5 states of Sudan covering five sites in each that is a total of 120 feddans with a total of 40 families

Brief description of the technology to be employed and its current use in the country

The revised approved baseline methodology for afforestation and reforestation entitled "Simplified baseline and monitoring methodologies for small-scale afforestation and reforestation project activities under the clean development mechanism implemented on grassland or croplands " (AR-AMS0001/Version 04) will be applied.

Identify technology supplier where possible

Sector background

The country priorities are to reduce poverty through sustainable development and to combat desertification. The socioeconomic aspects of the project are to:

-Enhance livelihood and ecosystem resilience: Mitigating the impact of acute drought, desertification, degraded environments, and pests in smallholder agriculture with a view to facilitate long term recovery and enhance self-reliance

- Nourishing families and agro-enterprises: Improving food and nutritional security and human and livestock health through increased agricultural productivity, and better food/feed quality
- Reduced child mortality by providing more nutritious foods.
- Improved maternal health by ensuring that poor pregnant and lactating women get the right quality of food.
- financial benefits by better access to markets through farmer associations

Laws, regulations, policies and strategies of the Host Country that are of central relevance to the proposed project, as well as any other major trends in the relevant sector

CDM methodology to be used

The revised approved baseline methodology for afforestation and reforestation entitled "Simplified baseline and monitoring methodologies for small-scale afforestation and reforestation project activities under the clean development mechanism implemented on grassland or croplands " (AR-AMS0001/Version 04) will be applied.

PROJECT TIMELINE

STATUS OF THE PROJECT DEVELOPMENT

Date of achievement or expected achievement

Feasibility * January 2013

PIN * February 2013

PDD * March 2013

Validation * April 2013

National LoA April 2013

Letter of Approval

Expected start of construction/plantation

Expected start of operation * May/2013

Crediting period * May/2020

7 years (* 3) / 20 years (*3)

10 years / 30 years (fixed)

EXPECTED GHG EMISSION REDUCTIONS RESULTING FROM THE PROJECT

GHG targeted *

√CO₂

CH₄

N₂O

HFCs

PFCs

SF₆

ESTIMATED AMOUNT OF EMISSION REDUCTIONS

Average per year *

43,817,76 tons CO₂ eq

Total for the crediting Period

30,231,432 tons CO₂ eq

7 years renewable crediting period or 10 year fixed (non-renewable) crediting period. For forestry (LULUCF) projects 20 years renewable or 30 years fixed crediting period

ESTIMATED EMISSION REDUCTIONS TONS CO₂ EQ PER YEAR

For 7 years crediting period, estimated emission reduction per year is

121,71.6 tons CO₂ eq

7 years renewable crediting period or 10 year fixed (non-renewable) crediting period For forestry (LULUCF) projects 20 years renewable or 30 years fixed crediting period

ESTIMATED EMISSION REDUCTIONS TONS CO₂ EQ PER YEAR

Year 1 *	43,817,76 tons CO2 eq
Year 2 *	87,635,52 tons CO2 eq
Year 3 *	131,45328 tons CO2 eq
Total	262,90656 tons CO2 eq

FINANCIAL INFORMATION

Total investment US\$

SOURCES OF FINANCE

Loan Applicant * US\$

Loan Applicant % of

Local Bank(s) * **4,000,000** US\$

Local Bank(s) * **44.44** % of

International financial institution * US\$

International financial institution * % of

National grant * US\$

National grant percent of investment * % of

Foreign Development Assistance (ODA) * US\$

Foreign Development Assistance (ODA) * % of

Other * US\$

Other % of

FINANCIAL ANALYSIS OF THE PROJECT

IRR with CERs

IRR the “internal rate of return” is the discount rate that makes a project break even.

IRR without CERs

IRR the “internal rate of return” is the discount rate that makes a project break even.

TRANSACTION COSTS IN DETAIL (US\$)

Feasibility study *	US\$
PIN & PDD preparation	US\$
Validation *	US\$
Registration *	US\$
monitoring and 1st	
Verification	US\$

PROJECT RISKS

Are there any foreseen risks that might affect the implementation of the project?

Risks related to the country

Risks related to the project registration

Risks related to the project financing

High initial costs and lack of access to the financial system are the main barriers for rural households to invest in farming. A high cost farming inputs, tools, seeds fertilizer and pesticides. There is need for financial transformation, as seed funding for grants and subsidies to credit lines. That implies that the financial institution, a potential CER

buyer or a private investor would need to take the various risks of the programme if no public institution or international donor could play a role.

Other risks

ADDITIONAL INFORMATION

Any additional information