

**The United Republic of Tanzania
The Forest Carbon Partnership Facility (FCPF)
Readiness Plan Idea Note (R-PIN)**

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Country submitting the R-PIN: The United Republic of Tanzania

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1. General description:

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c) Consultations

This R-PIN has been extensively revised by the REDD taskforce and also by involving other key stakeholders following comments by the World Bank technical team on the first draft PIN (of 30/07/2008). Furthermore, focused consultations with Government Ministries, departments, Agencies as well as public and private institutions such Sokoine University of Agriculture (SUA), Tanzania Forest Conservation Group (TFCG), CARE International in Tanzania, Tanzania Forest Research Institute (TAFORI), Ministry of Natural Resources and Tourism (MNRT), Vice President's Office (VPO)-Environment, Prime Minister's Office-Regional Administration and Local Government (PO-RALG) were conducted. Others consulted include UNDP, some district natural resources officers and natural resources advisors who attended the national policy review workshop on 27-28/11/08 in Dar-s-Salaam. Limited consultation with communities and the private sector has been done so far through their representatives in most cases through some NGOs but it is anticipated that a thorough consultation is envisaged as part of the process to have a detailed national REDD strategy in place. This is

the next stage under the facilitation of the Government of Norway and would cover a large part of Tanzania in order to obtain sufficient views and concerns from the local groups and other relevant actors.

2. Institutions responsible for:

Forest Conservation and Management

Tanzania has a wealth of institutions with responsibilities for forest activity, both within government, the parastatals, academia and civil society. The Forestry and Beekeeping Division (FBD) of the Ministry of Natural Resources and Tourism (MNRT) provides an increasing level of coordination of the stakeholders' process. The Government of Tanzania institutions that are responsible with forest law enforcement will be strengthened to assume the needed responsibilities to implementation REDD and readiness activities in the country. For instance, the surveillance units in place will be enhanced through on the job training to ensure that they would have relevant skills to communicate with the forest resources users and traders so that the latter can respect the law and comply accordingly. Furthermore, the forest dependent community through their established Environmental or Natural Resources Committees will be empowered to handle conservation and to ensure sustainable uses of forests and woodlands in their areas is upheld. The FBD through the Participatory Forest Management (PFM) will ensure that REDD approaches and/or strategies are community-oriented making sure that as one of the key stakeholders, forest dependent communities and groups like Community-Based Organizations (CBOs) are performing different roles and responsibilities at various levels to enhance conservation at the grassroots level and would be rewarded accordingly.

a) forest monitoring and forest inventories:

Monitoring and inventory activities will be shared and future responsibilities well defined in order to benefit from collateral synergies of expertise existing in the Forestry and Beekeeping Division (FBD) of the Ministry of Natural Resources and Tourism (MNRT) and other institutions and

agencies. This is most likely to be more cost effective and lead to harmonized and well coordinated approaches and therefore make REDD readiness more effective for the country. Specifically:

(i) *Monitoring and Assessment*

Monitoring and assessments of forests and woodlands including law enforcement are regular activities carried out by FBD under the forest law. Through the National Forestry and Beekeeping Programmes (NFBPs) and Database (NAFOBEDA) and projects such as the Tanzania Forest Management and Conservation Project (TFCMP) supported by the World Bank, the Conservation and Management of the Eastern Arc Mountain Forests (CMEAMF) supported by the Global Environment Facility (GEF) through UNDP and Catchment and Mangroves Management as well the Participatory Forest Management (PFM) and industrial plantations, FBD is able to undertake monitoring and assessment activities and therefore, to determine what is happening within the forests and woodlands throughout the country. This is further enhanced by the involvement and collaboration through the Natural Resources Management Programme under the MNRT and management of forests and woodlands through the District Councils under the Prime Minister's Office-Regional Administration and Local Government (PMO-RALG).

(ii) *Inventories*

The FBD through the Forest Resource surveys and inventory Section undertakes inventory activities though not on regular basis. For the next two to three years FBD will carry out the National Forest resources Inventory with support from the Government of Finland through FAO. This will be executed through the National Forestry and Beekeeping Programmes (NFBPs) and undertaken by a team of experts from both FBD and FAO. Other collaborator will include the World Wide Fund for Nature (WWF) that has been working in Tanzania in conservation of forests and woodlands including wildlife. Currently WWF is involved in forest inventory and monitoring of coastal forests and woodlands of high biodiversity values. This is strength to the national forest inventory through share expertise and resources. The Ministry of Lands, Housing and Human Settlements conduct inventories and assessments of land uses and mapping using remote sensing technologies. Other partners and collaborators like the University of Lands (UL) and Sokoine University of Agriculture (SUA) will be involved to ensure a broader participation and quality assurance and control values.

The REDD and Readiness activities are recent issues within forestry profession and therefore need careful planning and execution. The need and importance of inter-sector involvement and collaboration cannot be overemphasised in order to attain comprehensive inventory results. To attain sustainable forest inventories and information management there is need to improve and enhance FBD's capacity in terms of institutional arrangements and funding. The Monitoring, Reporting and Verification (MRV) aspects are crucial elements particularly regarding to establishment of a National Carbon Accounting and Information System. This system will be a collaborative partnership process in which all agencies involved in carbon stocks would be represented (forest, agriculture, energy, land, water, local government, academia, civil society and NGOs). The FBD has been conducting some reconnaissance forest inventories for instance with support from donors. The Tanzania Forest Conservation and Management Project (TFCMP), which is financed through the IDA credit, in 2005, conducted a reconnaissance inventory in 11 districts covering the Southern, Eastern and Western parts of Tanzania. Previously (1971-73) FBD conducted reconnaissance surveys and inventory covering natural forests and woodlands in Mtwara, Kilimanjaro, Tabora, Tanga regions as well as in Kilombaro District. Furthermore, some mapping has been done covering the Miombo woodlands especially Tabora region. Such information is available in the country but segregated however, what is needed is to assemble entire information and have it in a form that would allow proper and effective analysis and use. It is therefore evident that information/data

on forests and woodlands in Tanzania including carbon stocks will become more valuable than in the past. We need reliable information and becoming more transparent in the process of data collection, monitoring, reporting and verification.

b) forest law enforcement :

The Forestry and Beekeeping Division (FBD) of the Ministry of Natural Resources and Tourism (MNRT) has the overall responsibility to coordinate all aspects of forestry development in the country including REDD and readiness activities. The FBD is mandated on behalf of the Government to ensure forest governance and law enforcement under the Forest Act No. 14 of 2002 (Cap 323). The Act clearly defines the powers and responsibilities of the forest officers, defines prohibited activities especially in the Nature Forest Reserves, Forest Reserves both productive and protective, Mangroves and industrial plantations as well as the forests in general lands and those within the Village lands gazetted or with open access. The Act further confers prosecutorial powers to the Forest Officers for the offences done under the Act. The Forestry and Beekeeping Division, through the Forest and Surveillance Units (FSU) and Local Government Authorities, makes sure that the Forest Laws and regulations are enforced accordingly.

The FBD is aware that law enforcement cannot be a top-down control activity and therefore collaboration and working very closely with key stakeholders including local communities and forest dependent groups is indeed necessary. The 1998 forest policy and act (no. 14 of 2002) stress the need to empower local communities via CSOs and Village Governments to play increasing roles in setting local resource use legislation (e.g. Village by-laws) and enforcing such regulations. The legal framework in Tanzania therefore promotes empowerment of forest resources users so that sustainable forest management and usage could be attained. This means that with that in mind and based on the need to achieve sustainable development and attainment of the global objectives like the Millennium Development Goals (MDGs), the importance of implementation of REDD policy in Tanzania cannot be overemphasized.

c) forestry and forest conservation:

The REDD approach in Tanzania will involve a very large number of key stakeholders and groups performing different roles and responsibilities at different levels. On this regard and in the interest of attaining sustainable forest management, the FBD will collaborate with other institutions particularly the VPO-Division of Environment (VPO-E), the Prime Minister's Office-Regional Administration and Local Government (PMO-RALG), the National Environment Management Council (NEMC), the Private Sector, District and Urban Councils, Academic Institutions such as the Sokoine University of Agriculture (SUA), the Institute of Resources Assessment of the University of Dar-es-Salaam (IRAUDSM), Research Institutions such as the Tanzania Forest Research Institute (TAFORI), the Tanzania Tree Seed Agency (TTSA), both national and international Non-Governmental Organizations (NGOs) such as the Wildlife Conservation Society of Tanzania (WCST); Tanzania Forest Conservation Group (TFCG) or the Tanzania Association of Foresters (TAF) as national entities and the WWF or CARE International in Tanzania as international groups just to mention some would be involved. Also the Community-Based Organization (CBOs) and the forest adjacent Local Communities through the Participatory Forest Management (PFM) are important stakeholders. Conservation and forest management will be a mix of protected areas and sustainable use regimes for forests and woodlands in general and village lands. It is also crucial that non-public umbrella organizations will be needed to coordinate stakeholders' interests and to ensure required capacity is in place to effective and sustainable performance. For instance, in providing support to grass root organizations like CBOs in terms of training in forest inventories and registering carbon stock changes

d) coordination across forest and agriculture sectors, and rural development:

In order to ensure effective involvement of stakeholders in the national REDD schemes, clear coordination would be required to avoid unnecessary conflicts or duplication of efforts and misuse of financial and human resources. The National Climate Change Steering Committee (NCCSC), which is overseen by the Vice Presidents Office-Division of Environment (VPO-E) and entrusted to handle all climate change matters in the country, will serve as the top policy and decision making body including REDD related schemes. The designated Ministry for forestry matters in Tanzania, in this case, the Ministry of Natural Resources and Tourism (MNRT) through the Directorate of Forestry and Beekeeping (FBD) will report to the NCCSC on all matters pertaining to REDD scheme in Tanzania. Also there will be a National REDD Technical Committee (NRTC) to oversee REDD matters in the country. The Director of Forestry and Beekeeping (DFoB) in the MNRT will convene and chair the regular meetings of NRTC. Furthermore, to manage and run REDD activities on a daily basis there will be a National REDD Coordinator under the DFoB in the MNRT and would be assisted by the District REDD Coordinators. The FBD will ensure that forest/woodland conservation and management issues are well mainstreamed into the Prime Minister's Office, Regional Administration and Local Government (PMO-RALG) structure and in collaboration with the Ministries of: Agriculture and Food Security, Livestock and Fisheries, Energy and Minerals, Water and Irrigation, the MNRT will prepared guidelines to ensure smooth reporting of REDD related matters .

3. Current country situation:

a) Deforestation/ forest degradation in Tanzania

Forest status

According to the Tanzanian forest policy (MNRT 1998) the country has a total of 33.5 million hectares of forests and woodlands. Available data on the status of the different types of Tanzanian forest is summarized below, from various sources.

Table 1. Forest types and status (where known) in Tanzania, with rates of loss (where known)

Forest type	Historical Area	Area 1990	Area 2000	Percentage loss (%)
Miombo Woodlands ¹	40% of land area (rough estimate)	Only partial data	Only partial data	-13%
Acacia Savanna	No data	No data	No data	
Eastern Arc Mountains ²	17,992 km ²	3,550.90 km ²	3,531.80 km ²	-1 %
Kenya/Tanzania Mountains	No data	No data	No data	
Eastern African Coastal Forests ³	136379 km ²	7,042 km ²	6,841.5 km ²	- 7 %
Guinea-Congolian forests	Below 5000 km ²	No data	6,700 km ²	
Mangrove forests ⁴	No data	1,095.93 km ²	1,081.38 km ²	-2 %

1- Data from a partial sample of miombo in Eastern Tanzania (FBD 2005) *Forest Area assessment for the Eastern Arc Mountains..* Forestry and Beekeeping Division, Ministry of Natural Resources and Tourism, Dar es Salaam. www.easternarc.or.tz

2 – FBD 2005 (ibid)

3 – Tabor, Mbilinyi and Kashigali (in prep). Forest area assessment for the coastal forests (this assumes that all this ecoregion was originally forested)

4 – Wang *et al* 2003. Remote Sensing of Mangrove Change Along the Tanzania Coast. *Marine Geodesy*, 26:35–48, 2003

Out of the total area, about 20 million hectares of remaining forest consists of woodlands (miombo and Acacia) that are managed communally or under the open access management regime, often with no management guidelines. Of the rest, about 13 million hectares have been gazetted as forest reserves, around 600 owned by the central government and 200 by the local authorities. There is also an increasing number of Village Forest Reserves, with 2006 data indicating that these management approaches cover 3.6 million ha of forest land distributed across 1788 villages nationally.

Over 2 million of forests/woodlands are also found within National Parks and Game Reserves managed by the Tanzania National Parks (TANAPA) and Wildlife Division (WD) respectively. Industrial timber plantations cover approximately 90,000 hectares, and forest is also found in private ownership. (ref: Arc Journal No 20, Special issue on CEPF Investment in the Eastern Arc and Coastal Forests of Tanzania and Kenya, 2007; the Arc Journal No 21 2007 is a special issues covering aspects of Participatory Forest Management (PFM) and Forest governance provide useful reference materials and baseline data/information to begin with.. The idea is to improve conservation through increased protected area network and establishment of corridors. Previously the Arc Journal has outlined how critical the Eastern Arc Mountains are in the provision of water to hydro-electrical power generation plants, irrigation and also as drinking water to the coastal cities of eastern Tanzania. Aside from this essential resource provision to the citizens of Tanzania there is growing global concern about the impacts of forest removal on speeding up climate change and the importance of the carbon that is stored in natural vegetation, especially trees.

Rate of forest decline (Deforestation)

Most of the deforestation and forest degradation is taking place in forests and woodlands found in general land and some in village lands (about 49% of total forestland). These forests and woodlands do not have legal protection and therefore stand all the chances for human activities that would lead to forest degradation (open access regime). Because of such unsecured land tenure system characterized by shifting cultivation, rampant annual wild fires and unsustainable harvesting of tree for wood fuels, poles, timber overgrazing, the area of forests and woodlands is showing a declining trend in Tanzania. The latest estimation of deforestation rate nationally is 91,200 ha per annum (FAO 2007). Experiences in Tanzania indicate that deforestation rate is estimated to be between 130,000 to about 500,000 ha most of which occur in forests found in general land. No detailed study has been conducted but it hoped that a full forest inventory would be conducted throughout the country for 2009-2010. This will provide a reliable estimate of deforestation rate in Tanzania. Recent figures from FAO (2008) indicate a deforestation rate of about 412,000 ha annually. This may be close to the actual figure but still needs some ground truthing and confirmation. More detailed deforestation rates are available for some specific forest types in Tanzania – for example, in the Eastern Arc Mountains and the lowland Coastal Forests—where rates of deforestation have been calculated from 1990-2000, and are currently being updated by 2007. These data are summarized in the table above. In general the forest habitats declined between 1-2% over the period 1990-2000, whereas miombo woodlands declined faster. To some extent this is because most forest habitats have either been cleared already, or are protected in reserves. This work on Eastern Arc and Coastal Forests was led by Sokoine University of Agriculture, with funding from CEPF and technical input from CI, WWF and others. Cutting trees removes storage capacity of forests/woodlands as well as eventually releasing Carbon to the atmosphere in the form of CO₂—a gas, which is greatly responsible for global warming. More detailed work is however, needed for national assessment of deforestation rates and to be urgently undertaken in Tanzania, building upon the successful pilot studies that have recently been concluded (2008) for the Coastal and Eastern Arc Mountains Forests.

The Miombo woodlands cover large areas of South-eastern and western Tanzania. These areas are seen as available for agricultural development and large tracks are cleared for growing tobacco and other crops. Biofuel such as *Jatropha curcas* are planning further land use changes. It is possible that through REDD interventions some of the challenges raised would be addressed and solutions found through the collaborative and participatory manners with local communities and forest depended groups becoming the main beneficiaries.

Levels of degradation

In terms of degradation, it is estimated that over 500,000 ha of forests and woodlands especially in general lands are degraded annually (National Forest Programme, 2001). Various studies have also been conducted in the levels of degradation to Eastern Arc and lowland Coastal Forests, resulting in a database of 2,800 forest plots and 500 km of disturbance transects from over 50 sites; these data are in the process of being analysed to assess levels of

forest degradation and to develop a model of degradation for eastern Tanzania. Despite the above, considerable further effort is required to develop a proper understanding of the level of degradation to the woodland and forest resources of Tanzania, and the impacts on carbon storage.

Importance of protected forests

A recent assessment of carbon in Tanzania's protected area network undertaken by the Valuing the Arc Programme and the Natural Capital Project (www.easternarc.or.tz), in collaboration with the Sokoine University of Agriculture (VTA unpublished data), suggests that about 35% of the carbon in the eastern half of the country is found within protected areas. The highest carbon density in protected sites is found in Forest Reserves and Nature Reserves that are managed by FBD. The largest unprotected carbon stocks are found in the wetlands and in unprotected forests and woodlands in general lands. In the wetlands the carbon storage has also been estimated to be up to 600 tons hectare⁻¹, mainly in the soils. In Tanzania forests are crucial resources especially for water catchment and environmental protection purposes. It is through such national values including biodiversity protection that makes the government attach special consideration to forest conservation and sustainable management. With REDD policies on board, the government will ensure that forests and woodlands will continue to be valuable assets not only to the people of Tanzania but also to benefit global communities as important carbon sinks. Over the past 15 years the government has been working and collaborated with the local communities to make sure that forests and woodlands in village and community lands are protected and sustainably utilized. The village council has been the institution handling and implements PFM activities through the Village Environmental or Natural Resources Committees. The existing institutional set up at the village or community level in Tanzania will enable implementation of REDD activities without serious concerns.

b) Estimates of greenhouse or carbon dioxide emissions from deforestation and forest degradation in Tanzania

Despite the fact that Tanzania's forests and woodlands contribute significantly to carbon storage and sequestration, the quantity of actual carbon that is currently stored in the forests and woodlands across the country is not yet established. Some initial work on carbon released due to forest loss has, however, been conducted in Tanzania. In 2006, the Government of Tanzania, through the Eastern Arc Mountain Forest project, held the first carbon forest awareness workshop, facilitated by the Edinburgh Carbon Programme from UK. This workshop started the thinking and documentation taken of carbon in Tanzania including the National Carbon Concept Note (see Annex 3).

Loss through deforestation

In 2006 the FBD through the Conservation and Management of Eastern Arc Mountain forest project conducted some pilot studies to establish *how much carbon is stored in the eastern arc mountain forests in Tanzania?* Preliminary results indicated current storage to be 151.7 million tons of carbon, primarily in the natural forest. Of this total amount 91.7 million tons are found in the existing reserves. As some proposed Forest Reserves that are *de facto* protected were not included, a more plausible estimate is that >100 million tons of carbon are stored within the network (60 % of total carbon stock). Deforestation over the past 20 years resulted in the loss of 34 million tons of carbon from these mountains. Much was from the unprotected woodlands and forests outside the network of protected areas; rates of deforestation in the reserves being insignificant.

Loss through degradation

There is not much data across Tanzania on the impacts of disturbance on carbon storage. Detailed assessments of levels of degradation and impacts on carbon storage are available for the Eastern Arc Mountains and lowland coastal forests, and for a few of the reserved areas of woodlands. These

indicate that degradation processes in the Eastern Arc forests reduce the carbon storage from 300 tons per hectare in pristine forest, to less than 100 tons per hectare in degraded forest (FBD 2007). Across the Eastern Arc Mountains this equates to a potential loss of 66 million tons of carbon from reserves, which might be regained, if the reserves were better managed. Degradation reduces carbon storage in coastal forests from 157 to 33 tons per hectare (FBD 2007), and in woodlands from 87 to 33 tons per hectare (FBD 2007). For some other forest types there are no available data on the impacts of degradation on the carbon storage.

Table 2. Impacts of degradation on the carbon stored in Tanzanian forests (stem, branches, and roots – not soil carbon).

Forest type	Carbon in pristine forest (tons/ha)	Carbon in heavily degraded forest (tons/ha)	Loss through degradation (tons/ha)
Miombo Woodlands	87	33	54
Acacia Savanna	No estimates available	No estimates available	-
Eastern Arc Mountains	306	83	223
Kenya/Tanzania Mountains	No estimates available	No estimates available	-
Eastern African Coastal Forests (Dar to Rufiji)	157	33	124
Guinea-Congolian forests	No estimates available	No estimates available	-
Mangrove forests	No estimates available	No estimates available	-

All data from: FBD, 2007. *Carbon Ecological Services*. Forestry and Beekeeping Division, Ministry of Natural Resources and Tourism, Dar es Salaam.

www.easternarc.or.tz

Information on carbon sequestration

The rate of sequestration of carbon by the various forested habitats in Tanzania is not well known. However, studies are being undertaken in the miombo woodlands (Sokoine University) and Eastern Arc Mountains (Valuing the Arc Programme and Sokoine University) to assess rates of sequestration in these different habitats and at different altitudes and climatic regimes. Preliminary results will be available during 2009. Other studies have also shown that Agroforestry has the potential to sequester 2 to 5 t C ha⁻¹ year⁻¹ while the rehabilitation of degraded land can sequester 0.25 to 0.9 t C ha⁻¹ year⁻¹.

Against this background, of incomplete knowledge and a lack of compiled data from existing studies, there is an urgent need to conduct further detailed assessments on the current carbon stocks and the potential of Tanzania's forests to participating in the carbon trade and to benefit the country's economy.

c) Data available for estimating deforestation and/or forest degradation

Tanzania has long history of information collection and analysis around forest resource loss and degradation. Key studies are:

- Land use and Natural Resource Mapping for Tanzania. MNRT, United Republic of Tanzania (1997) via Hearing Surveys and IRA 1: 250,000 maps;
- Mapping of Mangroves Forests in Tanzania (1991–1992);
- Mapping of Miombo woodlands in Tabora Region (IRA of University of Dar Es Salaam during the 1995-2000 Forest Resources Management Project-FRMP) supported by the WB-IDA credit;

- Global Forest Resources Assessment (FRA) 2010, Pre-filled Country Report. FAO 2008;
- The 1900-2000 Forest Cover and Change in the Eastern Arc Mountains and Coastal Forests of Tanzania and Kenya (Maps: 1/1,000,000) from FBD/CEPF;
- Database of gazetted National Forest Reserves, MNRT, 2008 (Published);
- National Forest Assessment 2008-2011. FAO/URT (2008) – Project Document
- Topographic sheets of 1970 (Surveys and Mapping Division);
- SUA –remote sensing maps possibly of 5 year intervals from 2000;
- Ardhi University probably remote sensing maps on 5 year intervals since 1990
- Databases of 2,800 forest plots in Eastern Tanzania and 500 km of forest disturbance transects. Mainly in the montane Eastern Arc and lowland coastal forests, GEF supported project in Eastern Arc, Forest Threat Reduction Assessment.

d) Main causes of deforestation and/or forest degradation

- **Deforestation:** the drivers of deforestation in Tanzania are particularly related to agricultural expansion (slash and burn), which is a result of weak rural economy and widespread poverty among the rural communities. Other causes include wild fires, uncontrolled mining and clearing of woodlands for growing biofuels. There is an increasing demand for biofuel production especially in the Coastal areas. For instance, over 100,000ha of Village Miombo woodlands in Kilwa district alone in Lindi region Southern Tanzania, was allocated to investors to plant *Jatropha curcus* to process biofuel. Clearing and over-exploitation of forest and woodland resources by refugees especially in the Western parts of the country for settlements and wood utilization for various needs also contributes to deforestation in Tanzania.
- **Forest degradation** is mainly fuelled by overstocking of livestock, which result in serious degradation of Miombo and Savannah woodlands. Other drivers include illegal logging/lumbering, uncontrolled tree cutting for charcoal production. Charcoal is widely used in the urban areas especially in highly populated cities like Dar-Es-Salaam. To meet demand for charcoal, substantial amounts of wood is used and especially when the production technology in use (earth kilns) has very low efficiency thereby leading to great losses in terms of wood energy. For instance, to produce one tone of charcoal ten tones of wood are used. There are no immediate solutions to this and charcoal will remain the main domestic source of energy for cooking in Tanzania as no other affordable alternatives sources for cooking energy in the foreseeable future are likely to be accessed by the majority of the households presently using charcoal solely for cooking. That means charcoal production will continue to cause serious forest degradation. The Forest Policy and the Renewable Energy Policy advocate for increased tree planning and encourages the private sector to invest in energy plantations but so far the response has been not encouraging. Use of natural gas for cooking especially in urban areas could be a good option but requires heavy investments in the infrastructure to ensure sustainable supply of natural gases to many households particularly for the Dar Es Salaam residents. Probably REDD could provide some insights towards reaching a sustainable solution and/or outcomes.

e) Key issues in the area of forest law enforcement and forest sector governance are:

- Increasing awareness to policy makers and decision makers at all levels including local communities in particular the forest adjacent communities on the benefits and value for conservation of forests and biodiversity;
- Empowerment to local communities, NGOs and the civil society as a whole to become legitimate owners and managers of the forest and woodland resources found within their areas . Local communities involved in conservation and management of central and local authorities forest reserves through the Participatory Forest Management (PFM) and the Joint Forest Management (JFM) initiatives. Empowerment needs to be accompanied by financial incentives for communities. REDD resources are seen as a major incentive for communities to maintain forest cover on village land.
- Operationalisation of concession guidelines and encourage the private sector to invest in forestry with a focus on both forest plantations and management and utilization of natural forests and woodlands on a sustainable basis;
- Clarity in land-use and forest resources tenure rights to various users for effective conservation and sustainable utilization. Undefined ownership encourages misuse of forest lands and resources;
- Forest policy and legislation review to encompass emerging new issues such as REDD or aspects of climate change and global warming aspects;
- The FBD has established seven surveillance units across the country including the marine fast boat patrols. However, the need to build more capacity to enforce the forest laws cannot be overemphasized;
- Inadequate financing of the forest sector . In this regard, the potential financing from REDD becomes of huge importance;
- Inadequate human resources especially in the District Councils where bulk of natural forests are found;
- Equipment and revenue/benefit sharing between central and local government on the one hand and communities on the other;
- District Councils to manage all forests and woodlands within their jurisdiction based on approved Forest Management Plans;
- Forest plantations managed according to approved management plan
- Harvesting guidelines established and in use making sure that issuance of logging or forest products harvesting is based on approved management plans ;
- Effective control on log export ban and corrupt practices among the forest practitioners including the forest products traders.

4) Data available on forest dwellers in lands potentially targeted for REDD activities (including indigenous peoples and other forest dwellers)

- Not applicable however, most of the territorial and local authority Forests Reserves are surrounded by villages and the local communities depend on these forests and others in general and village lands for their livelihoods. The high dependence on the natural forests and other biodiversity resources by majority of the local populations makes the forests and woodlands potential areas for REDD activities to ensure a balanced conservation with meeting local inhabitants' requirements mainly for food security, good shelter and income generation. Tanzania has high level of income poverty across the country hence through REDD initiatives probably the situation could be improved. There is urgent need to institute a process that ensure smooth engagement of forest adjacent and forest/woodlands dependent local communities in the national REDD development strategy and as part of awareness raising efforts.
- It is anticipated that REDD approaches in Tanzania will involve a large number of stakeholders including local community organizations and groups with different roles and responsibilities. It will be important to take stock of who is doing what and where as well as to establish their interests and commitments to participate in the REDD activities. On the other hand, non-state umbrella organizations will be needed to bundle forest depended communities' interests and to provide necessary support in terms of capacity building through training in forest inventories and in measuring and reporting carbon stock changes based on the forest and woodland resources in their locality. Regularly follow-up and support would be needed to make sure that local community organizations are performing well and sustainably running their business cases.
- Participatory Forest Management in Tanzania has been largely funded by donors either through NGOs or the Forestry and Beekeeping Division and of late the World Bank through Tanzania Social Action Fund (TASAF). Many of the main organizations, projects and donor support the actions of communities to ensure sustainable forest management and to improve livelihoods in rural areas. In recent years there has been a shift from site-based projects to mainstreaming donor funds through local or national government institutions. The impact of these funding channels on the spread of PFM at local levels is scaling up. Currently support from the World Bank, the government of Finland and Government of Denmark covering in total 58 districts throughout the mainland intends to build the local capacity in forest management and ensuring sustainable flow of benefits to the rural poor. Support from the government of Norway through REDD will complement these efforts and ensure that benefits to local communities through forest conservation and sustainable management are enhanced. The national REDD strategy will define how support from government of Norway will flow to the intended beneficiaries at the community level.

5. Key elements of the *current* strategy or programmes that your government or other groups have put in place to address deforestation and forest degradation, if any:

(Appendix 2: The National Forest Programme Executive Summary) : Also Executive Summary of the Eastern Arc Conservation Strategy

a) What government stakeholder or other process was used to arrive at current strategy/programme?

Participatory and Consultative process under: Tanzania Forest Action (TFAP), 1989 & 1992 ? Forest Policy 1998 ? National Forest Programme (NFP 2001). Furthermore, planning and implementation of Participatory Forest Management (PFM) and Joint Forest Management (JFM) accomplished through participatory and consultative processes with the stakeholders especially the forest adjacent local communities, CBOs and

NGOs. The central Government (FBD) and the District Councils could enter into agreements with the local communities to manage important forests and woodlands after thorough consultations have been made. Also the Villages are assisted to gazette own Village Forest Reserves through an intensive consultation process where majority of the village participate and agree. For example, the Eastern Arc Mountain Forests Conservation Strategy was developed through a participatory process. In this case all the 15 Districts and 5 Regional authorities were involved and consulted throughout at every stage of the three year process of designing the strategy. Representatives of all villages adjacent to about 150 Forests Reserves in the Eastern Arc mountains including Village Environmental Committees, NGOs and some influential/respectable village elders were involved and provided very useful ideas.

On the other hand REDD is a recent initiative hence with limited consultations. The government of Tanzania considers REDD a viable option that can provide opportunities for Tanzania to meet her conservation and management of forests, woodlands and biodiversity on a sustainable basis. The global REDD policy conforms to Tanzania's goal for economic growth and poverty reduction strategy with great emphasis on local community livelihoods improvements. In that regard the government will work very closely with local actors particularly the NGOs and CBOs to sensitize and educate the forest dependent communities on REDD issues. The ultimate aim is to explicitly recognize and address the needs of local and indigenous communities when actions are taken to reduce emissions from deforestation and forest degradation. In order to attain effective involvement of local communities and other key stakeholders in national REDD schemes, serious consultations would be undertaken and coordination enhanced to avoid conflicts and duplication of efforts.

b) Major programmes or policies in place at the national, and sub national level

- Forest Policy 1998 (under review) and the Forest Act No. 14 of 2002;
- Beekeeping Policy 1998 and Beekeeping Act No. 15 of 2002;
- Land Policy 1999
- Environmental Policy 1997
- National Development Vision 2025
- National Forest Programme, 2001
- National Beekeeping programme, 2001
- National Land use plan and Village land-use Plans;
- Poverty and Business Formalization Programme (MUKURABITA)
- The National Strategy for Growth and Reduction of Poverty (NSGRP) MUKUKUTA
- Agriculture and Food Security Policies;
- Livestock Policy and Legislation;
- Water and Irrigation Policies;
- Village Land Policy (1999) and Village Land Act (1999);
- Wildlife Policy (revised 2008) and Wildlife Act (under review)
- Energy Policy and legislation;
- Mining Policy and Legislation;

- The Road policy and Legislation;
- The National Investments Policy;
- Eastern Arc Mountain forests Conservation Strategy (2008);
- Tourism Policy (2008) and Tourism Act (2008).

6. The current thinking on what would be needed to reduce deforestation and forest degradation in Tanzania .

The current thinking on programmes and activities to reduce deforestation and degradation in Tanzania are detailed in the National Forest Programme (NFP) -Appendix 2

a) The programs will address the main causes of deforestation through:

- Participatory Forest Management (JFM and CBFM) expanded and working;
- Private Sector Involvement in establishment and management of forest plantations
- Law enforcement and surveillance improved;
- Payment for environmental services (carbon , water, biodiversity etc.);
- Sector wide approach planning for the forestry sector;
- National REDD strategy.

b) Cross-sectoral programmes or policies will also play a role in Tanzania REDD strategy through/under

- National Land Use plan;
- National Environmental Action Plan ;
- Agriculture Sector Development Programme (ASDP);
- National Biodiversity Action Plan ;
- Eastern Arc Mountain Forests Conservation Strategy;
- Water sector programme;
- National Adaptation Programme of Action (NAPA);
- Payments for environmental services (PES) i.e. water as an environmental service product through which users can support conservation of catchment forests and other watershed in order to ensure sustainable flow of water hence meeting requirements of various water users in industries, commerce and agriculture through irrigation. Some efforts in Tanzania have started i.e. through WWF in collaboration with CARE international in Tanzania working in the Uluguru Mountains and East Usambaras. REDD would be an added advantage towards

accomplishing such needs to enhance conservation and improve local living conditions.

c) Potential relationship between potential REDD strategies and country's broader development agenda in the forest and other relevant sectors (e.g., agriculture, water, energy, transportation), have been considered.

- Refer Appendix 2: National Forest Programme
- The National Strategy for Growth and Reduction of Poverty (NSGRP)
- Rural Development Strategy;
- Construction industries especially in dam, housing and road sectors;
- Water Sector development programmes especially through water Basins management initiatives;
- The Renewable Energy sources development programme;
- Wood energy efficiency improvement programme.

d) Technical assistance planned and/or received on REDD

- Bilateral cooperation Agreement on REDD with the Royal Norwegian Government
- Redness Plan Idea Note to FCPF is planned (e.g., technical consulting, analysis of deforestation or forest degradation in country, under FCPF);
- UN-REDD initiatives: UN-REDD is funded by Government of Norway in nine tropical countries, including Tanzania. UN-REDD is implemented by UNDP, UNEP and FAO in collaboration with both global (methodologies, tools, learning) and national companies. UN-REDD is starting the programme development in Tanzania with initial development mission in November 2008.

7. The type of stakeholder consultation process

Tanzania has a long history of stakeholders' consultation over natural resources, including forestry. This was demonstrated through the past Tanzania Forest Action Plan; development of policy and legislation, and more recent rolling out of PFM mechanisms with community key elements of the conservation scheme would include:

a) To create a dialogue with stakeholders about their viewpoints

- Participatory Appraisal/ Stakeholder analysis
- Technical Consultative processes

b) To evaluate the role various stakeholders can play in developing and implementing strategies or programmes under FCPF support

- Stakeholders Analysis
- Problem and objective Tree analysis and role modeling

c) Stakeholders consultation in the forest sector about new programs or policies are through

- Participatory planning
- Consultative workshops/Seminars/meetings

d) Stakeholder consultations on REDD or reducing deforestation

- Have been held in the past years, the groups involved are indicated in appendix 1, and 3 (Consultation has been done (2005-2008) all over the Country but basically on conservation and sustainable use of forest and woodland resources. The issue of REDD has been recently captured into the discussions. Still not many stakeholders are conversant with REDD issues;

e) Stakeholder consultation and implementation role discussion process that might be used for discussions across government agencies, institutes

- Participatory and Consultative planning and pilot implementation initiatives;
- Government agencies and institutions would be involved in policy formulation and regulation.

f) Stakeholder consultation and implementation Across state or other subnational governments or institutions

- Participatory and Consultative planning and pilot implementation initiative.

g) Stakeholder consultation and implementation For other stakeholders on forest and agriculture lands and sectors, (e.g., NGOs, private sector, etc.)

- Participatory and Consultative planning and pilot implementation initiatives;
- Project formulation, capacity building, community mobilization, raising awareness of stakeholders.

h) For forest-dwelling indigenous peoples and other forest dwellers such as the forest adjacent local communities throughout the country are usually involved and consulted.

8. Implementing REDD strategies :

The REDD strategy is the core component of Tanzania's ability to deliver REDD programmes. Key principles include strong national ownership, increased capacity within government and partners for implementing REDD programmes. Components include:

a) The potential challenges to introducing effective REDD strategies or programmes, and how might they be overcome

Key Challenges include:

- Inadequate financing: Could be overcome by FCPF or through bilateral and multilateral support;
- Inadequate technical capacity: Could be overcome by capacity building at national and district levels and expansion of intake at the Forestry training institute at Olmotonyi, Arusha Region. If financial resources allow FBD or the District Councils could outsource or contract potential services providers like WWF, CARE International in Tanzania, Tanzania Association of Foresters (TAF), Tanzania Forest Conservation group (TFCCG) to implement some activities;
- Governance issues like weak law enforcement: Could be overcome by building the capacity for law enforcement in terms of financial, human resources and equipment;

- Lack of consistency between REDD plans and other development plans or programmes: Could be overcome by sector wide approach and effective consultations between the key sectors;
- Lack of an acceptable national implementation and monitoring framework: A national REDD framework needs to be developed.
- Low awareness of communities on carbon issues: Awareness campaigns to inform the general public on benefits of REDD.

b) Performance-based payments though REDD could be a major incentive for implementing a more coherent strategy to tackle deforestation, reasons:

- Improved quality of life and social well being of communities
- Improved sustainable use of forest products and resources
- Improved Good governance of the forest resource base

The main objective of REDD is to provide some incentives to motivate forest resources users and other stakeholders to reduce the rate of deforestation and forest degradation (incentives to avoid deforestation and/or forest degradation). This means REDD policies should contribute significantly reverse the negative impacts resulting from threats facing the forests and woodlands as outcomes of unsustainable human activities. Carbon stocks that would be generated over the years should be the basis for rewarding the people including groups and communities. Funds could be paid directly to beneficiaries or establish a carbon fund and all the monies would be channeled through the fund before being paid to intended parties. For equity reasons various other models such as distribution of benefits internally on the basis of efforts or inputs rather than outputs (of carbon savings) could be applied. Communities may be paid for their work in measuring carbon stocks including reporting. Also benefits could be distributed in kind rather than in financial forms depending on local conditions and preferences. All in all, what is important is making sure that efforts are made to describe in a clear and accountable way through which distribution of benefits resulting from improved conservation and forest management can reach the beneficiaries at the grassroots. This will be an important aspect and undertaking during the REDD strategy development in Tanzania. The overwhelming need as regards to local communities and/or groups or people in the forests/woodlands is to make sure that they are made aware and involved right from the beginning.

9. REDD strategy monitoring and implementation:

a) Forest cover and land use change monitoring to-date:

- Forest Cover and Land use change is monitored by the Forestry and Beekeeping Division, through Forest Inventories, Forest Assessments and ground truthing;
- National Forest Database (NAFOBEDA) has been established and a National Forest Resource Assessment and Monitoring (NAFORMA) is at last stages for inception, these shall be the permanent tools to monitor REDD strategy and implementation;
- NARFORMA is likely to be introduced;
- Remote sensing techniques ;
- Links into the National Strategy for Growth and Reduction of Poverty (MKUKUTA) indicators;
- The Eastern Arc Mountain Forests Socio-economic Monitoring Programme

b) Constraints of the current monitoring system

- NAFOBEDA system cannot detect forest degradation of forest stand;
- NAFOBEDA –has not been adopted countrywide;
- Low capacity at district and Ministry levels to implement NAFOBEDA;
- Very limited monitoring of forest resources, especially the general lands and district forests at present due to lack of technical and financial capacity;
- How to monitor and report fire incidences before they could cause serious forest destruction;

c) REDD activities and programme performance would be monitoring by

- FBD-National Forest Database (NAFOBEDA)
- FBD-National Forest Resource Assessment and Monitoring (NAFORMA); .
- Communities and district authorities at all levels i.e. from the grassroots to the district leaders;
- Private sector entities through individual companies or people and the Associations like the Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA);
- Remote sensing through SUA, Surveys and Mapping Division, IRA-University of Dar-Es-Salaam, Ardhi University and also building the capacity of the Surveys and Mapping section of FBD.

10. Additional benefits of potential REDD strategy:

a) Non-carbon benefits expected to be realized through implementation of the REDD strategy (e.g., social, environmental, economic, biodiversity)

- Biodiversity Conservation in biodiversity hot spots enhanced

- Livelihoods of forest adjacent communities improved/enhanced
- Forest conservation improved/enhanced
- Sustainable use of natural resources enhanced at community levels
- Culture of tree planting and conservation cultivated
- Water quantity and quality improved/enhanced

b) Biodiversity conservation is being monitored at present

- The National Forest and Beekeeping Database (NAFOBEDA) is currently monitoring biodiversity conservation.
- NGOs such as WWF, etc conduct independent biodiversity conservation monitoring in parks and wildlife reserves.
- Forest Health, forest disturbance and Biodiversity - by Sokoine University in the Eastern Arc.
- Biodiversity monitoring by FRONTIER - Eastern Arc Mountains
- Ecosystem change monitoring – University of Dar es Salaam.

c) Under early ideas on introducing REDD, biodiversity conservation will also be monitored - where , how

- Through NAFOBEDA and National Forest Resource Assessment and Monitoring (NAFORMA),
- Individual private organisations and communities.
- Research and learning institutions
- NFA plots will be overlaid to assess various biodiversity and ecosystem parameters.
- Other permanent plots will be established as controls for biodiversity monitoring.

d) Rural livelihood benefits are currently being monitored If so, what benefits, where, and how?

- Rural livelihood benefits from development programmes at national and district levels are being monitored through the National Growth and Poverty Reduction (MUKUKUTA) monitoring system.
- By Using Tanzania Social Economic Database (TSED) is being used to assess key rural livelihood indicators at village, ward and district levels. Data are aggregated to national level.
- Benefits are articulated in Poverty Reduction Strategies in all clusters, namely : Reduced poverty income, improved quality of life and social well being & Good governance

e) Under early ideas on introducing REDD, rural livelihood benefits will also be monitored

- Rural livelihood benefits will also be monitored through the Tanzania Social Economic Database (TSED)
- Participatory processes where communities are involved in self assessments and monitoring of benefits would be put in place.

11. Type of assistance likely to be requested from the FCPF Readiness Mechanism; In order for Tanzania to benefit from the FCPF, it should be assisted to-

- (i) Undertake a detailed nation wide study to establish existing (baseline) carbon stocks in forestry in the country;
- (ii) Conduct awareness raising on carbon trading opportunities among stakeholders at all levels (Government, private sector, local communities, NGOs, civil societies and individuals);
- (iii) Establish forestry carbon trading demonstration projects consistent with development objectives of the country;
- (iv) Conduct training and build technical capacity to develop, assess and monitor on carbon trading projects to allow efficient implementation of forestry carbon trading projects;
- (v) Establish a permanent national level committee to advise the DNA on forestry sector carbon trade; and
- (vi) Look into the possibilities of utilizing voluntary carbon trade markets;

(Refer also Country Concept Note Attached),

- **Both technical or financial support would be requested from FCPF to build capacity for addressing REDD,**
- **Initial estimate of the amount of support for each category**
 - (i) **Financial Support for mobilization phase**
 - (ii) **Capacity Building to drafting Country REDD strategy**

a) Transparent stakeholder consultation on REDD

- Communication strategy (workshops, publications, meetings, seminars, radio/TV programmes)

b) Developing a reference case of deforestation trends: Assessment of historical emissions from deforestation and/or forest degradation, or projections into the future.

- Participation in the Global Forest Resource Assessments (FRA 2010) and beyond
- National forest Assessment

c) Developing a national REDD Strategy: Identification of programs to reduce deforestation and design of a system for providing targeted financial incentives for REDD to land users and organizations.

A national taskforce has been formed with members from FBD and the Vice Presidents Office (VPO), Environment Division. This task force comprising of six members will lead the process to design a national REDD strategy by undertaking a wide stakeholders consultations. This will involve also the local forest adjacent communities . The stakeholders' views will be used to prepare a national REDD strategy.

d) Design of a system to monitor emissions and emission reductions from deforestation and/or forest degradation :

This is a crucial requirement otherwise the chances of leakages and additionality have to be taken into account. The ability to secure benefits to forest adjacent local communities in Tanzania is one of the concerns and REDD is looked at as an instrument that could leverage this requirement. It is through certain incentives (payments) that could be established to ensure that REDD becomes a success. Thus, REDD represents a new way of doing things and as an additional mechanism for improving conservation through avoiding further loss of forest biodiversity. How REDD should work is still a challenge but what is needed is to establish a performance based systems where payments will be effected to those local communities in Tanzania that have demonstrated beyond doubts that no forest loss is taking place therefore keeping CO₂ emissions at very low levels.

12. Donors and international partners

The Royal Norwegian Government is already cooperating with Tanzania on the preparation of relevant analytical work on REDD. Other partners including the World Bank (FCPF), UN-REDD, CARE International in Tanzania, WWF, ICRAF, TFCG, WCST and the Clinton Foundation in Tanzania will also cooperate on national REDD strategy development, simultaneously under the Sector Wide Approach .

13. Potential Next Steps and Schedule :

Steps to move toward Readiness for REDD activities (with no estimated timeframe for them yet)

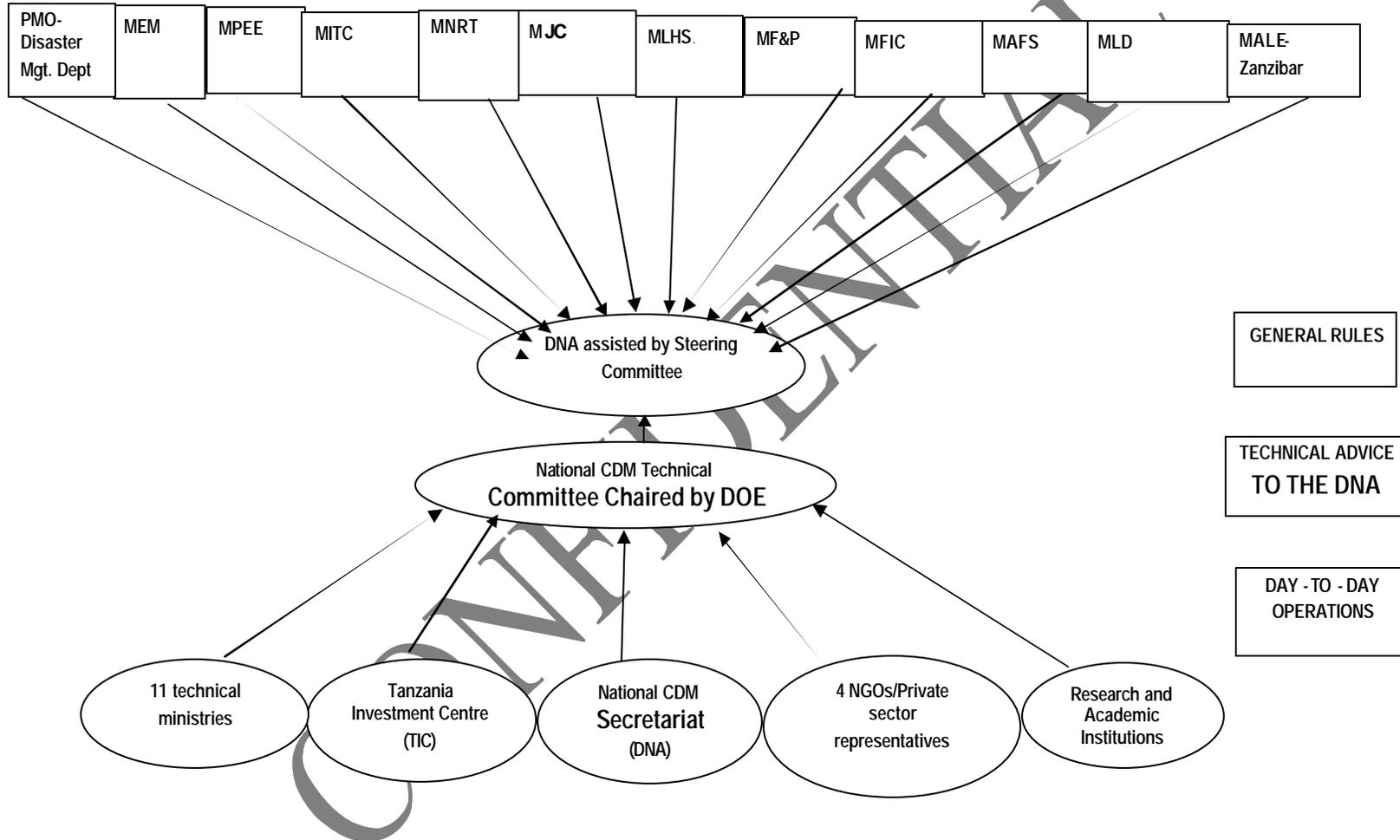
- (i) Undertake a detailed nation wide study to establish existing (baseline) carbon stocks in forestry in the country;
- (ii) Conduct awareness raising on carbon trading opportunities among stakeholders at all levels (Government, private sector, local communities , NGOs, civil societies and individuals);
- (iii) Establish forestry carbon trading pilot projects consistent with development objectives of the country;
- (iv) Conduct training and build technical capacity on carbon trading to allow implementation of forestry carbon trading projects;
- (v) Improve physical capacity implementing agencies or institutions.
- (vi) Establish a nation REDD Sub committee to advise the DNA on forestry sector carbon trade;
- (vii) Establish an institutional framework for REDD
- (viii) Establish benefit sharing mechanism

Look into the possibilities of utilizing voluntary carbon trade markets;

14. List any Attachments included

- Structure of Tanzania Designated National Authority (DNA)
- The Executive Summary National Forest Programme
- The National Concept Note on Carbon Trading in Tanzania
- Distribution of Forest and Woodland Resources on Mainland Tanzania
- Abbreviations and Acronyms
- Bibliography

Appendix 1: Structure of the Tanzania's DNA



EXECUTIVE SUMMARY-NATIONAL FOREST PROGRAMME

National Context

About 38% of the Tanzania's 886,000 km² total land area is covered by forests and woodlands that provide for wildlife habitat, unique natural ecosystems and biological diversity and water catchments amounting to 1.6 million hectares. These forests are however faced with deforestation at a rate of between 130,000 and 500,000 ha per annum, which results from heavy pressure from agricultural expansion, livestock grazing, wild fires, over-exploitation and unsustainable utilization of wood resources and other human activities mainly in the general lands.

Policies

The NFP is an instrument meant to implement the National Forest Policy, which was approved by the Government in 1998. The policy takes cognisance of macro-economic and other sectoral policies ranging from environmental conservation to sustainable development of the land based natural resources. Major policies that have a bearing on the forest sector include the Environmental Policy and Land Policy. The formulation of respective legislation and their operationalization will enhance sustainable forest management mainly in the general lands and cross-sectoral areas.

Justification

The National Forest Programme was developed in order to address the challenging responsibilities in the near future and to increase the forest sector's contribution to the national economy and more so in poverty reduction. Forests and trees play multiple roles in the rural life of majority of Tanzanian people especially women and marginal groups in relation to food security, rural energy supply and household subsistence. Forests are increasingly becoming important in the local and global environmental and biodiversity conservation. This programme would significantly enhance not only sustainable forest management (SFM) but also improve the design and implementation of projects and programmes which have so far been fragmented and uncoordinated.

Objectives

Recognizing the ever increasing environmental degradation and loss of forest resources, Tanzania embarked on developing a long-term National Forest Programme to implement the National Forest Policy. The objectives of the NFP development programmes are (i) sustainable supply of forest products and services ensured to meet the needs at the local and national levels; (ii) enhanced national capacity to manage and develop the forest sector in a collaborative manner; (iii) enabling legal and regulatory framework for the sector in place and (iv) increased economic contribution, employment and foreign exchange earnings through sustainable forest-based industry development and trade of forest products.

Development Programmes

The National Forest Programme (NFP) is based on four implementation programmes that cover both forest resources management as well as institutional and human resources development

aspects. The programmes are: (i) Forest Resources Conservation and Management programme which aims at promoting gender balanced stakeholders participation in the management of natural and plantation forests, giving priority to ecosystems conservation, catchment areas and sustainable utilization of forest resources; (ii) Institutions and Human Resources Development programme which aims at strengthening institutional set up, coordination of forest management, establishing sustainable forest sector funding and improvement in research, extension services and capacity building through strengthening human resources; (iii) Legal and Regulatory Framework programme which focuses on the development of regulatory issues including the Forest Act, rules, regulations and guidelines to facilitate operations of the private sector and participatory management, and (iv) Forestry Based Industries and Sustainable Livelihoods programme which is intended to enhance forest industry development by promoting private sector investment, improving productivity and efficiency and to tap the income generation opportunities provided by non wood forest products. The complete Logical Framework Matrices for the respective programmes are presented in Annex a-d to this main document.

(1) Forest Resources Conservation and Management Programme

The programme covers Forest Reserves, General Lands, Industrial Plantations, Private and Community Forestry and Forest biodiversity Conservation, Watershed Management and Soil Conservation

Objective: Sustainable supply of forest products and services ensured to meet the needs at the local and national levels

Sub-programme	Key Issues ¹	Key Strategies
1.1 Participatory Forest Resources Management and Gender Aspects^{2*}	<ul style="list-style-type: none"> Ineffective forest management due to the lack of involvement, motivation and benefits to local communities, private sector and other stakeholders. (H) Inadequate gender aspect in forestland management. (H) 	<ul style="list-style-type: none"> Establish CBFM and JFM by using innovative ways to share the costs and benefits and by assessing the economic, financial and social viability of participatory initiatives. Pay attention to gender balance in terms of income generation opportunities, poverty reduction, decision-making and ownership of forest resources and products. Collaborate with local governments in the management of forests in the general lands and local government forest reserves. Involve specialized executive agencies, private sector and local governments by commercialization or privatization of the management of existing industrial plantations through concessions and leases. Expand existing plantations and promote tree planting in private farmlands.
1.2 Forest Biodiversity Conservation and Management*	<ul style="list-style-type: none"> Degradation and erosion of biodiversity due to shifting cultivation overgrazing, monoculture, wildfires and poaching. (H) Inadequate application of indigenous knowledge in biodiversity conservation. (M) 	<ul style="list-style-type: none"> Assess forest biodiversity sites and habitats with high endemism and species richness under major ecozones and create conservation strategies and joint management agreements Demarcate and manage protective buffer zones around gazetted forest and nature reserves with biodiversity, water and other amenity values in collaboration with local communities through JFM
1.3 Land Use Planning	<ul style="list-style-type: none"> Undefined land use and security of tenure of 	<ul style="list-style-type: none"> Develop clear ownership for all forests and trees on general lands.

¹ H = High priority M = Medium priority

L = Low priority

² * = Priority Sub-programmes

Sub-programme	Key Issues ¹	Key Strategies
	<p>forestlands in village and general land. (H)</p> <ul style="list-style-type: none"> • Land scarcity due to population pressure and its negative effects on forest development (L). 	<ul style="list-style-type: none"> • Demarcate forest reserves under central, local government, village and private individuals and grant appropriate user rights.
1.4 Forest Resources Information and Management Planning	<ul style="list-style-type: none"> • Inadequate data on available forest resources for utilisation, and baseline data for conservation and management purposes. (H) • Management plans non-existent or outdated or not implemented. (H) • Inadequate information on ecosystems (forest biodiversity, water catchment and soil conservation). (H) • Outdated and non-existent management plans in watershed and soil conservation areas. (H) • Inadequate collection, analysis interpretation, dissemination, storage and updating of forest resource information. (H) 	<ul style="list-style-type: none"> • Streamline forest resources information systems by assessing the current databases/registries and priority needs for new forest resource information. • Conduct forest inventories and develop management plans together with the relevant stakeholders in priority plantations and natural forest areas. • Establish new, cost-effective ways to conduct and prepare forest reconnaissance inventories, biological surveys and zonation and prepare low cost management plans.
1.5 Forest Resources Utilisation	<ul style="list-style-type: none"> • Inefficient utilisation of plantations. (H) • Potential for forest products, NWFPs and services (including eco-tourism, woodfuel) not fully assessed/utilised. (M) • Heavy dependency on few species for raw material supply for forest-based industry. (L) 	<ul style="list-style-type: none"> • Commercialise or privatise the management of existing plantations through concessions, leases and joint management and use fully the plantation potential in terms of quantity and quality. • Assess and promote utilization of forest products, NWFPs and services for wider use and income-generation, especially among the rural communities. • Assess and create awareness on lesser-known species for wider utilization.

(2) Institutions and Human Resources Programme

Objective: enhanced national capacity to manage and develop the forest sector in a collaborative manner

Sub-programme	Key Issues	Key Strategies
2.1 Strengthening Institutional Set-up and Sectoral Co-ordination and Cooperation*	<ul style="list-style-type: none"> • Inadequate sectoral and inter-sectoral co-ordination (H). • Inadequate, regional and international co-operation (H). • Inadequate mechanism for coordination of stakeholders in 	<ul style="list-style-type: none"> • Promote cross-sectoral coordination between the forest administration and other government institutions at all levels through formal mechanisms (at the central and local levels, and areas envisaged for collaboration include integrated planning, policy formulation and extension services). • Develop mechanisms for adequate sectoral and inter-sectoral co-ordination and consult other stakeholders in planning and management of forest resources as

Sub-programme	Key Issues	Key Strategies
	<p>management of forest in general lands (M). Weak institutional linkages between the central and local levels, NGOs, local communities and the private sector on conservation and management of forest ecosystems (H).</p>	<p>well as regional and international co-operation in implementation of SFM.</p> <ul style="list-style-type: none"> • Explore and utilize fully opportunities provided under various conventions, agreements and mechanisms, at international cooperation level.
<p>2.2 Human Resources Capacity Building*</p>	<ul style="list-style-type: none"> • Inadequate human resources to carry out forestry programmes (H). • Inadequate working conditions for civil servants (H). • Declining number of male and female forest staff due to HIV/AIDS (H). 	<ul style="list-style-type: none"> • Collaborate with the local governments and President's Office - Regional Administration and Local Government, to develop sufficient capacity of the local governments to administer and manage forest resources by building professional, technical and specialized competence. • Sensitise male and female forest staff on AIDS/HIV in collaboration with other stakeholders.
<p>2.3 Forest Financing*</p>	<ul style="list-style-type: none"> • Inadequate financing in research and training institutions (H). • Inadequate investment in forestry sector (H). • Poor administration and management of revenue collection from forest resources (H). • Lack of mechanisms for investments in forest conservation and sustainable management (H). • Financial constraints in development of forest-based industry and products (M). 	<ul style="list-style-type: none"> • Develop new and innovative sectoral financing mechanisms in the forest sector involving the key stakeholders. • Enhance self-financing mechanisms through broadening of the revenue base for all products and services, full valuation of the resource use and improvement of revenue collection by product pricing. • Harmonise collection of royalties and other fees with local governments or through other feasible mechanisms to make the collection efficient. • Promote private sector and local community investments in forestry activities.
<p>2.4 Strengthening Extension Services and Awareness Creation in Forest Management*</p>	<ul style="list-style-type: none"> • Inadequate extension services to all stakeholders for SFM (H). • Poor gender awareness and women involvement in forest programmes (H). • Inadequate use/suppression of indigenous knowledge on management and uses of forest resources on village and general lands (M). • Inadequate knowledge of national forest policy (public education) (H). • Limited political support to forestry (H). 	<ul style="list-style-type: none"> • Develop cost effective forest extension systems jointly by the central government, local government, private sector, NGOs and CBOs. • Promote gender awareness and women involvement in forest programmes. • Promote indigenous knowledge on management and uses of forest resources at local level. • Promote political support by creating awareness for politicians and decision-makers.
<p>2.5 Forestry Research</p>	<ul style="list-style-type: none"> • Inadequate nation wide research coverage in the forest sector (H). • Inadequate knowledge and research base in forestland 	<ul style="list-style-type: none"> • Integrate National Forestry Research Master Plan into the NFP based on the identified information gaps that require research. • Undertake research on priority areas and disseminate research findings and promote their application.

Sub-programme	Key Issues	Key Strategies
	management, including indigenous knowledge (H).	<ul style="list-style-type: none"> Undertake research through partnerships with other institutions.
2.6 Policy Analysis, Planning and Monitoring	<ul style="list-style-type: none"> Lack of periodic/systematic review of forest policy (L). Lack of systematic/periodic review of forest laws and regulations (H). Inadequate consultation of stakeholders in planning and management of forest resources (H). 	<ul style="list-style-type: none"> Develop sectoral competence for formulation and revision of forestry legislation. Develop facilitative management guidelines and by-laws for different forest types at all levels. Set and refine national Criteria and Indicators for Sustainable Forest Management.
2.7 Forest Resources Valuation	<ul style="list-style-type: none"> Poor understanding on the value of forest eco-system products and services (M). Lack of valuation of forest ecosystem in terms of tangible & intangible values (M). 	<ul style="list-style-type: none"> Conduct special studies for valuation of both tangible and intangible forest products and services and incorporate biodiversity and other values into the national accounting system

(3) Legal and Regulatory Framework Programme

Objective: enabling legal and regulatory framework for the sector in place

Sub-programme	Key Issues	Key Strategies
3.1 Development of Laws and Regulations*	<ul style="list-style-type: none"> Inadequate legal framework for private sector/ gender balanced community participation in management of forestland (H). Lack of motivation for the local communities and private sector in forest management (H). Lack of guidelines for collaborative forest management (H). Inadequate legal mechanisms for harvesting, royalties, benefit sharing and on tariffs in wood-based products, NWFPs and services (H). Formal mechanisms for sharing responsibilities and benefits are non-existent. (H). Outdated forest legislation to protect biodiversity and nature reserves conservation (H). Lack of legal guidelines and regulations for bio-prospecting activities in forestry sector (H). 	<ul style="list-style-type: none"> Prepare regulations and guidelines that support sustainable management and prepare joint management agreements that support between the central government, specialized executive agencies, private sector or local governments, as appropriate in each case. Promote formation of local groups or other organizations of people living adjacent to the forest to participate in cost and benefit sharing. Grant to the local communities appropriate user rights for forest produce and management of forests in accordance with approved management plans. Establish executive agency (ies). Put under effective legal protection sufficient areas of valuable key forest ecosystems and habitats with endemic species and update them to nature reserves. Develop regulations for bio prospecting and partnership with relevant stakeholders.
3.2 Harmonisation of Regulations*	<ul style="list-style-type: none"> Inefficient and time-wise expensive procedures for 	<ul style="list-style-type: none"> Carry out with all relevant stakeholders rationalization of charges on forest products

	establishing concessions, leases and other types of forest utilisation/management contracts (H). <ul style="list-style-type: none"> • Multiplicity and uncoordinated charges on forest products (royalties and fees) (H). • Unharmonized forest and trade legislation for wood and non-wood forest products (L). 	(royalties) in order to guarantee the competitiveness of forest products in local and international market in relation to competing products. <ul style="list-style-type: none"> • Streamline procedures for administration of forest products and trade to reduce red tape.
3.3 Development of Sector-specific Environmental Impact Assessment Guidelines*	<ul style="list-style-type: none"> • Lack of environmental impact assessment guidelines in forestland management (H). • Inadequate consideration of environmental concern in wood and non-wood based industry and services (M). 	<ul style="list-style-type: none"> • Monitor all forest major forest investments and development activities to ensure adherence to EIA guidelines.

(4) Forestry Based Industries and Sustainable Livelihoods Programme

Objective: increased economic contribution, employment and foreign exchange earnings through sustainable forest-based industry development and trade of forest products.

Wood-based Industry and Products, Woodfuel, Artisanal Wood-based Industry and Products, Eco-Tourism, Other Non-wood-based Industry and Products, and Trade in Forest Products

Sub-programme	Key Issues	Key Strategies
4.1 Forestry Products and Services Information Development*	<ul style="list-style-type: none"> • Inadequate information on markets and marketing of forest products and services (M). • Inadequate information on non-marketed forest products and services (M). • Inadequate information on raw materials for mechanical and chemical wood-based industries and non-wood products. (H). 	<ul style="list-style-type: none"> • Establish databases and marketing information for mechanical and chemical industries, artisanal products, NWFPs, woodfuel and charcoal markets. • Conduct baseline surveys on market information on NWFP, forest products and services. • Disseminate market information to producers, users and other relevant stakeholders.
4.2 Products and Markets Promotion and Awareness Creation*	<ul style="list-style-type: none"> • Inadequate promotion and awareness creation on lesser-used tree species and NWFPs and services (M). • Limited knowledge on market information by producers at all levels (L) 	<ul style="list-style-type: none"> • Create awareness on the demand and supply, markets, marketing and income-generation potential of forest products, NWFPs and services and lesser-known species. • Create linkages between producers and consumers for systematic market information. • Establish forest certification system.
4.3 Forestry Industries Technology Development	<ul style="list-style-type: none"> • Inadequate innovation and affordable alternative sources of energy (L). • Inadequate or lack of appropriate technology to process (packaging quality, quantity, high value added) 	<ul style="list-style-type: none"> • Develop alternative affordable sources of energy in collaboration with relevant gender balanced stakeholders. • Create quality standards for various products and facilitation of adoption of appropriate technologies in harvesting and processing.

Sub-programme	Key Issues	Key Strategies
	and use wood, NWFPs and artisanal products (L).	
4.4 Infrastructure Development	<ul style="list-style-type: none"> Poor infrastructure in facilitating forest-based industry (M). 	<ul style="list-style-type: none"> Improve infrastructure, mostly roads and information and communication technology, in forest plantations and natural forests.

Way Forward

In the first year of the NFP, the document will be disseminated and publicised to all relevant stakeholders for action at national level. This is important taking into account the necessary coordination of development partners, local and international agencies supporting the implementation of the programme and in facilitating the move towards a programme approach in NFP implementation.

The Programme will have to receive the necessary support in the local governments. This will entail conducting meetings with key decision-makers at local level to disseminate NFP information and promote start-up of district NFP planning and implementation.

Monitoring system for implementing the NFP will be set up in terms of assessment/refinement of existing Criteria and Indicators for SFM, and refinement of NFP indicators based on national C&I. This will involve also training of FBD and some district staff on the application of the system.

Developing activities towards a programme approach will be done by assessing and designing programme framework, instruments and milestones at national and district levels. In this respect, NFP Coordinating Unit will be facilitating and following up capacity building in the districts through technical support.

Input Requirements

The NFP implementation is expected to draw resources from various sources under different stakeholders including the private sector, public sector and external assistance. Growing involvement of the private sector, NGOs and individuals is expected to reduce dependency on donors and increase local sources and government share. The government has approved the Ministry of Natural Resources and Tourism to retain 70% of the revenue collected for forest management purposes. For the forest plantations, the Forest Division has been allowed to retain about 45% of the forest royalties under the Logging and Miscellaneous Deposit Account (LMDA) to service silvicultural and road maintenance activities in the plantations. These are significant steps towards sustainable forest financing.

Financing NFP development programmes will require improved country's capacity especially in establishing Sector Wide Approach (SWAp) under which all significant funding supports a single national forest programme. The move from project-based assistance towards a Sector Wide Approach is a gradual process requiring strong government leadership and the collaboration and support of development partners.

Also new mechanisms will be developed to facilitate that the potential investors in forest industry will benefit from the availability of credit facilities. The forest sector will work in close collaboration with private sector, government, private financial institutions, international financing

institutions and relevant international special facilities to ensure that the right mechanisms are in place.

Key Institutions, Stakeholders and Lead Actors in NFP Implementation

In the implementation of the NFP, the central and local governments, private sector, NGOs, CBOs at all levels and the international community have key roles to play so as to maximize the benefits and minimize the costs of management. While the central government will focus more on coordinating, guiding and monitoring implementation, local governments and the private sector will be responsible for the actual management.

Implementation arrangements for forest reserves including plantations and general lands, a semi-autonomous Executive Agency/(cies) will be established at national level. The operations will be based on the results of different feasibility studies and evaluations currently underway. In the field level activities, ongoing reforms under the Local Government Reform Programme provide a framework for organizational arrangements to support forest management. The ultimate goal is to integrate and mainstream pilot activities into the district plans in a programme approach. Implementation modalities for the different sets of forests include community-based forestry management under the respective local governments, joint forest management where partnership with central government is key and private forests management including plantations and natural forests.

In this respect, some key institutions include the Regional Administration and Local Government, Lands, natural resources and other land based sectors, research and training institutions (Sokoine University of Agriculture – Faculty of Forestry and Nature Conservation and Tanzania Forest Research Institute), Civil Service Department and Legal affairs and Private Sector Foundation.

Under these roles and responsibilities, different tasks include:

- **The FBD:** providing co-financing for planned activities at the local levels, but also for services, such as capacity building, facilitation, monitoring, evaluation etc. to be conducted from the central and regional levels.
- **The Regional Secretariat:** forming a link between FBD and the local authorities by advising and facilitating implementation in the local governments.
- **The District Council:** facilitating planning and implementation through extension, providing technical assistance and capacity building, mobilising financial resources for implementation of planned activities from different sources.
- **Private sector:** funding and management of forest development.



UNITED REPUBLIC OF TANZANIA
MINISTRY OF NATURAL RESOURCES AND TOURISM

CONCEPT PAPER ON CARBON TRADING IN FORESTRY
IN TANZANIA

May 2007
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1. BACKGROUND

The Ministry of Natural Resources and Tourism (MNRT) considers selling carbon credits a viable option that can help Tanzania meet its obligations of managing her forests and woodlands on a sustainable basis and at the same time respond to poverty reduction initiatives accordingly. However, this is only possible if the MNRT has a clear understanding of the concept of carbon trading. To achieve this important objective, a concept paper has been prepared that will be a basis for the Ministry to initiate carbon trading in Tanzania using forests as carbon sinks.

Tanzania mainland occupies more than 88 million hectares (ha) of land including water bodies, forests, woodlands and mountainous landscapes. Forests and woodlands were estimated in 2002 to cover 33.5 million ha which represented 38% of the country's total land area.

The importance of forests and woodlands to human life cannot be over-emphasized. They are crucial as a source of livelihoods, and providing direct benefits like firewood, charcoal, fruits, poles, timber, traditional medicines and many others. The forests and woodlands also have very important and critical ecological values and are a source of vital services such as conserving soils and water sources, harbouring rich biodiversity, providing bee fodder, ameliorating climate, serving as habitats for wildlife, have important genetic resources, provide a wide range of cultural, spiritual and recreational benefits and are important sinks for removing carbon dioxide from the atmosphere. The process of removing carbon from the atmosphere is known as carbon sequestration and Tanzania's forests and woodlands are net carbon sinks. If carbon dioxide and other greenhouse gases (GHGs) concentrations in the atmosphere are left to increase, life on earth will be unbearable. GHGs are responsible for global warming and climate change.

In response to the effect of global warming and climate change, the United Nations Framework Convention on Climate Change (UNFCCC), usually referred to as "Convention on Climate Change" was adopted in May 1992. Tanzania ratified the Convention in 1996. The Convention's Conference of Parties (COP) held in Kyoto, Japan in 1997 adopted the Kyoto Protocol to the UNFCCC as a global instrument to commit Developed Country Parties to the protocol to reduce their overall emissions of greenhouse gases by at least 5% below the 1990 levels in the period 2008-2012.

Based on the UNFCCC and its Kyoto Protocol which became effective in 2005, Developed Country Parties, which are the biggest emitters of GHGs can compensate Developing Country Parties that have net carbon sinks to offer through carbon trading. Tanzania is already taking advantage of this global opportunity in carbon trading although the MNRT has not yet initiated any carbon trading projects. Given the available forest resources in the

country, which represent a huge net carbon sink, there is urgent need for the MNRT to initiate carbon trading projects in Tanzania.

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2. CAUSES AND EFFECTS OF CLIMATE CHANGE

Causes of Climate Change

According to UNFCCC, climate change refers to a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.

The causes of climate change are increases in carbon dioxide and other GHGs. These gases, which are always present in the atmosphere, act like an insulation layer to the earth and hence cause a warming effect that is similar to warming inside a greenhouse (GH), where the sun's rays enter into the GH and are captured there, hence the GH effect. The GH effect (Fig. 1) is a necessary natural warming process. In this process, heat in the form of infrared energy radiates from the warmed surface of the earth and some of this energy is absorbed by GHGs in the atmosphere, which re-emits the energy in all directions including back to the earth's surface. Higher concentrations of carbon dioxide and other GHGs trap more infrared energy in the atmosphere than naturally occurs. The added heat further warms the atmosphere and earth's surface, leading to global warming. The earth has warmed by 0.74 °C over the last 100 years. Around 0.4°C of this warming has occurred since the 1970s, meaning that 54% of this temperature rise occurred in the last three decades only.

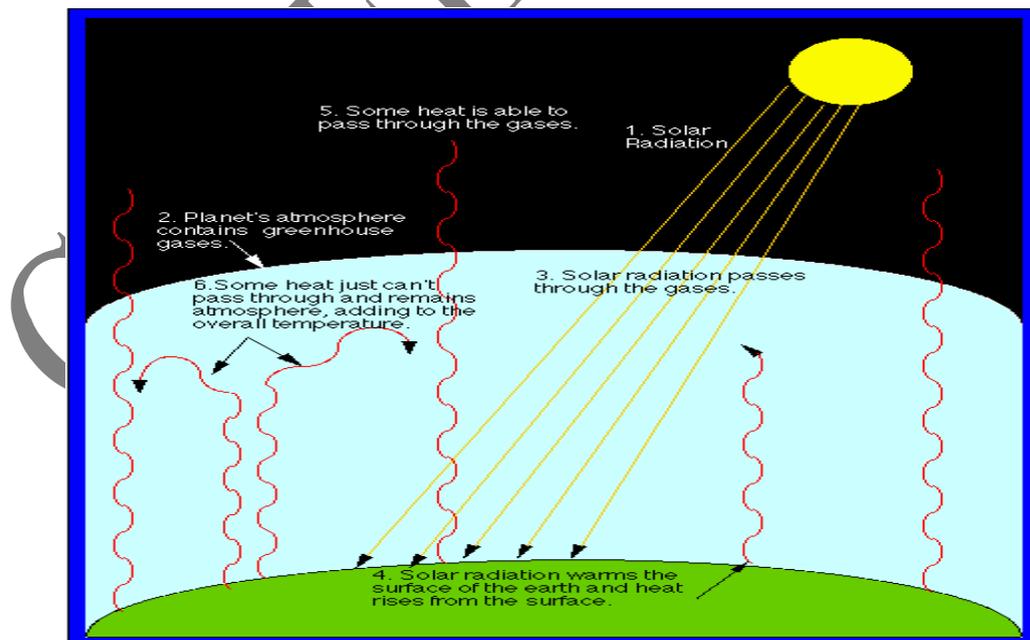


Figure 1. The process of global warming

Human (anthropogenic) activities are creating excess GHGs that are trapping heat in the atmosphere which has in turn led to global warming. The principal anthropogenic GHG is carbon dioxide whose concentration has increased by 31% since 1750. The other significant anthropogenic greenhouse gases are methane, hydro fluorocarbons, per fluorocarbons, sulphur hexafluoride and nitrous oxide. The gases result largely from burning of fossil fuels such as oil, coal and natural gas. With increasing industrialisation, the amounts of GHGs being released is increasing steadily. Land use change, especially deforestation, also releases large amounts of carbon dioxide (about 1.6 billion tonnes) into the atmosphere. It is estimated that globally, 1.6 billion tonnes of carbon dioxide are released from deforestation.

Effects of climate change

The effects of climate change are now being felt globally and in Tanzania. These changes have adverse effects economically, socially and environmentally. Some of the important effects of climate change in Tanzania are:

- (i) Sea level rise. During the 20th century, sea level rose 10-20 cm due to melting glacier ice and expansion of warmer seawater. In Tanzania, this has caused costal erosion and is a threat to islands such as Unguja, Pemba and Mafia. The loss of prime beach to erosion and sea level rise would cripple the islands' economies since the value of beaches for tourism will be reduced.
- (ii) Warming of sea-surface temperatures. Sea surface temperatures are warming and as a result, some living organisms such as corals, which are breeding grounds for marine animals, are adversely affected.
- (iii) Heavier rainfall causing flooding in many regions as warmer temperatures speed up the water cycle. In the last ten years, floods have caused more damage to crops, soil (erosion), and disruption of settlements, commerce, transport and pressures on urban and rural infrastructures than in the previous 30 years. Increased floods lead to food shortages and spread of water borne diseases.
- (iv) Frequency of droughts has increased. The droughts have resulted into serious water shortages and attendant power outages, land degradation, lower crop yield/crop damage and failure and increased livestock deaths. Droughts have also contributed to acute drop in water levels in lakes Victoria, Tanganyika and Rukwa hence adversely affecting water cycles and fisheries.
- (v) The ice cap of Mount Kilimanjaro may be gone in less than 20 years because of global warming. About a third of Kilimanjaro ice field has disappeared in just 12 years and 82% of it has vanished since it was first mapped in 1912. The disappearance of the ice on Mount

- Kilimanjaro will lead to shortage of fresh water for irrigation and household use and adversely affect fisheries and energy generation at Nyumba ya Mungu dam, Hale and Lower Pangani.
- (vi) Severe weather events are more common and stronger. For example, the number and strength of hurricanes have increased over the last two decades. These events cause damage to crops, property such as houses, infrastructure, loss of life to humans and livestock, uproot trees and damage coral reefs.
 - (vii) A warmer climate has expanded the range of carriers of malaria to high land areas like Lushoto, Amani, Rungwe, Njombe and Muleba.

3. ROLE AND POTENTIAL OF FORESTS AS CARBON SINKS

Forests are carbon dioxide sinks. Through photosynthesis, plants absorb carbon dioxide from the atmosphere, store the carbon in the form of sugars, starch and cellulose and release oxygen into the atmosphere. The carbon is stored in the leaves, roots, needles and bark. A young forest, composed of growing trees, absorbs carbon and acts as a sink. On the other hand, mature forests, made up of a mix of various aged trees as well as decaying matter, may be carbon neutral above ground. Globally, forests are assumed to store 70% of terrestrial fixed carbon.

It was estimated in 2002 that forests and woodlands in Tanzania mainland occupied about 33.5 million ha which is about 32% of the total mainland area (Annex 1). Despite the fact that Tanzanian forests and woodlands contribute significantly to removing carbon from the air as they grow, the quantity of carbon that is currently stored in these forests is yet to be established. Pilot studies however indicate that standing carbon stocks in natural forests is between 388 and 569 t C ha⁻¹ while forest plantations can sequester between 3 and 500 t C ha⁻¹ depending on species and other variables. Agroforestry has the potential to sequester 2 to 5 t C ha⁻¹yr⁻¹ while the rehabilitation of degraded land can sequester 0.25 to 0.9 t C ha⁻¹yr⁻¹.

Against this background, there is an urgent need to conduct further detailed assessments on the current carbon stocks and the potential of Tanzania's forests the forests offer for participating in the carbon trade and benefiting the country's economy.

4. GLOBAL EXPERIENCE ON CARBON TRADING

Carbon trade involves the sale of Certified Emission Reductions (CERs), also known as carbon credits. The trade is a market based mechanism for helping mitigate the increase of carbon dioxide in the atmosphere.

Basically, there are two main types of Carbon Trading Schemes that are operating globally to-date. These are Voluntary Carbon Trading (VCT), which is not operated under the Kyoto Protocol and the official Kyoto Protocol Flexibility Carbon Trading Mechanisms. There are also other schemes that are of mandatory nature and in principle consistent with the Kyoto Mechanisms. A specific example is the European Union (EU) Emission Trading scheme. The EU Emissions Trading Scheme (EU ETS) is one of the policies being introduced across Europe to reduce emissions of carbon dioxide consistent with the Kyoto Protocol. Under this arrangement and commitment, the EU requires its member countries to reduce emissions by 5 % by the year 2012 compared to 1990 levels by 2012. The Kyoto Protocol is the first legally binding international agreement that attempts to tackle climate change. The Protocol sets legally binding limits on the anthropogenic emissions of significant GHGs.

In principle, the VCT involves companies offsetting GHG emissions from their activities and products on a voluntary basis as part of their corporate responsibility. To date, VCT is still at low levels but is rapidly expanding with a market value of about USD 100 million. Experiences show that there are state level mandatory regimes in some developed countries, particularly in the United States of America. However, such carbon trading regimes have no international legal binding requirements. Under normal circumstances the opportunities forestry offers in offsetting carbon emissions under VCT regime are significant.

The official Kyoto Protocol Flexibility Carbon Trading Mechanisms are addressed in Articles 6, which addresses Joint Implementation (JI), 12 on aspects of Clean Development Mechanisms (CDM) and 17 for Emissions Trading (ET). For developing countries, CDM is the only mechanism through which carbon trading could be undertaken involving Annex 1 (developed countries) and Non- Annex 1 (NA1-developing countries). The functioning of the Kyoto Protocol Flexibility Carbon Trading Mechanisms is shown in Figure

2. The Clean Development Mechanism (CDM)

The CDM is an enabling mechanism through which developed countries can invest in sustainable projects which reduce carbon dioxide from the atmosphere such as forestry in the developing world. The developing world benefits from such projects through sale of carbon credits.

Kyoto Market Regime

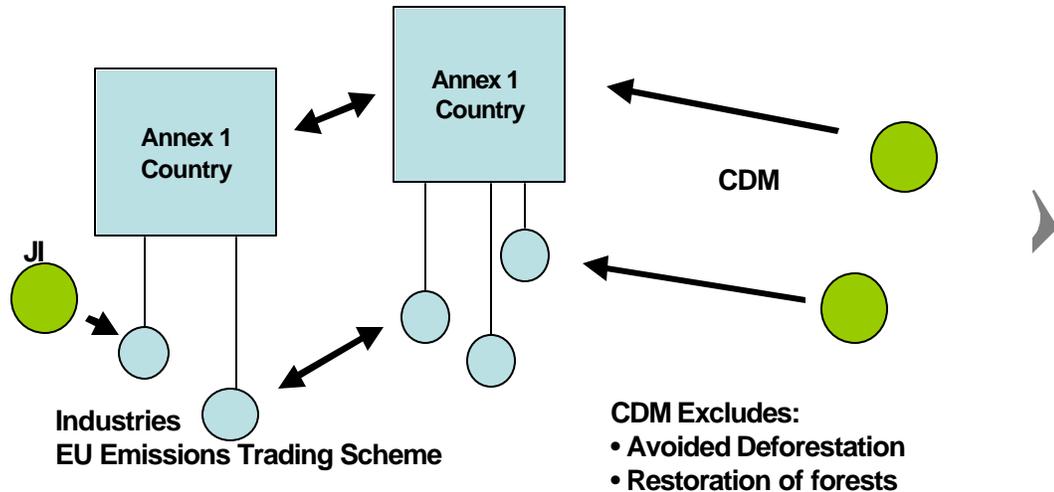


Figure 2. The Kyoto market Regime in carbon trading.

Carbon emissions trading have been steadily increasing in recent years. According to the World Bank's Carbon Finance Unit, 374 million metric tones of carbon dioxide equivalent (mtCO₂e) were exchanged through projects in 2005, a 240% increase relative to 2004 (110 mtCO₂e), which was itself a 41% increase relative to 2003 (78 mtCO₂e). Under the Protocol, one tonne of CO₂ equivalent is equal to one carbon credit or Certified Emissions Reduction (CER). The price of CER ranges between US\$2 and 10.50 depending on market forces of supply and demand.

So far 510 projects have been registered under CDM, corresponding to the issuance of 31,500,000 Certified Emissions Reductions (CERs). Expected CERs from the registered projects are about 740,000,000 by end of year 2012. Out of these projects Africa has only 15 of which Tanzania has one project, the Mtoni Land fill methane gas to electricity project to be registered on 7th June 2007. The project is expected to generate about 2 million CERs over the 10 year crediting period and will generating about 2.5 MW of electricity to be connected to the national grid. EUROMET(T) Ltd of Dar es Salaam, Green Resources of Mufindi, Mwanguya Kyoto Works Ltd of Dar es Salaam, Umeme Jua Ltd of Dares Salaam, Tanga Cement and Katani Ltd of Tanga have showed interest to register as CDM projects. No project in

Tanzania has been registered under the forestry sector but the importance of having such projects cannot be over-emphasized.

The implementation of the CDM project activities is overseen by the Vice President's Office, which is the Designated National Authority (DNA). The DNA has prepared a national implementation guide to CDM. It details, among others, the participation requirements for CDM projects in Tanzania, the sustainable development criteria that are used and it also shows priorities for eligible projects, which include forest resources management.

Under forest management the guide specifies as follows: *"Maintaining existing stocks through forest protection and conservation; and expanding carbon sinks by means of afforestation and reforestation; including Agroforestry projects."*

Unfortunately, the Kyoto Protocol does not include natural forests, woodlands and forest plantations established before 31st December 1989 as eligible for carbon trading. This means that the CDM cannot provide monetary rewards for the conservation of these forests and woodlands. However, recent reports indicate that the World Bank is developing a carbon fund specifically to help countries preserve forests, in anticipation that forestry will become a large scale source of carbon credits. It is estimated that 20 % of global GHG emissions result from poor land management, especially deforestation. The Bank has proposed a pilot Forest Carbon Facility that will reward efforts to avoid deforestation with carbon finance. Inadequate awareness about carbon trading coupled with lack of technical capacity within both the private and other non-government actors and the public institutions in Tanzania are the main constraints for participation in carbon trading both within CDM and in the voluntary schemes.

As the carbon market continues to grow, there is concern over what will happen beyond the Kyoto Protocol's first commitment period (2008-2012). Negotiations on the matter are however already under way within the UNFCCC.

Developments in carbon trading outside the Kyoto Protocol are worth noting. Progress in 'mandatory' greenhouse gas emissions regulation in the United States is taking place with the California and the North-eastern States trading schemes. Both regimes are setting long-term targets, sending a market signal well beyond 2012 as they both acknowledge a need for market-based mechanisms. The North-eastern States trading regime allows for an interface with Kyoto Protocol credits and other mandatory regimes. Probably through such initiative, the US might be brought back in any UNFCCC broader post Kyoto regime to be negotiated.

5. POLICIES AND LEGAL FRAMEWORKS FOR CARBON TRADING

National and international policy and regulatory frameworks guide the implementation of CDM project activities. At international level, participation in CDM projects is guided by the following criteria:

- (i) GHG reduction must be measurable and have long term mitigation benefits;
- (ii) GHG reduction must be additional to that which would occur in absence of certified emissions;
- (iii) CDM projects are limited to those countries that have ratified the Kyoto Protocol. As already pointed out, Tanzania ratified the protocol in 1996;
- (iv) Projects do not have negative collateral impacts on the local environment;
- (v) Funds for the project activities should not result from diversion of Official Development Assistance (ODA).

At national level, Governments are required to set up their own national sustainable development criteria for CDM acceptability. The following criteria are proposed for Tanzania:

- (i) Compatibility with national sustainable development including, ecological and social dimensions;
- (ii) Consistency with the national agenda on poverty eradication;
- (iii) Congruence with the national environmental policy and related action plans and strategies;
- (iv) Congruence with National Land Policy (1995), National Forest Policy (1998) and National Investment Promotion Policy (1996);
- (v) All CDM activities require Special and Specific Environmental Impact Assessment (EIA), consistent with the national EIA guidelines and procedures and the national environmental legislation. The DNA determines the kind and level of the required EIA for each CDM project;
- (vi) Land use and land use change and forestry (LULUCF) activities in CDM will be primarily undertaken in the arid and semi arid areas of Tanzania where afforestation and reforestation is most needed.
- (vii) Energy projects particularly in rural areas are accorded the highest priority;
- (viii) There must be a partnership between investor country, company or institution and the host country local private company, NGOs, Research /Academic Institutions or government department.

6. PROPOSED UTILIZATION OF FUNDS FROM CARBON CREDITS

The emissions reduction should benefit sustainable development, help alleviate poverty, create clean technology in a carbon-less economy and produce local benefits among others. Thus, income from carbon trading should be spent in promoting national development and conservation of forests and the environment. However, since there are no data of carbon sequestered by Tanzania's forests, it is not possible at the moment to estimate the revenue that the country could get from selling forest based carbon credits.

It is proposed that income from carbon trade be spent on the following specific areas:

- i) Reforestation and afforestation;
- ii) Research and Technical support;
- iii) Rural Fuelwood Projects development;
- iv) Development of peri-urban forest plantations;
- v) Development and utilization of alternative energy e.g. biogas;
- vi) Development of City Organic Wastes for production of briquettes;
- vii) Promotion of utilization of Coal;
- viii) Development of skills and employment creation. Skills include negotiation to ensure equity. Employment could be created through establishment of income generation activities such as beekeeping inside and around forests, tourism and eco-tourism and other income generating activities, thus reducing economic dependence on forests. These activities will create employment;
- ix) Education, Health and other social services to enhance economic development.

7. RECOMMENDATIONS

In order for Tanzania to benefit from the carbon trade through forestry, it is recommended that MNRT:-

- (vii) Undertakes a detailed nation wide study to establish existing (baseline) carbon stocks in forestry in the country;
- (viii) Conducts awareness raising on carbon trading opportunities among stakeholders at all levels (Government, private sector, local communities, NGOs, civil societies and individuals);
- (ix) Establishes forestry carbon trading projects consistent with development objectives of the country;
- (x) Ensures that land ownership in the context of implementing forestry carbon trading projects is under Tanzanians or Tanzanian entities.
- (xi) Conducts training and builds technical capacity on carbon trading to allow implementation of forestry carbon trading projects;
- (xii) Establishes a permanent committee to advise the DNA on forestry sector carbon trade; and
- (xiii) Looks into the possibilities of utilizing voluntary carbon trade markets;

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Annex 4: Distribution of Forest and Woodland Resources in Mainland Tanzania

Forest Use	Number of Forest Reserves	Area (ha)	% of total Forest Estate	Comments
Production	394	11,134,558	33.2	Mainly for supply of timber, poles and fuel wood
Protection	421	3,956,210	11.8	Mainly protecting critical water sources and fragile land
Sub-Total	815	15,090,798	45	Forests with legal status
Production and protection	General lands	18,401,231	55	These are the forests & woodlands that exist in general lands
Total Forest Estate	-	33,500,000	100	

Appendix 5: ABBREVIATIONS AND ACRONYMS

BET	Board of External Trade
C&I	Criteria and Indicators
CBD	Convention on Biological Diversity
CBFM	Community Based Forest Management
CBO	Community Based Organization
CCD	UN Convention on Combating Desertification and Drought
CEEST	Center for Energy, Environment, Science and Technology
CSD	Civil Service Department
CSRP	Civil Service reform Programme
CU	Coordinating Unit
DC	District Council
EAC	East African Community
EIA	Environmental Impact Assessment
ERP	Economic Recovery Programme
ESAP	Economic and Social Action Programme
FAG	Forestry Advisory Group
FBD	Forestry and Beekeeping Division
GDP	Gross Domestic Product
GEF	Global Environmental Facility
HIPC	Highly Indebted Poor Countries
IK	Indigenous Knowledge
IPF	Intergovernmental Panel on Forests
IUCN	The International Union for the Conservation of Union
JFM	Joint Forest Management
LGA	Local Governments Authority
LGRP	Local Government Reform Programme
LGRT	Local Government Reform Team
LMDA	Logging and Miscellaneous Deposit Account
LUP	Land Use Planning
MCDWCA	Ministry of Community Development, Women and Children Affairs
MEM	Ministry of Energy and Minerals
MIS	Management Information System
MNRT	Ministry of National Resources and Tourism
MoAF	Ministry of Agriculture and Food Security
PO- MRALG	President's Office Regional Administration and Local Government
MTEF	Medium Term Expenditure Framework
NAFORM	National Forestry Research Master Plan
NBSAP	National Biodiversity Strategy and Action Plan
NCSSD	National Conservation Strategy for Sustainable Development
NEAP	National Environment Action Plan
NEMC	National Environmental Management Council
NFP	National Forest Programme
NGOs	Non- governmental organizations
NLUPC	National Land Use Planning Commission
NPES	National Poverty Eradication Strategy
NWFP	Non-wood Forest Products
PRS	Poverty reduction Strategy
PSRP	Public Service Reform Programme

RAS	Regional Administrative Secretariats
RPFB	Rolling Plan and Forward Budget
SADC	Southern Africa Development Community
SAP	Structural Adjustment Programme
SC	Steering Committee
SFM	Sustainable Forest Management
SPM	Southern Paper Mills Ltd
SUA	Sokoine University of Agriculture
SWAp	Sector Wide Approaches
TAFORI	Tanzania Forestry Research Institute
TANESCO	Tanzania Electric Supply Company
TFAP	Tanzania Forestry Action Plan
TWICO	Tanzania Wood Industry Corporation
UNCED	UN Conference on Environment and Development
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests

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