

## PROJECT IDEA NOTE (PIN)

<b>Project name</b>	(Same and Mwanga CDM Forest Plantation Project (SMFP))
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### A. Project description, type, location and schedule

<b>General description</b>	
A.1 Project description and proposed activities	<p>The proposed project is intended to achieve multiple objectives in terms of the restoration of degraded lands through improvement in the vegetative cover, enhanced supplies of forest products to local communities, and increases in the GHG removals. The project area covers several geographic units spread over the two districts (Mwanga and Same). The district council and local communities have traditionally lacked financial resources needed to restore the lands. Due to lack of investments over a long-period the lands have degraded. The public and community lands have shown significant decline in the productivity and have increasingly become susceptible to soil erosion, land slides, and other physiographic limitations. If no suitable measures are implemented to overcome these adverse influences, the lands may degrade further and continue to be the sources of GHG emissions from soil and vegetation pools.</p> <p>Financial and capacity constraints have historically prevented cost effective measures such as investments through afforestation/reforestation to restore lands from degradation. In this context, revenue from the sale of certified emission reduction credits (CERs) from the GHG removals from afforestation or reforestation under the CDM will be significant. The CDM incentive shall served as a catalyst to establish legally binding institutional arrangements and stakeholder relationships between the CCEEST and local groups that represent the rural communities.</p> <p>Out of the total project area to be identifies (approx. 20,000ha), the district councils and the project entity shall own 50% each. The project entity shall enter into contractual arrangement with the district councils and obtain authority to undertake afforestation/reforestation activities on the lands owned by the villages and manage them until canopy closure before the lands are transferred to mayoralities and local councils for subsequent management.</p> <p>The establishment of a mix of indigenous (native) and exotic species plantations has generally shown a cost-effective option to restore degraded lands and that afforestation activities with the naturalized and adaptive species planted in mixtures with the native species shall prevent soil erosion, stabilize slopes, and generate wood and non-wood product supplies to rural communities. Since native species often require better soil conditions, they can be planted on the sites that have been restored using naturalized species or mixtures of native and naturalized species.</p>
A.2 Technology to be employed	<p>One of the main technologies which will be employed under this project is reforestation through direct planting with environmental-friendly techniques on degraded lands. Good practice guidance and successful national and international technologies, as well as experiences gained from the National institutions e.g. SUA, Division of Forests (MNRT) will be adopted. Both indigenous and exotic species will planted (eg., eucalyptus, pine, cypress etc)</p>

	<p>The project entity shall strictly follow national guides and technical standard. Geographical Information System (GIS) and Geographical Positioning System (GPS) will be employed in the verification and monitoring of the implementation of the proposed A/R CDM project activity.</p> <p>Mechanization work is planned for site preparation (removing of brushes, where necessary) and soil preparation (ploughing and leveling, in some cases). The transplanting will be usually by hand, as well as the forest maintenance/tending operations until canopy closure. The works do not imply notable risks as long as it relay on currently used technique and technology. The scheme and schedule of planting should avoid the negative effect of frequent flooding or summer drought, some fencing to protected plantations against cattle grazing might be needed</p> <p>The district and national forestry departments and institutions will be consulted to provide the backbone technical and advisory guidance, including training courses, and conduct quality control to the preparation and implementation of the proposed A/R CDM project activity.</p> <p>The project participants shall seek advice from local, national, and international forestry management experts. The most up-to-date technologies and silvicultural models will be adopted, which will also demonstrate the viability of using carbon as a virtual cash crop in the degraded lands and arid lands of Mwangi and Same districts. No technology is expected to be transferred to the host party other than improving the existing forestry technologies and use of state of the art technologies available in the forestry industry.</p> <p>Both exotic and indigenous species will be planted, but the exotic species will dominate the project area as follows;</p> <p>Exotic species: <i>Eucalyptus camaldulensis</i>, <i>Eucalyptus Tereticornis</i>, <i>Casuarinas Equisetifolia</i>, <i>Cedrella Odorata</i>, <i>Acacia Mangium</i>, <i>Tectona Grandis</i>.</p> <p>Indigenous species: <i>Azelia Quanzensis</i>, <i>Khaya Annthotheca</i>, <i>Gmelina Arbores</i>, <i>Terminalia Superba</i>, <i>Trichilia Emetica</i></p>
<b>Proponent submitting the project (Project owner)</b>	
A.3 Name	SafariJet Services Ltd
A.4 Organizational category (choose one or more)	Private company
A.5 Other function(s) of the project developer in the project (choose one or more)	Financing preliminary works of the project, implementation of the project, Technical and managerial aspect of the project
A.6 Summary of relevant experience	SSL has already earmarked potential areas for establishing plantations in Tanzania and is in the process of acquiring about 100,000ha of land for afforestation activities, the company will first commit 50,000ha of land for CDM plantation activities. Plantations are being established in undulating grasslands where there are no trees and the land is neither suitable for settlements nor agriculture. SMFP is the first SSL project in forestry projects category and will undergo through an extensive audit process in order to obtain DOE certification for GHG projects, and will consult all stakeholders and government parties. The project will received DOE's certificate of Project Design and Tradable Carbon Offsets..
A.7 Address	P.O. Box 2758 Dar es Salaam, Tanzania.

A.8 Contact person	Mr. Milton Lazaro - Manging Director
A.9 Telephone / fax	Landline: +255 22 2125913 Celphone: +255 784 888 767
E-mail and web address, if any	lazaro@safarijet.com
<b>Project Climate change technical consultant</b>	
A.10 Name	The Center for Energy Environment Science and Technology
A.11 Organizational category (choose one or more)	Non-Governmental Organization
A.12 Other function(s) of the project developer in the project (choose one or more)	Climate Change Technical advisor to the project
A.13 Summary of relevant experience	CEEST has been at the forefront of most of the background studies related to climate change in Tanzania. The center has over 10 years of experience in building the prerequisite capacity in terms of training and information sharing on CDM. CEEST has built a solid collaborative base with national and international institutions. All experts in CDM and climate change in Tanzania have been and/or are members of CEEST's technical team.
A.14 Address	Kaunda Drive, Block No. 17. Oysterbay, P.O. Box 5511, Dar es Salaam, Tanzania
A.15 Contact person	Mr. Stephen M. Mwakifwamba
A.16 Telephone / fax	Tel: +255 22 2667569 / Fax: +255 22 2667569
A.17 E-mail and web address	Email: <a href="mailto:ceest@ceest.co.tz">ceest@ceest.co.tz</a> / Website: <a href="http://www.ceest.co.tz">www.ceest.co.tz</a>
<b>Sponsor(s) financing the project</b> (List and provide the following information for each project sponsor)	
A.18 Name	To be identified
A.19 Organizational category (choose one or more)	Government Government agency Municipality Private company Non-Governmental Organization
A.20 Address (include web address)	
A.21 Main activities	
A.22 Summary of the financials of the project sponsor (total assets, revenues, profit, etc.).	To be identified
<b>Type of project</b>	
A.23 Greenhouse gases targeted	CO <sub>2</sub>
A.2417 Type of activities	Sequestration/Conservation
A.25 Field of activities (Select code(s) of project)	Reforestation of degraded or arid lands by tree planting

<p>category(ies) from the list</p>	<p><b>Baseline Methodology to be employed:</b> AR-AM0003: “Afforestation and reforestation of degraded land through tree planting, assisted natural regeneration and control of animal grazing”</p> <p><b>Applicability</b> This methodology is applicable to the afforestation or reforestation of degraded land, which is subject to further degradation or remains in a low carbon steady state, through assisted natural regeneration, tree planting, or control of pre-project grazing and fuel wood collection activities (including on-site charcoal production).</p> <p><b>Leakage</b> There are three sources of the leakage covered by this methodology: GHGs emissions caused by vehicle fossil fuel combustion due to transportation of seedling, labours, staff and harvest products to or from project sites; Carbon stock decreases caused by displacement of pre-project grazing and fuel wood collection activities; Carbon stock decreases caused by the increased use of wood posts for fencing.</p> <p><math>LK = LK \text{ Vehicle} + LK \text{ Activity Displacement} + LK \text{ fencing}</math></p> <p>where:  <math>LK</math> = Total GHG emissions due to leakage; tonnes CO<sub>2</sub>-e  <math>LK \text{ Vehicle}</math> = Total GHG emissions due to fossil fuel combustion from vehicles; tonnes CO<sub>2</sub>-e  <math>LK \text{ Activity Displacement}</math> = Leakage due to activity displacement; tonnes CO<sub>2</sub>-e  <math>LK \text{ fencing}</math> = Leakage due to increased use of wood posts for fencing up to year <math>t^*</math>; tonnes CO<sub>2</sub>-e</p>
<p><b>Location of the project</b></p>	
<p>A.26 Country</p>	<p>United Republic of Tanzania</p>
<p>A.27 Nearest city</p>	<p>Kilimanjaro, Arusha and Tanga</p>
<p>A.28 Precise location. For multiple sites, include a list in Annex 6 (Include latitude and longitude if known).</p>	<p>Mwanga District is one of the six districts of Kilimanjaro Region. The district covers an area of 2,641 km<sup>2</sup> and lies between the latitude 3°46’ to 3°47’ South and longitude 37°35’ to 37°50’ East. It is bordered by Same district in the South, Simanjiro District in the West, Moshi Rural District to the North, and Kenya in the Northeast. The district mainly comprise of the Eastern and Western Lowlands (700-1000m above sea level) and the North Pare Highlands (1300-2200m above sea level). The Eastern and Western Lowlands occupy 600 km<sup>2</sup> (22,72%) and 1,233 km<sup>2</sup> (48,21%) respectively. The lowland areas include the water bodies of Lake Jipe and Nyumba ya Mungu Dam. The highland occupies only 808 km<sup>2</sup> (29,7%). A number of small rivers, streams and springs originate from the mountains. Mwanga district has a population of 115,620 people.</p> <p>The climate in Mwanga District is generally semi-arid which makes the district experience predominantly easterly winds which cause more precipitation (700-1000 mm/year) in the mountains and at the Eastern slopes because they are on the windward side of the highlands. In contrast, the Eastern and Western Lowlands are on the leeward side and receive less annual rainfall (500-650mm) with occurrences of severe droughts. The effects on the leeward side.</p> <p>On average precipitation is relative low, with about 60 % of the yearly rainfall in less</p>

than three months (period mid-March to May). September is the driest month with, on average, less than 10 mm of rainfall. Temperatures range from a minimum of 16°C, between July and August, and 32°C between January and February.

The Same District is located in the semi-arid plains of the Western Pare lowlands with coordinates; latitude 4°15' S and longitude 37°55' E . Rainfall distribution is bimodal, with an average annual rainfall of approximately 400–600mm. The temporary rains (November to January) are lower and less reliable than the main rains (March to May). Rainfall decreases and its variability increases towards the west. Mean temperatures range from 16°C (July to August) to 32°C (January). Potential evaporation exceeds rainfall in five to ten months of the year. The topography is characterized by scattered hills at the foot of the Pare Mountains, descending to undulating and rolling plains and flat, wide depressions. The highlands are the source of numerous springs and streams that drain into the permanent Pangani River. Many of these springs are perennial, but have low water yield and are used for domestic water and some supplementary irrigation. The steeper slopes are highly susceptible to soil erosion and vulnerable to landslides. With poor vegetation cover along the steep and mid slope areas, uncontrolled run-off can concentrate in small channels or rills leading to the formation of gullies and seasonal streams. Part of this run-off is diverted into crop fields, while the rest drains into the Pangani River. The majority of the villagers have their fields in the plains where run-off collects and is easy to manage.

**Expected schedule**

A.29 Earliest project start date (Year in which the project will be operational)	End of year 2009
A.30 Estimate of time required before becoming operational after approval of the CFD	Time required for financial commitments: 6 months Time required for legal matters: 3 months Time required for negotiations: 3 months Time required for establishment: 18 months
A.31 Year of the first expected CER / ERU / ICER / tCER / RMU / VER delivery	2012, allowing first 3 years for the trees to grow
A.32 Project lifetime (Number of years)	60 years.
A.33 Current status or phase of the project	Identification and pre-selection phase
A.34 Current status of the acceptance of the project by the Host Country (choose one)	The DNA is aware of the project and a Letter of Endorsement is under discussion or available
A.35 Position of the Host Country on the project (Are carbon sinks encouraged as CDM/JI activities? Describe the legal relationship between the Project Sponsor and the Owner of the future Emission Reductions? If the Project Sponsor intends to sell the Emission Reductions, is the Sponsor allowed to do so legally? Has the Host Country endorsed the project? If not, when will it do so? Is there a risk the Host	Tanzania's national sustainable development criteria for the CDM endorse LULUCF projects that occur in degraded or semi-arid and arid areas, therefore, this project is complying to that, since it is located in the degraded and semi-arid areas of Same and Mwanga districts .  Currently, the host country has not endorsed the project. However, the DNA through its publication "CDM Guide" recognizes that establishment of A/R projects in degraded or arid/semi-arid lands as a priority and terms this as a "fast track" project opportunity in the sector category. There is no significant risk that the host country through the DNA will not endorse the project

Country will not endorse the project? <i>Please also refer to Annex 7)</i>	
A.36 Position of the Host Country with regard to the Kyoto Protocol <i>(choose one)</i>	The Host Country is a Party to the Kyoto Protocol (i.e. has ratified or otherwise acceded to the Kyoto Protocol)

## B. Expected environmental and social benefits and risks

<b>Environmental benefits and risks</b>	
<p>B.1 Baseline scenario <i>(Please describe the most likely scenario in the absence of the proposed project and explain why the project leads to more carbon being sequestered than would otherwise occur. What would the future look like without the proposed project? Different scenarios may be envisaged, including the continuation of a current activity (“business-as-usual”), implementation of the proposed project activity and many others. Please also refer to Annex 3 on baseline methodology.)</i></p>	<p>The most likely scenario in absence of the proposed would be the continuation of the current land use. The baseline approach 22(a) - existing or historic carbon stocks, adopted from the decision 19/CP.9 is relevant in this project due to historical and existing patterns of the land use in the two districts that highlights the demands on land use and the resulting loss of productivity over the last several decades.</p> <p>The choice of this baseline scenario is based on the fact that there is lack of economically attractive alternative uses for lands under the project areas. The low and highly variable above and below-ground carbon pools also highlight the low productivity and few economically viable alternatives. The baseline carbon stock changes for the degraded lands are in project lands whose carbon pools are expected to lead to low steady state or negative carbon stock changes. Due to the degraded status of lands and their lack of economically attractiveness alternative uses for such lands, the continuation of historic land use is the only feasible alternative that can be identified in the absence of the project. The stakeholder consultations also indicate that the establishment of forests is the most important natural resource management issue and keeping the degraded lands in their current state will lead to further loss of carbon pools, if delayed further, the rehabilitation of these lands may not be technically and financially feasible in future.</p> <p>Historically, over 90% of population in the two districts live in rural areas and depend primarily on agriculture for their livelihood. Due to that, most of environmental problems in the area have a bearing on agriculture. These include cultivating close or in water sources and stream-valley bottoms; cultivating very close to riverbanks; Flat cultivation in both valley bottoms and steep mountain slopes; poor managed irrigation schemes; The impact of these practices include soil erosion and siltation of rivers, reduced flow, lowering of water table. Livestock keeping especially goats, sheep, chicken and other small animals is hampered by limited capacity in livestock management techniques.</p> <p>Natural forests occupy about 10% of the total area of which about 50% are traditional forests and the remainder governmental forest reserves. However, in the last two decades deforestation and overexploitation of the natural resources has been a serious problem in the districts. The causes for deforestation are for meeting the high demand for wood products, which are timber and wood for building materials, fuel-wood and charcoal. Also trees are fell to open up areas for new farms and houses as population density increases.</p> <p>Deforestation on the upper parts of mountains as well as inappropriate farming practices are contributing to land degradation. Mwanaga and Same districts are vulnerable to fires during the excessive dry periods. The fires are caused by slash and burn farming system practiced in the area. Shortage of pastures and drought has caused the formation of concentrations of people and animals. The increase is high in the grazing lowland areas</p>

	<p>as compared to the zero grazing in the highlands. The overpopulation of cattle and scattered households in areas has brought not only environmental degradation, but it has also caused frequent conflicts between pastoralists and other people as they fight over grazing lands (including crops) and drinking water for livestock.</p> <p>Although most of the villages in the districts has formed environmental committee, most of the villagers are unaware of the basic issues concerning natural resources and some are even reluctant to participate in conservation activities as there are no incentives. Communities are keen to first earn a living before they could think of conservation issues. Likewise communities are not fascinated to grow drought resistant crops, which are suitable for the area. They are stuck to growing maize, which does not do, very well compared to sorghum and cassava. Farmers have annual food shortages due to both inadequate production and the lack of cash for purchase of food and seasonal and erratic fluctuations of rains. As a result, rural households adopt a diverse range of livelihood strategies.</p> <p>The forest patches of native species found on the upper slopes have been largely replaced by exotic hardwoods. Patches of trees, thickets, shrubs and grasses are found on the mid-slopes with grasses and scattered shrubs and trees (mainly <i>Acacia</i> spp.) on the plains. In villages, households do not have enough income to support and sustain a reasonable standard of living.</p> <p>Lack of knowledge is regarded as a key constraint, both lack of access to knowledge, due to ineffective extension services, as well as the provision of complementary inputs (such as seeds). Availability of non-farm income is an indicator of access to financial capital and has a positive influence on investment. Financial capital is mainly used to pay for additional labour when investing in forestry.</p>
<p>B.2 Estimate of carbon sequestered or conserved (in metric tonnes of CO<sub>2</sub> equivalent – tCO<sub>2</sub>e. Please base estimates on the difference between the proposed project activity and the baseline scenario identified in B.1.)</p>	<p>Total Certified Emission Reductions (CERs) per year: 93,000tCO<sub>2</sub> -equivalent Total emission reduction for the Crediting period: 1,860,000tCO<sub>2</sub> -equivalent</p>
<p>B.3 Existing vegetation and land use (Eligibility)</p>	<p>How much land has a tree cover of &lt; 10%: ... the land tree cover is &lt; 10 % 10-30%: ... &gt; 30%: ...</p> <p>Were these roughly the same in 1990? <i>YES</i> (i) Vegetation on the land is below the forest thresholds adopted for the definition of forest by the DNA under decisions 16/CMP.1 and 5/CMP.1 ; and  (ii) All young natural stands and all plantations on the land are not expected to reach the minimum crown cover and minimum height chosen by the DNA to define forest; and  (iii) The land is not temporarily unstocked, as a result of human intervention such as harvesting or natural causes.</p>
<p>B.4 Leakage</p>	<p>NIL</p> <p><i>The activities planned under the project will cause small leakage, i.e. greenhouse</i></p>

	<i>emissions outside the project and baseline boundary E.g., some small agricultural or pastoral activities be displaced from the project sites to other locations. The current level of LULUCF activities in the country would be reduced by the project coming on-line due to a process of resource reallocation. Also some of these leakages will come from initial phase of plantation preparations by machines using fossil fuels (only for the first year of the project)</i>
B.5 Local environmental benefits and risks <i>(Please also refer to Annex 4 on environmental benefits and risks.)</i>	<p>The detailed environmental impact assessment shall be conducted when most of the areas that are eligible for A/R CDM the project activity have been identified.</p> <p>However, the project when implemented shall be expected to contribute to multiple national objectives such as increase in the forest cover, prevention of soil erosion, restoration of degraded lands, production of fuelwood, timber, and non timber products to meet the needs of rural communities, and the improvement in the carbon pools in arid/semi-arid lands. The project shall conserve biodiversity within the project activity boundary through protection of threatened species, improvement in the ecological succession, and restoration of habitats of endangered flora and fauna.</p> <p>There are some environment risks, such as exotic species introduced, pest and disease, fire, related to the presumed CDM AR project, and feasible method to address the risks is to undertake intensive monitoring</p>
B.6 Consistency between the project and the environmental priorities of the Host Country	The project is consistent with the environmental priorities of Tanzania as it involves planting in areas that are degraded or arid/semi-arid. Afforestation/reforestation of these areas in the government's priority sector.
<b>Socio-economic benefits and risks</b>	
B.7 How will the project improve the welfare of the community involved in it or surrounding it? What are the direct effects, which can be attributed to the project and which would not have occurred in a comparable situation without that project? <i>(e.g., employment creation, poverty alleviation, foreign exchange savings).</i> Indicate the number of communities and the number of people that will benefit from this project. Please also refer to Annex 5 on community benefits and risks.	The local population will benefit from the increased supplies of forest products. In the medium to long-term, the project will provide multiple products, services, and additional income from the sale of timber, and non-timber products such as medicinal plants, beekeeping etc., and biomass energy to alleviate the dependence on fossil fuels. The project activity is only possible with the active cooperation of the district councils, who shall own about half of the land under the project, and are expected to manage the afforested lands. The project will result in the creation of local employment through planting, weeding, tending, thinning, protection, and harvesting of tree species. The project will provide employment opportunities in remote rural areas for men and women, with men finding employment in the site preparation, planting and harvesting activities, and women in the nursery management, weeding, and the collection of non-timber forest products.
B.8 Are there other effects? <i>(e.g., training/education due to the introduction of new technologies and products, replication in the country or the region)</i>	The establishment of project activity in degraded lands shall promote community tree planting around the project area. This shall relieve pressure on the local forest resources by producing timber, building poles and fuel wood. The local communities in Mwanza and Same Districts will form the major workforce, thus improving their incomes in addition learning new ideas and technologies. The project shall employ Tanzanians both professional and technical staff to manage the project. Therefore to improve their work efficiency and enable them to adapt to new and changing technologies, in which training program will be implemented.

## C. Finance

<b>Project costs</b>	
C.1 Preparation costs <i>(feasibility studies, monitoring plan, PDD, etc.)</i>	US\$ 0.3 million



C.2 Establishment costs ( <i>site and soil preparation, seedlings, planting, weeding until planting is completed</i> )	US\$ 1.0 million
C.3 Operating costs ( <i>from planting onwards and for the duration of the project</i> )	US\$ 1.5 million
C.4 Other costs ( <i>explain</i> )	US\$ 0.2million
C.5 Total project costs	US\$ 3.0 million (approx)
<b>Sources of finance to be sought or already identified</b>	
C.6 Equity ( <i>Include names</i> )	US\$ ... million to be identified
C.7 Debt – Long-term ( <i>Include names of lenders</i> )	US\$ ... million to be identified
C.8 Debt – Short term ( <i>Include names of lenders</i> )	US\$ ... million to be identified
C.9 Investor contribution sought in upfront payment	( <i>US\$ million and clarification of the reasons</i> ) to be identified  ( <i>The quantum of advance payment will depend on the assessed risk of the project by the third part or the Bank, and will not exceed 25% of the total ER value purchased by the Carbon buyers or the Bank for the project. Any upfront payment will be discounted by a factor considered appropriate by the investor or the Bank for the project.</i> )
C.10 Indicative CER / ERU / ICER / tCER / RMU / VER price	Currently at the market the price of carbon ranges between US\$ 5 and US\$ 10 ( <i>subject to negotiation and financial due diligence</i> )
C.11 Emission Reductions Value (= <i>price per tCO<sub>2</sub>e * number of tCO<sub>2</sub>e</i> ) ( <i>say the price is US\$ 5 – 10 per tCO<sub>2</sub>e and using the conservative approach</i> )	US\$ 1.4 M per year US\$ 27M for 20 years

#### D. Risks

<b>Risks in the Project</b>	Please describe the factors that may cause delays in, or prevent implementation of the project
<b>Estimate the Degree of Risk</b>	
Technical risk	<input type="checkbox"/> High since the proposed technology is not commonly practised in Tanzania
Timing risk	<input type="checkbox"/> Low since project implementation depends very much on the finalization of CDM legal process, which might take longer time.
Budget risk	<input type="checkbox"/> Low since the developer will finance the project.

#### E. Other Relevant Information

Please mention any additional information or precisions to justify the project under CDM