Forestry Department
Food and Agriculture Organization of the United Nations

GLOBAL FOREST RESOURCES ASSESSMENT 2010

COUNTRY REPORT

UNITED REPUBLIC OF TANZANIA

FRA2010/222
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The Forest Resources Assessment Programme

Sustainably managed forests have multiple environmental and socio-economic functions important at the global, national and local scales, and play a vital part in sustainable development. Reliable and up-to-date information on the state of forest resources - not only on area and area change, but also on such variables as growing stock, wood and non-wood products, carbon, protected areas, use of forests for recreation and other services, biological diversity and forests' contribution to national economies - is crucial to support decision-making for policies and programmes in forestry and sustainable development at all levels.

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Forest Resources Assessment Programme. This country report forms part of the Global Forest Resources Assessment 2010 (FRA 2010).

The reporting framework for FRA 2010 is based on the thematic elements of sustainable forest management acknowledged in intergovernmental forest-related fora and includes variables related to the extent, condition, uses and values of forest resources, as well as the policy, legal and institutional framework related to forests. More information on the FRA 2010 process and the results - including all the country reports - is available on the FRA Web site (www.fao.org/forestry/fra).

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Introduction

National Context

About 40% of the Tanzania's 88 359 000 hectares 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. More information on the Tanzania National Forest Programme (NFP) can be found at the website www.nfp.co.tz

1 Table T1 – Extent of Forest and Other wooded land

1.1 FRA 2010 Categories and definitions

Category	Definition
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds *in situ*. It does not include land that is predominantly under agricultural or urban land use.
Other wooded land	Land not classified as "Forest", spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds *in situ*; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.
Other land	All land that is not classified as "Forest" or "Other wooded land".
Other land with tree cover (Subordinated to "Other land")	Land classified as "Other land", spanning more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.

1.2 National data

1.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1. Millington, A., and Towsend, J. (eds.) 1989. Biomass assessment. Woody biomass in the SADC region. Earth scans Publication Ltd. London. UK.	H	Definition and Land use cover	1984	
2. Hunting, Technical Services. 1997. National reconnaissance Level Land Use and Natural Resources Mapping.	H	Forest Cover, Land use cover classification	1995	
3. Ministry of Natural Resources and Tourism. 2001. The Tanzania National Forest Programme 2001-2010, Government Printers.	H	Land use	2001	
4. Ministry of Natural Resources and Tourism. 2008. Participatory Forest Management in Tanzania, Facts and Figures.	H	Forest Trends Woodland Trends	1995/2008	

1.2.2 Classification and definitions

National class	Definition
Wet Miombo Woodland	These have been sub-divided into three main categories: dry, wet seasonal and Wet Miombo. The largest areas of Wet Miombo Woodland are found on the border with Burundi, Rwanda and Zaire, extending from west of Lake Victoria to the Fipa Plateau. They are mainly dry evergreen forests and moist forests are much less common. The forest can be divided into : i. Moist lowland forest in some of the eastern highlands and also along Lake Tanzania. Here the upper canopy varies in height from 25 to 45m, a middle layer is found between 6 and 15m. ii. Dry evergreen forest-can be divided into lowland and Montane variants. These rarely exceed 25m in height and the forest has a simple structure. iii. Dry Montane evergreen forest is restricted to the North-East and Central Highland. Pure –stand forests also occur and the main types are fire-induced *Arundinaria alpine* thickets of 4-15 m high with associated woody species, the partially fire-resistant *Hagenia abyssinica* forest that is 9-15m tall and is found between 1800 and 3400 mail and the *Juniperus procera* forest in areas receiving between 1000 and 1500mm rainfall per year, at altitudes of between 1800 and 2900 masl. It is usually above 15m in height but rarely reaches more than 20m. The woodland is usually slightly open but a shrub layer rarely occurs
Wet Seasonal Miombo Woodland	Wet seasonal Miombo Woodland accounts for most of the eastern third of Tanzania. The class is floristically poorer than the Wet Miombo Woodland and is dominated by *Brachystegia speciformis*, *B. boehmii, Julbernardia globiflora* and *J. magnistipulata.* The canopy rarely exceeds 15m in height and is slightly more open than the Wet Miombo Woodland.
Dry Miombo Woodland	Dry Miombo Woodland is restricted to the west of Tanzania. The phenology of this class is similar to that of Wet Seasonal Miombo Woodland. The dominant species is *Brachystegia spp*. and *Julbernardia globiflora.* Generally, the woodlands are floristically poor and less than 15m high. In adverse conditions they may be as low as 3m.
Cleared Miombo Woodland	Restricted to South-West Tanzania. The class is dominated by a mosaic of woodlands and cultivation plots. After the first year of cultivation, three succession phases were identified. During the third phase, woody species have gained such a hold on the plots that canopy woodland has formed. Shrubs are absent and only grasses and sedges are found under the trees. The original woodland trees are absent. They are replaced by fire-resistant and fire-tolerant trees of the *Combretum* savannah. The picture is one of declining Miombo woodland species and an invasion of savannah woodland species, especially those related to *Combretum* savannah. As pressure on the land increases, the recovery time for abandoned plots shortens and the proportion of savannah woodland to Miombo woodland trees increases.
Coastal Forest Mosaic	The Coastal Forest Mosaic is most extensive along the coast between Dar-es-Salaam and Samanga. Much of this has now reverted to Miombo woodland but less disturbed evergreen forests can still be found. Nevertheless small patches do occur as outlets in the Wet and Wet seasonal Miombo Woodlands. Inland of Dae-es-Salaam, large areas of moist forest with transitional evergreen bushland and scrub forests are found extending Southwards to the Matandu River. This is generally a floristically rich forest, 15-20m tall, with emergents of 30-35m high. The main canopy species are *Afzelia quanzensis* and *Erythrina sacleuxii.* The coastal forest mosaic contains high woody-biomass growing stocks and has high levels of productivity. Exploitation

	however, is limited in the case of mangroves by physical accessibility. The inland moist forest is more fragile ecosystem than mangroves and is easily prone to vegetation if over-exploitation.
Semi-Arid Steppe	The vegetation is characteristically dense bushland, 3-7m tall, with few emergent trees of up to 20m high. Evergreen usually form between 2.5% and 10% of the total trees and shrubs. A shrub layer is also found, the main species being *C.aculeatum*, *Grewia spp.* and *Maerua spp*. The bushland also contains succulents and climbers. Within the bushland area, there are also isolated patches of thickets vegetation ranging in size from small patches around old *Terminalia* to large areas of several hundred square kilometres. Five main types can be identified: i. Itigi thickets : This is a dense intertwined deciduous thickets of 3-5m in height, dominated *Baphia burttii, B. massaiensis* with emergent evergreen and semi green trees up to 8m ii. *Cordyla* thickets in the east and is dominated by *Croton spp* iii. *Commiphora* thicket and iv. A thicket on the hills dominated by *Dalbergia spp. Diospyros spp.,* and *Teclea spp.* In drier upland area, between the Acacia-Commiphora bushland and Montane woodlands and forests, an evergreen to semi evergreen bushland is found. It is generally between 3 and 7m in height. Scrub forest is found locally in areas with slightly higher rainfall. The canopy is irregularly spaced but there is a dense under-storey usually reaching between 3 and 5m in height. Edaphic wooded grassland found in valleys, flood plains and pans is also included in this class. These are prominently grassland with wooded areas, usually dominated by either Acacia spp. or palms.
Semi-Arid Dry Steppe	The vegetation consists of deciduous bushland and thicket with markedly seasonal vegetation growth and extensive grassy plains free from woody vegetation. The deciduous bushland is characterised in its natural state by stunted shrubs (2-6 high) with only occasional emergent trees rising to a maximum of 10m in height. The most extensive, wooded vegetation type is the *Acacia Commiphora* thorn savannah". In the coastal region, lowland forest and woodland has been commonly replaced by secondary scrubby woodland and grassland. The original *Diospyrus cornii* and *Manilkara mochisia* scrub forest that was 9-15m tall has degraded to secondary deciduous bushland.

1.2.3 Original data

Data for reference year 1984

National Classes	**Area in km^2**
Wet Miombo Woodland	71 941
Wet Seasonal Miombo Woodland	273 936
Dry Miombo Woodland	116 671
Cleared Miombo Woodland	70 028
Coastal Forest Mosaic	15 102
Semi-Arid Steppe	185 368
Semi-Arid Dry Steppe	107 051
Others	104 993
Total country area	**945 090**

Data for reference year: 1995

National Classes	Area in hectares
Airport	114
Airstrip	31
B(et) Bushland with emergent trees	5 355 977
Bd Dense Bushland	597 581
Bo Open Bushland	944 082
BSc Bushland with scattered cultivation	9 234 805
BSL Bare Soil	126 178
Bt Thicket	524 827
Bt(et) Thicket with emergent trees	659 001
Cbc Cultivation with Bushy Crops	89 234
Cultivation with Herbaceous Crops	2 187 337
Cm Mixed cropping	6 322 958
Ctc Cultivation with Tree cropping	1 433 224
Cultivation & Tree Cropping (shade trees)	110 755
Fm Mangrove	156 878
Fn Natural forest	2 431 315
Fp Plantation	134 914
Gb Bushed grassland	1 962 818
Gbs Bushed grassland (seasonally Inundated)	2 923 033
Go Open Grassland	1 859 897
Gos Open grassland (seasonally Inundated)	1 782 196
GSc Grassland with scattered cropland	4 703 634
GW Wooded grassland	4 072 640
Gws Wooded grassland (seasonally inundated)	2 056 166
Ice	1 552
RO rock outcrops	9 281
S/M Swamp /March (permanent)	981 260
SC Salt crusts	1 987
Urban	64 585
Wc Closed woodland	5 719 223
Wo Open woodland	24 721 670
WSc Woodland with scattered Cropland	6 994 674
TOTAL Land Area	**88 163 827**
IW inland water	6 344 789
Ocean	26 068
TOTAL Country Area	**94 534 685**

1.3 Analysis and processing of national data

1.3.1 Calibration

Not necessary for the 1984 data where the adjustments will be made to the "other land" category. The 1995 data have been calibrated to the FAOSTAT land area as follows:

National land area in ha	88 163 827
FAOSTAT land area in ha	88 580 000
Calibrating factor	1.004720451

National Classes	Original data Area in hectares	Calibrated area in hectares
Airport	114	115
Airstrip	31	31
B(et) Bushland with emergent trees	5 355 977	5 381 260
Bd Dense Bushland	597 581	600 402
Bo Open Bushland	944 082	948 538
BSc Bushland with scattered cultivation	9 234 805	9 278 397
BSL Bare Soil	126 178	126 774
Bt Thicket	524 827	527 304
Bt(et) Thicket with emergent trees	659 001	662 112
Cbc Cultivation with Bushy Crops	89 234	89 655
Cultivation with Herbaceous Crops	2 187 337	2 197 662
Cm Mixed cropping	6 322 958	6 352 805
Ctc Cultivation with Tree cropping	1 433 224	1 439 989
Cultivation & Tree Cropping (shade trees)	110 755	111 278
Fm Mangrove	156 878	157 619
Fn Natural forest	2 431 315	2 442 792
Fp Plantation	134 914	135 551
Gb Bushed grassland	1 962 818	1 972 083
Gbs Bushed grassland (seasonally Inundated)	2 923 033	2 936 831
Go Open Grassland	1 859 897	1 868 677
Gos Open grassland 9seasonally Inundated)	1 782 196	1 790 609
GSc Grassland with scattered cropland	4 703 634	4 725 837
GW Wooded grassland	4 072 640	4 091 865
Gws Wooded grassland (seasonally inundated)	2 056 166	2 065 872
Ice	1 552	1 559
RO rock outcrops	9 281	9 325
S/M Swamp /March (permanent)	981 260	985 892
SC Salt crusts	1 987	1 996
Urban	64 585	64 890
Wc Closed woodland	5 719 223	5 746 220
Wo Open woodland	24 721 670	24 838 367
WSc Woodland with scattered Cropland	6 994 674	7 027 692
TOTAL Land area	**88 163 827**	**88 580 000**

1.3.2 Reclassification into FRA 2010 categories

The 1984 data set was reclassified using the following matrix:

National Classes	Forests	OWL	OL+ Inland Water
Wet Miombo Woodland	100%		
Wet Seasonal Miombo Woodland	100%		
Dry Miombo Woodland	67%	33%	
Cleared Miombo Woodland		50%	50%
Coastal Forest Mosaic	100%		
Semi-Arid Steppe		50%	50%
Semi-Arid Dry Steppe		33%	67%
Others			100%

Compared to FRA 2005, the “Semi-Arid Steppe” category has been classified differently to better match the definition of “other wooded land”.

1984 data after reclassification

	Area in km^2		
	Forests	**OWL**	**OL + Inland Water**
Wet Miombo Woodland	71 941	0	0
Wet Seasonal Miombo Woodland	273 936	0	0
Dry Miombo Woodland	78 170	38 501	0
Cleared Miombo Woodland	0	35 014	35 014
Coastal Forest Mosaic	15 102	0	0
Semi-Arid Steppe	0	92 684	92 684
Semi-Arid Dry Steppe	0	35 327	71 724
Others			104 993
Total	439 149	201 526	304 415

The 1995 data set was reclassified using the following matrix:

National Classes	**Forest**	**OWL**	**OL**	**OLWTC**
Airport			100%	
Airstrip			100%	
B(et) Bushland with emergent trees		100%		
Bd Dense Bushland		100%		
Bo Open Bushland		100%		
BSc Bushland with scattered cultivation			100%	100%
BSL Bare Soil			100%	
Bt Thicket		100%		
Bt(et) Thicket with emergent trees		100%		
Cbc Cultivation with Bushy Crops			100%	
Cultivation with Herbaceous Crops			100%	
Cm Mixed cropping			100%	
Ctc Cultivation with Tree cropping			100%	
Cultivation & Tree Cropping (shade trees)			100%	
Fm Mangrove	100%			
Fn Natural forest	100%			
Fp Plantation	100%			
Gb Bushed grassland		100%		
Gbs Bushed grassland (seasonally Inundated)		100%		
Go Open Grassland			100%	
Gos Open grassland (seasonally Inundated)			100%	
GSc Grassland with scattered cropland			100%	
GW Wooded grassland	100%			
Gws Wooded grassland (seasonally inundated)	100%			
Ice			100%	
RO rock outcrops			100%	
S/M Swamp /March (permanent)			100%	
SC Salt crusts			100%	
Urban			100%	
Wc Closed woodland	100%			
Wo Open woodland	100%			
WSc Woodland with scattered Cropland		50%	50%	

Results after reclassifying 1995 data

National Classes	Area in hectares			
	Forest	**OWL**	**OL**	**OLWTC**
Airport	0	0	115	0
Airstrip	0	0	31	0
B(et) Bushland with emergent trees	0	5 381 260	0	0
Bd Dense Bushland	0	600 402	0	0
Bo Open Bushland	0	948 538	0	0
BSc Bushland with scattered cultivation	0		9 278 397	9 278 397
BSL Bare Soil	0	0	126 774	0
Bt Thicket	0	527 304	0	0
Bt(et) Thicket with emergent trees	0	662 112	0	0
Cbc Cultivation with Bushy Crops	0	0	89 655	0
Cultivation with Herbaceous Crops	0	0	2 197 662	0
Cm Mixed cropping	0	0	6 352 805	0
Ctc Cultivation with Tree cropping	0	0	1 439 989	0
Cultivation & Tree Cropping (shade trees)	0	0	111 278	0
Fm Mangrove	157 619	0	0	0
Fn Natural forest	2 442 792	0	0	0
Fp Plantation	135 551	0	0	0
Gb Bushed grassland	0	1 972 083	0	0
Gbs Bushed grassland (seasonally Inundated)	0	2 936 831	0	0
Go Open Grassland	0	0	1 868 677	0
Gos Open grassland (seasonally Inundated)	0	0	1 790 609	0
GSc Grassland with scattered cropland	0	0	4 725 837	0
GW Wooded grassland	4 091 865	0	0	0
Gws Wooded grassland (seasonally inundated)	2 065 872	0	0	0
Ice	0	0	1 559	0
RO rock outcrops	0	0	9 326	0
S/M Swamp /March (permanent)	0	0	985 892	0
SC Salt crusts	0	0	1 996	0
Urban	0	0	64 890	0
Wc Closed woodland	5 746 220	0	0	0
Wo Open woodland	24 838 367	0	0	0
WSc Woodland with scattered Cropland	0	3 513 846	3 513 846	0
TOTAL	**39 478 286**	**16 542 376**	**32559338**	**9 278 397**

Notes: According to National Forestry Programme in Tanzania, there is an estimated 150 000 ha of plantations in Tanzania. Of these, 80 000 ha is under forest reserves and the rest in unreserved areas.

Summary of 1984 and 1995 reference years

FRA Categories	Area in hectares	
	1984	**1995**
Forest	43 914 900	39 478 286
OWL	20 152 600	16 542 376
OL	24 512 500	32 559 338
Total land Area	88 580 000	88 580 000

1.3.3 Estimation and forecasting

A- Forest:
Based on the previous table, it is assumed a net loss of 4 436 614 ha over 11 year or an average of 403 328.5 ha per year. This trend is applied up to 2010.

B- OWL:
Based on the previous table, it is assumed a net loss of 3 610 224 ha over 11 year or an average of 328 202 ha per year. This trend is applied up to 2010.

FRA Categories	Area in hectares				
	1990	1995	2000	2005	2010
Forest	41 494 929	39 478 286	37 461 644	35 445 001	33 428 359
OWL	18 183 389	16 542 376	14 901 364	13 260 351	11 619 339
OL	28 901 682	32 559 338	36 216 993	39 874 648	43 532 303
Inland Water	6 150 000	6 150 000	6 150 000	6 150 000	6 150 000
Total Country Area	**94 730 000**	**94 730 000**	**94 730 000**	**94 730 000**	**94 730 000**

1.4 Data for Table T1

FRA 2010 categories	Area (1000 hectares)			
	1990	2000	2005	2010
Forest	41 495	37 462	35 445	33 428
Other wooded land	18 183	14 901	13 260	11 619
Other land	28 902	36 217	39 875	43 533
...of which with tree cover	n/a	n/a	n/a	n/a
Inland water bodies	6 150	6 150	6 150	6 150
TOTAL	**94 730**	**94 730**	**94 730**	**94 730**

1.5 Comments to Table T1

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest	Public land is now called General land, same applies to Public forests are called General land forests.	Based on the data sources, the present trend has been defined. Nevertheless, the estimate of forest change raises questions. In fact, it remains difficult to assess the forest changes. Depending on the information, reports or knowledge, the estimates range between 92.000 and 500.000 ha annually. Besides, it is difficult to survey and analyse the impact of programmes, such as : Community Based Forest Management and Joint Forest Management A national forest inventory (started in 2009) is on-going and it is expected that better and accurate assessment could be provided in 2010/2011.

Other wooded land		Similar comment than above.
Other land		
Other land with tree cover		
Inland water bodies		The inland water bodies have remained stable as at FRA 2005

Other general comments to the table
It should be noted that several changes in the FRA 2010, compared to FRA 2005: - Land area of Tanzania has been reassessed (FAOStat) and is now equal to 88 580 000 ha, - From the data source 1984, the "Semi-Arid Steppe" category has been classified differently to better match the FRA definition of "other wooded land". According to a report by the Centre for Energy, Environment, Science and Technology (1999), 24.4% of original tropical closed forests cover was transferred to other classes during the period of 1976 through 1990 as follows: 1. 115 000 ha converted to permanent agricultural land and pasture 2. 38 000 ha to secondary forests (i.e. 8000 ha to thickets and 30000 ha to bushland /thickets) 3. 202 000 ha converted to wooded grassland or fragmented forests, which in turn changed to other land cover as an intermediate stage towards permanent agriculture and pasture. Forests in General Land are the most affected forests types by human activities. The National Forest programme in Tanzania (2001-2010) estimates a deforestation rate between 130 000 ha and 500 000 ha. The main reason for deforestation are reported as agriculture, overgrazing, charcoal burning, woodfuel harvesting, bush fires for various reasons and harvesting for industrial wood, particularly export of logs to China and the Far East. Recent efforts to establish Community based Forest Management and Joint Forest Management are thought to have reduced the annual net loss of forest, but reliable figures on their impact are not yet available.

Expected year for completion of ongoing/planned <u>national</u> forest inventory and/or RS survey / mapping	
Field inventory	2010
Remote sensing survey / mapping	2010

2 Table T2 – Forest ownership and management rights

2.1 FRA 2010 Categories and definitions

Category	Definition
Public ownership	Forest owned by the State; or administrative units of the public administration; or by institutions or corporations owned by the public administration.
Private ownership	Forest owned by individuals, families, communities, private co-operatives, corporations and other business entities, private religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.
Individuals *(sub-category of Private ownership)*	Forest owned by individuals and families.
Private business entities and institutions *(sub-category of Private ownership)*	Forest owned by private corporations, co-operatives, companies and other business entities, as well as private non-profit organizations such as NGOs, nature conservation associations, and private religious and educational institutions, etc.
Local communities *(sub-category of Private ownership)*	Forest owned by a group of individuals belonging to the same community residing within or in the vicinity of a forest area. The community members are co-owners that share exclusive rights and duties, and benefits contribute to the community development.
Indigenous / tribal communities *(sub-category of Private ownership)*	Forest owned by communities of indigenous or tribal people.
Other types of ownership	Other kind of ownership arrangements not covered by the categories above. Also includes areas where ownership is unclear or disputed.
Categories related to the holder of management rights of public forest resources	
Public Administration	The Public Administration (or institutions or corporations owned by the Public Administration) retains management rights and responsibilities within the limits specified by the legislation.
Individuals/households	Forest management rights and responsibilities are transferred from the Public Administration to individuals or households through long-term leases or management agreements.
Private institutions	Forest management rights and responsibilities are transferred from the Public Administration to corporations, other business entities, private co-operatives, private non-profit institutions and associations, etc., through long-term leases or management agreements.
Communities	Forest management rights and responsibilities are transferred from the Public Administration to local communities (including indigenous and tribal communities) through long-term leases or management agreements.
Other form of management rights	Forests for which the transfer of management rights does not belong to any of the categories mentioned above.

2.2 National data

2.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1. Ministry of Natural Resources and Tourism. 2001. The Tanzania National Forest Programme 2001-2010, Government Printers.	H	Forests trends	1998	

2.2.2 Classification and definitions

National class	Definition
Forests on General land	Forests on Government Land, owned by either central or local Governments and under the ultimate authority of the Commissioner of land.

2.2.3 Original data

According to the above source, about 13 millions hectares of forest have been gazetted as forest reserve and they are managed by the Forest and Beekeeping Division. It is broadly estimated that area under Private and Community is between 70 000 – 150 000 ha. Then the remaining forest area belongs to public land.

These data are considered to be valid for the different reporting years.

2.3 Analysis and processing of national data

2.3.1 Estimation and forecasting

A- Forest ownership
It is assumed that:
- Public ownership includes forest reserves and forests on public land.
- Private Ownership was 70 000 ha in 1990, 120 000 ha in 2000 and 150 000 ha in 2005.

B- Management of Public forest
It is known that the 13 millions hectares of forest reserves are managed by Public Administration. For the remaining, the management could be by the central or local governments or communities.

2.4 Data for Table T2

Table 2a - Forest ownership

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public ownership	41 425	37 342	35 295
Private ownership	70	120	150
...of which owned by individuals	n/a	n/a	n/a
...of which owned by private business entities and institutions	n/a	n/a	n/a
...of which owned by local communities	n/a	n/a	n/a
...of which owned by indigenous / tribal communities	n/a	n/a	n/a
Other types of ownership	0	0	0
TOTAL	**41 495**	**37 462**	**35 445**

Note: If other types of ownership are reported, please specify details in comment to the table.

Does ownership of trees coincide with ownership of the land on which they are situated?		Yes
	X	No
If **No** above, please describe below how the two differ:		
In some cases the ownership of trees do not coincide with ownership of land, e.g. under general land, the general land is the property of the State whereby trees could be owned by various entities like institutions, communities or private individuals.		

Table 2b - Holder of management rights of public forests

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public Administration	13 000	13 000	13 000
Individuals	n/a	n/a	n/a
Private corporations and institutions	n/a	n/a	n/a
Communities	n/a	n/a	n/a
Other	28 425	24 342	22 295
TOTAL	**41 425**	**37 342**	**35 295**

2.5 Comments to Table T2

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Public ownership	All forests on General land and National Reserves are owned by the public. Public forest management is by public administration. There are no concessions to local communities, privates or others to manage public forests. Under limited cases there are joint management between the Public administration and communities, but these	

	are not concessions, they are rather collaborative /joint under special memorandum of understanding. Concession arrangements are yet to be legally institutionalized in Tanzania. In cases where utilization of concession takes place the arrangements are under memorandum of understanding until regulations governing concession shall be made operational.	
Private ownership	Forests dedicated to forestry by private owner, whether in village land or general land	It should be noted that private ownership of forests has been increasing in the recent years due to a rush by the Private investors investing in plantation forests and expansion of the existing investors by legalizing more land to their original land parcels due to good investment environment, peace and stability of the country. In Tanzania prior to Village Land act and Land Act of 1999, Communal and/or individual forest ownership in public land were very risk, hence a decrease in private ownership to avoid risk and uncertainty, however since after 1999 up to FRA 2005 the Communal, Individual and Private ownership had been more secured by the two land acts.
Other types of ownership		
Management rights	All stakeholders have management obligations on public forests through arrangements such as joint forest management, collaborative forest management, concession arrangements etc, however the rights are entrusted to the public administration. The area listed under "other" refers to areas which may be managed by the central or local governments or communities.	

Other general comments to the table
The definition of "Indigenous" is not popular in Tanzania, all people are treated as equal, thus no any group should be treated as "Indigenous". A large area of forest and OWL (around 3 534 000 ha) has came under participatory management between 1995 and 2008. However it is not possible to split this into forest and OWL.

3 Table T3 – Forest designation and management

3.1 FRA 2010 Categories and definitions

Term	Definition
Primary designated function	The primary function or management objective assigned to a management unit either by legal prescription, documented decision of the landowner/manager, or evidence provided by documented studies of forest management practices and customary use.
Protected areas	Areas especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.
Categories of primary designated functions	
Production	Forest area designated primarily for production of wood, fibre, bio-energy and/or non-wood forest products.
Protection of soil and water	Forest area designated primarily for protection of soil and water.
Conservation of biodiversity	Forest area designated primarily for conservation of biological diversity. Includes but is not limited to areas designated for biodiversity conservation within the protected areas.
Social services	Forest area designated primarily for social services.
Multiple use	Forest area designated primarily for more than one purpose and where none of these alone is considered as the predominant designated function.
Other	Forest areas designated primarily for a function other than production, protection, conservation, social services or multiple use.
No / unknown	No or unknown designation.
Special designation and management categories	
Area of permanent forest estate (PFE)	Forest area that is designated to be retained as forest and may not be converted to other land use.
Forest area within protected areas	Forest area within formally established protected areas independently of the purpose for which the protected areas were established.
Forest area under sustain-able forest management	To be defined and documented by the country.
Forest area with management plan	Forest area that has a long-term (ten years or more) documented management plan, aiming at defined management goals, which is periodically revised.

3.2 National data

3.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1. Shand M.C: Digital Cartography. Department of Geography and Topographic Science. University of Glasgow. Glasgow, Scotland U.K 1996-1997	H	National parks, Game Reserves and Conservation areas	1996/97	National Parks and Game reserves are highly protected areas, in terms of coverage and conservation status, these fall under the jurisdiction of the Wildlife Act in the Wildlife Division and not the Forest Act 2002 under the Forest and Beekeeping Division in Tanzania. However both Acts are under the

				same Ministry i.e. The Minister responsible for Forests is also responsible for Wildlife (National Parks & Game Reserves).
2. Kihiyo V.B.M.S 1998. Forest Policy changes in Tanzania: Towards Community Participation in Forest Management	H	Production and Protection Forest	1963/98	Changes were made to the 1963 Policy to come up with the 1998 policy, which is also currently under review
3. Ministry of Natural Resources and Tourism. Budget Speeches 2005/06; 2006/07 & 2007/08: www.tanzania.go.tz	H	Production and Protection Forest	2005/2008	
3.Ministry of Natural Resources and Tourism. National Forest Programme 2001-2010. www.nfp.co.tz	H	Conservation of Biodiversity and Multipurpose forests	2005/2008	
4. Ministry of Natural Resources and Tourism. National Forest Programme 2010/2011. www.nfp.co.tz	H	Conservation of Biodiversity and Multipurpose forests	2008/2011	

3.2.2 Classification and definitions

3.2.3 Original data

There two primary functions of forests in Tanzania, production and protective. According to Kihiyo, 1998, production forests are estimated at 71% of the total forests area as opposed to 29% protective forests.

Source 2 : Reference year, 1997.

Use of forest land	**Area in 1000 hectares**
Production forest	23 810
Protection (including water catchments)	9 745
Total	**33 555**
Legal status	
Forest reserve	12 517
Forest/woodland within national parks etc	2 000
Non-reserved forest land	19 038
Total	**33 555**

3.3 Analysis and processing of national data

3.3.1 Reclassification into FRA 2010 categories

FRA Categories	Production	Protection of soil and water	Conservation of biodiversity	Social	Multipurpose
Production	100%				
Protection*			21%		79%
Non-reserved forest land					100%

Note : In Tanzania, the Conservation of Soil Forests fall under Multiple use forest you can not separate and account them in terms of areas separately/independently.

Results after reclassification:

FRA Categories	1997 (in 1000 ha)	%
Production	23 810	71%
Conservation of biodiversity	2 000	6%
Multipurpose	7 745	23%
Total Forest Area	**33 555**	100%

3.3.2 Estimation and forecasting

Results of Table 1 will be used as inputs.
For the different reporting years, it has been considered that the "conservation of biodiversity" area (2 000 000 ha) remains constant.

Then, for 1990, 2000 and 2005, the remaining area is subdivided in Production and Multipurpose categories, based on the following percentages: 75% and 25%.

	Area in 1000 hectares			
FRA Categories	1990	2000	2005	2010
Production	29 621	26 597	25 084	23 571
Conservation of biodiversity	2 000	2 000	2 000	2 000
Multipurpose	9 874	8 866	8 361	7 857
Total Forest	**41 495**	**37 462**	**35 445**	**33 428**

3.4 Data for Table T3

Table 3a – Primary designated function

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Production	29 621	26 596	25 084	23 571
Protection of soil and water	0	0	0	0
Conservation of biodiversity	2 000	2 000	2 000	2 000
Social services	0	0	0	0
Multiple use	9 874	8 866	8 361	7 857
Other (please specify in comments below the table)	0	0	0	0
No / unknown	0	0	0	0
TOTAL	**41 495**	**37 462**	**35 445**	**33 428**

Table 3b – Special designation and management categories

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Area of permanent forest estate	13 000	13 000	13 000	13 000
Forest area within protected areas	2 000	2 000	2 000	2 000
Forest area under sustainable forest management	n/a	n/a	n/a	n/a
Forest area with management plan	9 874	9 205	9 041	28 577

3.5 Comments to Table T3

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Production		
Protection of soil and water	In Tanzania the Social Forests and Conservation of Soil Forests fall both under Multiple use forest you can not separate and account them in terms of areas separately/independently.	
Conservation of biodiversity	Areas under this category are usually permanent estates with no significant changes, usually stable	.
Social services	In Tanzania the Social Forests and Conservation of Soil Forests fall both under Multiple use forest you can not separate and account them in terms of areas separately/independently.	
Multiple use	Multiple use forest management objectives overlap also with production management objectives.	
Other		
No / unknown designation		
Area of permanent forest estate	Areas of gazetted forests, which include mangroves. (Source: Ministry of Natural Resources and Tourism. National Forest Programme 2001-2010)	
Forest area within protected areas		
Forest area under sustainable forest management		
Forest area with management plan	Figures (for 1990 to 2005) are based on expert knowledge. Since 2005, there is an increase in areas under Participatory Forest Management Plans. Some of these plans cover areas which are classified as “Other Wooded land”. Note that most of other woodland areas when under PFM if managed under the regime for a considerable time they transform into forest category (enhancements)(cases can be noted from “ngitili” of Shinyanga in central Tanzania) More efforts is being directed to have all forests under management plans as the country enters in	

	REDD initiatives strategies under various arrangements and Partnerships.	

Other general comments to the table

4 Table T4 – Forest characteristics

4.1 FRA 2010 Categories and definitions

Term / category	Definition
Naturally regenerated forest	Forest predominantly composed of trees established through natural regeneration.
Introduced species	A species, subspecies or lower taxon, occurring outside its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans).
Characteristics categories	
Primary forest	Naturally regenerated forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Other naturally regenerated forest	Naturally regenerated forest where there are clearly visible indications of human activities.
Other naturally regenerated forest of introduced species *(sub-category)*	Other naturally regenerated forest where the trees are predominantly of introduced species.
Planted forest	Forest predominantly composed of trees established through planting and/or deliberate seeding.
Planted forest of introduced species *(sub-category)*	Planted forest, where the planted/seeded trees are predominantly of introduced species.
Special categories	
Rubber plantations	Forest area with rubber tree plantations.
Mangroves	Area of forest and other wooded land with mangrove vegetation.
Bamboo	Area of forest and other wooded land with predominant bamboo vegetation.

4.2 National data

4.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1. Ministry of Natural Resources and Tourism. 2001. The Tanzania National Forest Programme 2001-2010, Government Printers.	H	Forests trends	1998	
2. Ministry of Natural Resources and Tourism. 2008. Participatory Forest Management in Tanzania, Facts and Figures	H	Forest Trends Woodland Trends	2005/2008	
The world's mangrove 2005-2010	M	Mangroves	2000, 2005, and 2010	Data are directly reported in the table T4b.

4.2.2 Classification and definitions

4.2.3 Original data

According to Tanzania Forestry Action Plan (1990/91-2007/08), it is said that 83 000 ha of industrial plantations are managed by central and local governments.

Furthermore the forested area under private and community forestry is estimated between 70 000 and 150 000 ha, which are mainly plantations. Assumption has been made in table T2 about the expansion of these private forests between 1990 and 2005.

	Forest area (1000 hectares)		
	1990	2000	2005
Private ownership	70	120	150

Then, recently, there is large-scale of plantation project with Kilombero Valley Teak Compagny. They intend to reach 10 350 ha in 2011.

4.3 Analysis and processing of national data

4.3.1 Estimation and forecasting

For the reporting years (1990, 2000 and 2005), planted forest is equal government plantations + private plantation.
For 2010, it is assumed that planted forest may increase by 10 000 ha compared to 2005 (Expert opinion).

4.4 Data for Table T4

Table 4a

FRA 2010 Categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Primary forest	0	0	0	0
Other naturally regenerated forest	41 345	37 262	35 215	33 188
...of which of introduced species	n/a	n/a	n/a	n/a
Planted forest	150	200	230	240
...of which of introduced species	n/a	n/a	n/a	n/a
TOTAL	**41 495**	**37 462**	**35 445**	**33 428**

Notes :
1. There has been a lot of efforts directed towards FRA 2010 category of "Other naturally regenerated forests", among others include the setting aside of land for forests under Participatory Forest Management (PFM) to encourage natural regenerations.
2. A lot of tree planting has been done, particularly of exotic (introduced species) under the continuation of Millennium tree planting campaigns which started in early 2000. Most of introduced species are found as woodlots and wood fuel plantations.

Table 4b

FRA 2010 Categories	Area (1000 hectares)			
	1990	2000	2005	2010
Rubber plantations (Forest)	n/a	n/a	n/a	n/a
Mangroves (Forest and OWL)	140	127	125	123
Bamboo (Forest and OWL)	n/a	n/a	n/a	n/a

Note: Most of the then rubber plantations were abandoned since late 1980s, hence regenerations and/or land cover changes have taken place, they no longer deserve to be categorized as Rubber plantations.

4.5 Comments to Table T4

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Primary forest	Very little proportion of primary forests are remaining in Tanzania, and mostly as fragments, this is because of the extent of disturbance by wild fires and illegal logging in 1980s to 1990s.	
Other naturally regenerating forest		
Planted forest	Planted forests are by a large proportion state owned. A lot of tree planting has been done, particularly of exotic (introduced species) under the continuation of Millennium tree planting campaigns which started in early 2000. Most of introduced species are found as woodlots and wood fuel plantations.	
Rubber plantations	Most rubber plantations were abandoned in the 1980s and have regenerated into forests or the land use have changed.	
Mangroves	The mangroves are permanent estate forest reserves, effectively protected by the Forest Act 2002. Officially recognized area of mangrove forests which are under National gazette is 115 000 ha. This is area is Officially Gazetted as National Forest Reserve, and effectively protected by the Forest Act 2002 and the Environmental Act 2004.	
Bamboo	Very little information has been documented and availed at National archives on bamboo, available information is second hand and not approved by the Forest and Beekeeping Division	

Other general comments to the table

5 Table T5 – Forest establishment and reforestation

No specific data is available for this table.

Afforestation and reforestation are being accounted in terms of number of trees planted and not in hectares, some afforestation/reforestation activities had been such as enrichment planting, whereby it is difficult to convert trees planted into hectares of reforestation/afforestation.

It is possible to consider that the results of Participatory Forest Management with a large proportion of other wooded land (3 534 000 ha) be part of the reforestation process. From 1995 to 2008, the average increase is 271 846 ha par year. (information need to be confirmed)

6 Table T6 – Growing stock

6.1 FRA 2010 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees more than X cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of Y cm, and may also include branches to a minimum diameter of W cm.
Growing stock of commercial species	Growing stock (see def. above) of commercial species.

6.2 National data

6.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1.The Centre for Energy, Environment, Science and Technology, 1999: Climate Change Mitigation in Southern Africa: Tanzania Country Study. Ministry of Energy and Minerals, Tanzania	M	Vol/ha by vegetation classes	1999	
2. Ministry of Natural Resources and Tourism 2007. National Ocular Estimates and Plantation inventories	H	GS common species (plantations)	2005/08	Not used

6.2.2 Classification and definitions

6.2.3 Original data

Volume per ha as given by source 1

National Categories (1)	Area 1000 ha	Avg m3/ha
Miombo woodlands	35 414	32
Closed Forest	1 100	185
Mangrove	120	120
Total Forest	**36 634**	**37**
Shrubs and thickets	525	**10**

6.3 Analysis and processing of national data

6.3.1 Estimation and forecasting

It is assumed that :
Vol forest = 37 m3/ha, and;
Vol Shrubs and thickets = Vol OWL = 10 m3/ha.

Applying average volume per ha to the table below to obtain growing stock gives:

	1990	2000	2005	2010
Forest area (1 000 ha)	41 495	37 462	35 445	33 428
Other wooded land area (1 000 ha)	18 183	14 901	13 260	11 619

	1990	2000	2005	2010
Forest vol (1 000 m3)	1535315	1386094	1311465	1236836
Other wooded land vol (1 000 m3)	181830	149010	132600	116190

6.3.2 Reclassification into FRA 2010 categories

6.4 Data for Table T6

Table 6a – Growing stock

FRA 2010 category	Volume (million cubic meters over bark)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Total growing stock	1 535	1 386	1 311	1 237	182	149	132	116
... of which coniferous	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... of which broadleaved	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Growing stock of commercial species	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Table 6b – Growing stock of the 10 most common species (of planted species)

FRA 2010 category / Species name			Growing stock in forest (million cubic meters)		
Rank	Scientific name	Common name	1990	2000	2005
1st	*Pinus patula*	Pines	563	563	563
2nd	*Eucalyptus maidenii*	Eucalyptus	72	72	72
3rd	*Gravillia robusta*	Gravillia	69	69	69
4th	*Tectona grandis*	Teak	65	65	65
5th	*Pinus eliotii*	Pines	54	54	54
6th	*Cupressus lustanica*	Cypress	33	33	33
7th	*Pinus caribea*	Pines	30	30	30
8th	*Eucalyptus grandis*	Mkaratusi	28	28	28
9th	*Juniperus procera*	Cedar	23	23	23
10th	*Milletia excelsa*	Mvule	19	19	19
Remaining			579	430	355
TOTAL			1 535	1 386	1 311

Notes:

- Rank refers to the order of importance in terms of growing stock, i.e. 1st is the species with the highest growing stock. Year 2000 is the reference year for defining the species list and the order of the species.
- The figures are from National Data sources (under part 6.2.1) and National Ocular estimates & Plantation Forest inventories..

Table 6c – Specification of threshold values

Item	Value	Complementary information
Minimum diameter (cm) at breast height[1] of trees included in growing stock (X)	8.4	National Plantation Forests Inventories 2009/National Ocular Estimates 2007
Minimum diameter (cm) at the top end of stem for calculation of growing stock (Y)	5.6	National Plantation Forests Inventories 2009/National Ocular Estimates 2007
Minimum diameter (cm) of branches included in growing stock (W)	1	National Plantation Forests Inventories 2009/National Ocular Estimates 2007
Volume refers to "above ground" (AG) or "above stump" (AS)	AG	National Plantation Forests Inventories 2009/National Ocular Estimates 2007

6.5 Comments to Table T6

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Total growing stock		
Growing stock of broadleaved / coniferous		
Growing stock of commercial species		
Growing stock composition		

Other general comments to the table

[1] Diameter at breast height (DBH) refers to diameter over bark measured at a height of 1.30 m above ground level or 30 cm above buttresses if these are higher than 1 m.

7 Table T7 – Biomass stock

7.1 FRA 2010 Categories and definitions

Category	Definition
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.
Below-ground biomass	All biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood	All non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.

7.2 National data

7.2.1 Original data

Table 6 GS

7.3 Analysis and processing of national data

7.3.1 Estimation and forecasting

The Formula for calculating above ground biomass has been used, based on the growing stock. The IPCC guidelines Biomass conversion and expansion factor (BCEF in humid tropical zone) has been applied as provided in the Guideline for Country reporting FRA 2010.

AGB=GS x BCEF
BCEF (forest) = 2.8
BCEF (OWL) = 9.0

BGB = AGB x R
Root shoot ratio (R) = 0.24

7.3.2 Reclassification into FRA 2010 categories

FRA 2010 category	Biomass (million metric tonnes oven-dry weight)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Above-ground biomass	4 298	3 881	3 671	3 464	1638	1341	1188	1044
Below-ground biomass	1 032	931	881	831	393	322	285	251
Dead wood	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
TOTAL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

7.4 Comments to Table T7

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Above-ground biomass	No any serious study has ever been done that can provide reliable country information. There had been considerable interventions that may have influence in biomass namely: (i) a logging ban and a ban of export of logs as from 2000 to date (ii) Massive tree planting campaigns since 2000 (Millenius tree planting) and Setting aside of forests under Participatory Forest Management for climate change under REDD and Water shade forests.	
Below-ground biomass	No any serious study has ever been done that can provide reliable country information	
Dead wood	No any serious study has ever been done that can provide reliable country information	

Other general comments to the table
No National data on dead wood biomass are available; therefore they are Not applicable (N/A). The root shoot ratio is as provided under the 5.4 of the Guideline for Country reporting FRA 2010.

8 Table T8 – Carbon stock

8.1 FRA 2010 Categories and definitions

Category	Definition
Carbon in above-ground biomass	Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.
Carbon in below-ground biomass	Carbon in all biomass of live roots. Fine roots of less than 2 mm diameter are excluded, because these often cannot be distinguished empirically from soil organic matter or litter.
Carbon in dead wood	Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in litter	Carbon in all non-living biomass with a diameter less than the minimum diameter for dead wood (e.g. 10 cm), lying dead in various states of decomposition above the mineral or organic soil.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a specified depth chosen by the country and applied consistently through the time series.

8.2 National data

8.2.1 Original data

Original Data T6 and T7.

8.3 Analysis and processing of national data

8.3.1 Estimation and forecasting

A conversion factor of 0.47 for converting biomass to carbon has been used as suggested by IPCC 2006 good practice guidelines.

B/- Carbon in the litter has been estimated, based on the standard factor of 2.1 (Tropical), and
- Soil carbon has been estimated, based on the factor of 47 (Tropical, moist with LAC soils).

The biomass/ hectare values are then applied to the forest and other wooded land area values in table T1 to get the biomass for the reporting years.

Year	1990	2000	2005	2010
Total Forest area (1000 ha)	41495	37462	35445	33428
Carbon in the litter (1000 C)	87140	78670	74435	70199
Soil carbon (1000 C)	1950265	1760714	1665915	1571116

Year	1990	2000	2005	2010
Total OWL area (1000 ha)	18183	14901	13260	11619
Carbon in the litter (1000 C)	38184	31292	27846	24400
Soil carbon (1000 C)	854601	700347	623220	546093

8.4 Data for Table T8

FRA 2010 Category	Carbon (Million metric tonnes)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Carbon in above-ground biomass	2 020	1 824	1 725	1 628	770	630	558	491
Carbon in below-ground biomass	485	438	414	391	185	151	134	118
Sub-total: Living biomass	2 505	2 262	2 139	2 019	955	782	692	609
Carbon in dead wood	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Carbon in litter	87	79	74	70	38	31	28	24
Sub-total: Dead wood and litter	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Soil carbon	1 950	1 761	1 666	1 571	855	700	623	546
TOTAL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Soil depth (cm) used for soil carbon estimates	30

8.5 Comments to Table T8

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Carbon in above-ground biomass	No any serious study has ever been done that can provide reliable country information	
Carbon in below-ground biomass	No any serious study has ever been done that can provide reliable country information	
Carbon in dead wood	No any serious study has ever been done that can provide reliable country information	
Carbon in litter	No any serious study has ever been done that can provide reliable country information	
Soil carbon	No any serious study has ever been done that can provide reliable country information	

Other general comments to the table

9 Table T9 – Forest fires

9.1 FRA 2010 Categories and definitions

Category	Definition
Number of fires	Average number of vegetation fires per year in the country.
Area affected by fire	Average area affected by vegetation fires per year in the country.
Vegetation fire *(supplementary term)*	Any vegetation fire regardless of ignition source, damage or benefit.
Wildfire	Any unplanned and/or uncontrolled vegetation fire.
Planned fire	A vegetation fire regardless of ignition source that burns according to management objectives and requires limited or no suppression action.

9.2 National data

9.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1. National Fire Startegy. Department of Forestry and Beekeeping (FBD), 2007.	H	Fire	1990-2008	
2. Hunting, Technical Services. 1997. National reconnaissance Level Land Use and Natural Resources Mapping	H	Forest Cover	1995	
3. Ministry of Natural Resources and Tourism. 2001. The Tanzania National Forest Programme 2001-2010, Government Printers.	H	Fire	2001	
4. FRA 2005. Global Forest Resource Assessment 2005. FAO	H	Fire	2005	

9.2.2 Original data

Over a 10 year period from 1990/91 to 1999/2000 in plantation forests:

Year	Fire Incidences	Affected area in ha
1990/91	22	1 002
1991/92	28	964
1992/93	17	1 934
1993/94	19	6 735
1994/95	12	2 614
5 year average (1993)		**2 649.8**
1995/96	23	3 042
1996/97	45	2 076
1997/98	17	632
1998/99	40	4 637
1999/00	33	35 237
5 year average (1998)		**9 124.8**

9.3 Analysis and processing of national data

9.3.1 Reclassification into FRA 2010 categories

	Area in hectares	
	1990	**2000**
Plantation Fire	2 649.8	9 124.8

Note: Based on the FRA 2005

For 2005, expert assessment.

9.4 Data for Table T9

Table 9a

FRA 2010 category	Annual average for 5-year period					
	1990		2000		2005	
	1000 hectares	number of fires	1000 hectares	number of fires	1000 hectares	number of fires
Total land area affected by fire	n/a	n/a	n/a	n/a	n/a	n/a
... of which on forest	3	20	9	32	15	n/a
... of which on other wooded land	n/a	n/a	n/a	n/a	n/a	n/a
... of which on other land	n/a	n/a	n/a	n/a	n/a	n/a

Notes:
1 Based on the FRA 2005 and Forest and Beekeeping Division records
2 Please see comments, information on fires is limited to plantation areas

Table 9b

FRA 2010 category	Proportion of forest area affected by fire (%)		
	1990	2000	2005
Wildfire	100	100	100
Planned fire	0	0	0

Note: The figures for the reporting years refer to the averages of annually affected areas for the 5-year periods 1988-1992, 1998-2002 and 2003-2007 respectively

9.5 Comments to Table T9

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Area affected by fire	The Country has no Capacity to track and keep record on areas affected by fires in terms of numbers of fire incidence and extent i.e. hectares, the little information available is on plantation forests only	
Number of fires	The Country has no Capacity to track and keep record on areas affected by fires in terms of numbers of fire incidence and extent i.e. hectares, the little information available is on plantation forests only	
Wildfire / planned fire	No record are available	

Other general comments to the table
The Country needs Capacity to track and keep record on areas affected by fires in terms of numbers of fire incidence and extent i.e. hectares

10 Table T10 – Other disturbances affecting forest health and vitality

Data is not available for this table. The few available data is not enough to qualify reporting at the FRA 2010 level, since it is not systematic and disorganized.

11 Table T11 – Wood removals and value of removals

11.1 FRA 2010 Categories and definitions

Category	Definition
Industrial roundwood removals	The wood removed (volume of roundwood over bark) for production of goods and services other than energy production (woodfuel).
Woodfuel removals	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

11.2 National data

11.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
FAO Statistics Division, 2008	M	Wood removal Fuelwood	2001	Figures for 1988 to 2007
Ministry of Natural Resources and Tourism. Budget Speech 2007/08., Government Printers.	H	Values	2006/08	

11.2.2 Classification and definitions

11.2.3 Original data

FAO Stat, Industrial roundwood (bark factor of 1.15 has been applied to determine volume over bark)

Year	1988	1989	1990	1991	1992
Vol m3 u.b.	1868000	1905000	1946000	1988000	2269000
Vol m3 u.b.	Average 1990 : 1995200				
Vol m3 o.b.	Average 1990 : 2294480				

Year	1998	1999	2000	2001	2002
Vol m3 u.b.	2280000	2314000	2314000	2314000	2314000
Vol m3 u.b.	Average 2000: 2307200				
Vol m3 o.b.	Average 2000 : 2653280				

Year	2003	2004	2005	2006	2007
Vol m3 u.b.	2314000	2314000	2314000	2314000	2314000
Vol m3 u.b.	Average 2005 : 2314000				
Vol m3 o.b.	Average 2005 : 2661100				

FAO Stat, Fuel wood

Year	1988	1989	1990	1991	1992
Vol m3 u.b.	18359400	18424256	18567195	18921098	19432612
Vol m3 u.b.	Average 1990 : 18740912				
Vol m3 o.b.	Average 1990 : 21552049				

Year	1998	1999	2000	2001	2002
Vol m3 u.b.	20678131	20737167	20786647	20950514	21124758
Vol m3 u.b.	Average 2000: 20855443				
Vol m3 o.b.	Average 2000 : 23983760				

Year	2003	2004	2005	2006	2007
Vol m3 u.b.	21309584	21505209	21711852	21913959	22127200
Vol m3 u.b.	Average 2005 : 21713561				
Vol m3 o.b.	Average 2005 : 24970595				

11.3 Data for Table T11

FRA 2010 Category	Industrial roundwood removals			Woodfuel removals		
	1990	2000	2005	1990	2000	2005
Total volume (1000 m^3 o.b.)	2 294	2 653	2 661	21 552	23 984	24 970
... of which from forest	2 294	2 653	2 661	21 552	23 984	24 970
Unit value (local currency / m^3 o.b.)	n/a	n/a	n/a	n/a	n/a	n/a
Total value (1000 US$)	5 987	7 166	11 637	n/a	207 866	217 119

Source: National Data Sources Part 11.2.1 (Ministry of Natural Resources and Tourism. Budget Speeches 2005/06; 2006/07 & 2007/08: *www.tanzania.go.tz)*

Note : In this case, the total volume refers only to the volume from the forest.

	1990	2000	2005
Name of local currency	USD	USD	USD

11.4 Comments to Table T11

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Total volume of industrial roundwood removals	The data here is based on legal trading of exported industrial Round wood as reported under budget speeches 2005/06; 2006/07 and 2007/08. Locally used industrial round wood can not be reported since they mostly fell under illegal curtails	The data does not include illegally obtained industrial round wood
Total volume of woodfuel removals	The data here is based on legal trading of of woodfuel removals mostly from state owned forests and some general land forests sold mostly to public institutions and some few loyal private investors for coffee & Tea curing, mostly firewood	The data does not include illegally obtained in woodfuel removals; To the majority of the people woodfuel is taken as a free access; Woodfuel removal could be higher than reported, since mostly it is illegally obtained or taken for granted as a free access
Unit value	Unit value are in most cased not Economically set, for example for the case of industrial Round wood in most cases they have been below stumpage value, for the case of woodfuel charcoal has a different unit value from firewood, sometimes the unit value is arbitrarily set e.g head load per week per person	Unit costs are influenced by rates that are set by the Minister Responsible for Forest whenever the need for change arises, may not necessarily be economically viable
Total value	Based on Budget speeches Source: National Data Sources Part 11.2.1 (Ministry of Natural Resources and Tourism. Budget Speeches 2005/06; 2006/07 & 2007/08: *www.tanzania.go.tz)* Note : In this case, the total volume refers only to the volume from the forest. Note that while the local currency is Tanzania Shillings (TAS) the figures in this table have been reported in thousand US$.	

Other general comments to the table
Based on Ocular Estimates and Traffic report of 2007 & Budget speeches 2005/06; 2006/2007; 2007/08 and 2008/09

12 Table T12 – Non-wood forest products removals and value of removals

12.1 FRA 2010 Categories and definitions

Term	Definition
Non-wood forest product (NWFP)	Goods derived from forests that are tangible and physical objects of biological origin other than wood.
Value of NWFP removals	For the purpose of this table, value is defined as the market value at the site of collection or forest border.

NWFP categories

Category
Plant products / raw material
1. Food
2. Fodder
3. Raw material for medicine and aromatic products
4. Raw material for colorants and dyes
5. Raw material for utensils, handicrafts & construction
6. Ornamental plants
7. Exudates
8. Other plant products
Animal products / raw material
9. Living animals
10. Hides, skins and trophies
11. Wild honey and bee-wax
12. Wild meat
13. Raw material for medicine
14. Raw material for colorants
15. Other edible animal products
16. Other non-edible animal products

12.2 National data

12.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1. Ministry of Natural Resources and Tourism. The Tanzania National Forest Programme 2001-2010, Special study report (2005).	H	NWFP	2005	
2. Ministry of Natural Resources and Tourism. Budget Speech 2007/08., Government Printers.	H	NWFP	2005	

12.3 Data for Table T12

Rank	Name of product	Key species	Unit	NWFP removals 2005		NWFP category
				Quantity	Value (1000 local currency)	
1st	Birds	various	No	98 112	33 834.00	9
2nd	Mammals	various	No	569	12 518.00	9
3rd	Insects	various	No	59 376	6 531.00	12
4th	Snake & Lizards	various	No	73 620	2 970.70	10
5th	Amphibians	various	No	27 007	2 970.00	9
7th	Crocodiles	various	No	1 148	1 331.00	9
8th	Beeswax	*Apis species*	kg	243 000	799.90	11
9th	Honey	*Apis species*	kg	243 000	709.14	11
10	Bark	*Cinchona spp*	kg	84.38	530.00	3
11th	Bark	*Acacia mimosa*	kg	15.72	11.48	4
All other plant products					11 636.30	
All other animal products					9 775 749.00	
TOTAL					**9 849 590.22**	

	2005
Name of local currency	TAS

12.4 Comments to Table T12

Variable / category	Comments related to data, definitions, etc.
10 most important products	Ranking organized in order of economic value
Other plant products	
Other animal products	
Value by product	
Total value	Based on presentation from Government Budget Speeches. Note: The value is reporting in 1000 TAS.

Other general comments to the table
A lot of leakages exist due to illegal activities and free access

13 Table T13 – Employment

13.1 FRA 2010 Categories and definitions

Category	Definition
Full-time equivalents (FTE)	A measurement equal to one person working full-time during a specified reference period.
Employment	Includes all persons in paid employment or self-employment.
Paid employment	Persons who during a specified reference period performed some work for wage or salary in cash or in kind.
Self-employment	Persons who during a specified reference period performed some work for profit or family gain in cash or in kind (e.g. employers, own-account workers, members of producers' cooperatives, contributing family workers).

13.2 National data

13.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Contribution of the forest sector to national economies"(FAO, 2008)	H	Employment in forestry, logging and related services	1990 - 2006	FAO estimates

13.3 Data for Table T13

FRA 2010 Category	Employment (1000 years FTE)		
	1990	2000	2005
Employment in primary production of goods	4	4	3
...of which paid employment	4	4	3
...of which self-employment	n/a	n/a	n/a
Employment in management of protected areas	n/a	n/a	n/a

13.4 Comments to Table T13

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Employment in primary production of goods	It is believed that the data is, in fact, limited to the paid employment. Primary production is undertaken by the Private sector, it very difficult to get information on employment under the sector.	
Paid employment / self-employment		

Employment in management of protected areas	Information is not documented	

Other general comments to the table

14 Table T14 – Policy and legal framework

14.1 FRA 2010 Categories and definitions

Term	Definition
Forest policy	A set of orientations and principles of actions adopted by public authorities in harmony with national socio-economic and environmental policies in a given country to guide future decisions in relation to the management, use and conservation of forest and tree resources for the benefit of society.
Forest policy statement	A document that describes the objectives, priorities and means for implementation of the forest policy.
National forest programme (nfp)	A generic expression that refers to a wide range of approaches towards forest policy formulation, planning and implementation at national and sub-national levels. The national forest programme provides a framework and guidance for country-driven forest sector development with participation of all stakeholders and in consistence with policies of other sectors and international policies.
Law (Act or Code) on forest	A set of rules enacted by the legislative authority of a country regulating the access, management, conservation and use of forest resources.

14.2 Data for Table T14

Indicate the existence of the following (2008)			
Forest policy statement with national scope		X	Yes
			No
If Yes above, provide:	Year of endorsement	1998	
	Reference to document	UNITED REPUBLIC OF TANZANIA. THE NATIONAL FOREST POLICY	
National forest programme (nfp)		X	Yes
			No
If Yes above, provide:	Name of nfp in country	TANZANIA NATIONAL FOREST PROGRAMME 2001-2010	
	Starting year		
	Current status		In formulation
		X	In implementation
			Under revision
			Process temporarily suspended
	Reference to document or web site	www.nfp.co.tz	
Law (Act or Code) on forest with national scope		X	Yes, specific forest law exists
			Yes, but rules on forests are incorporated in other (broader) legislation
			No, forest issues are not regulated by national legislation
If Yes above, provide:	Year of enactment	2002	
	Year of latest amendment	2002	
	Reference to document	FOREST ACT 2002	

In case the responsibility for forest policy- and/or forest law-making is decentralized, please indicate the existence of the following and explain in the comments below the table how the responsibility for forest policy- and law-making is organized in your country.		
Sub-national forest policy statements		Yes
	X	No
If Yes above, indicate the number of regions/states/provinces with forest policy statements		
Sub-national Laws (Acts or Codes) on forest		Yes
	X	No
If Yes above, indicate the number of regions/states/provinces with Laws on forests		

14.3 Comments to Table T14

Variable / category	Comments related to data, definitions, etc.
Forest policy statement with national scope	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. The National Forest Policy is being reviewed.
National forest programme (nfp)	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. More information on the Tanzania National Forest Programme (NFP) can be found at the website www.nfp.co.tz The National Forest Programme will be reviewed in 2010.

Law (Act or Code) on forest with national scope	
Sub-national forest policy statements	
Sub-national Laws (Acts or Codes) on forest	

Other general comments to the table

15 Table T15 – Institutional framework

15.1 FRA 2010 Categories and definitions

Term	Definition
Minister responsible for forest policy-making	Minister holding the main responsibility for forest issues and the formulation of the forest policy.
Head of Forestry	The Head of Forestry is the Government Officer responsible for implementing the mandate of the public administration related to forests.
Level of subordination	Number of administrative levels between the Head of Forestry and the Minister.
University degree	Qualification provided by University after a minimum of 3 years of post secondary education.

15.2 Data for Table T15

Table 15a – Institutions

FRA 2010 Category	2008	
Minister responsible for forest policy formulation : please provide full title	Ministry of Natural Resources and Tourism	
Level of subordination of Head of Forestry within the Ministry		1st level subordination to Minister
		2nd level subordination to Minister
	X	3rd level subordination to Minister
		4th or lower level subordination to Minister
Other public forest agencies at national level	Forest and Beekeeping Division	
Institution(s) responsible for forest law enforcement	Forest and Beekeeping Division	

Table 15b – Human resources

FRA 2010 Category	Human resources within public forest institutions					
	2000		2005		2008	
	Number	%Female	Number	%Female	Number	%Female
Total staff	1 653	5	1 653	10	1 653	15
...of which with university degree or equivalent	161	2	161	4	161	6

Source: Forest Policy , Legal and Institutional Framework Information, 2007. Forest and Beekeeping Division (FBD), Tanzania.

Notes:

1. Includes human resources within public forest institutions at sub-national level
2. Excludes people employed in State-owned enterprises, education and research, as well as temporary / seasonal workers.
3. HIV/AIDS pandemic is a serious threat to human resource under the Forestry Sector

15.3 Comments to Table T15

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Minister responsible for forest policy formulation		
Level of subordination of Head of Forestry within the Ministry		
Other public forest agencies at national level		
Institution(s) responsible for forest law enforcement		
Human resources within public forest institutions	Includes human resources within public forest institutions at sub-national level Excludes people employed in State-owned enterprises, education and research, as well as temporary / seasonal workers.	HIV/AIDS pandemic is a serious threat to human resource under the Forestry Sector

Other general comments to the table

16 Table T16 – Education and research

16.1 FRA 2010 Categories and definitions

Term	Definition
Forest-related education	Post-secondary education programme with focus on forests and related subjects.
Doctor's degree (PhD)	University (or equivalent) education with a total duration of about 8 years.
Master's degree (MSc) or equivalent	University (or equivalent) education with a total duration of about five years.
Bachelor's degree (BSc) or equivalent	University (or equivalent) education with a duration of about three years.
Technician certificate or diploma	Qualification issued from a technical education institution consisting of 1 to 3 years post secondary education.
Publicly funded forest research centers	Research centers primarily implementing research programmes on forest matters. Funding is mainly public or channelled through public institutions.

16.2 National data

16.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
1.Forest and Beekeeping Sector Training Programme	H	Forest Trainees	2008	
2. Ministry of Natural Resources and Tourism. 2001. The Tanzania National Forest Programme 2001-2010, Government Printers.	H	Education & Research	2001	

16.3 Data for Table T16

FRA 2010 Category	Graduation [1] of students in forest-related education					
	2000		2005		2008	
	Number	% Female	Number	% Female	Number	% Female
Master's degree (MSc) or equivalent	n/a	n/a	n/a	n/a	115	20
Bachelor's degree (BSc) or equivalent	n/a	n/a	n/a	n/a	215	40
Forest technician certificate / diploma	n/a	n/a	n/a	n/a	105	5

FRA 2010 Category	Professionals working in publicly funded forest research centres [2]					
	2000		2005		2008	
	Number	% Female	Number	% Female	Number	% Female
Doctor's degree (PhD)	3	0	3	0	3	0
Master's degree (MSc) or equivalent	45	5	45	5	45	5
Bachelor's degree (BSc) or equivalent	70	10	70	10	70	10

Notes:

1. Graduation refers to the number of students that have successfully completed a Bachelor's or higher degree or achieved a certificate or diploma as forest technician (within and outside the country).
2. Covers degrees in all sciences, not only forestry.

16.4 Comments to Table T16

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Graduation of students in forest-related education		
Professionals working in public forest research centres		

Other general comments to the table

17 Table T17 – Public revenue collection and expenditure

17.1 FRA 2010 Categories and definitions

Category	Definition
Forest revenue	All government revenue collected from the domestic production and trade of forest products and services. For this purpose, forest products include: roundwood; sawnwood; wood-based panels; pulp and paper; and non-wood forest products. As far as possible, this should include revenue collected by all levels of government (i.e. central, regional/provincial and municipal level), but it should exclude the income of publicly owned business entities.
Public expenditure	All government expenditure on forest related activities (further defined below).
Operational expenditure *(sub-category to Public expenditure)*	All government expenditure on public institutions solely engaged in the forest sector. Where the forest administration is part of a larger public agency (e.g. department or ministry), this should only include the forest sector component of the agency's total expenditure. As far as possible, this should also include other institutions (e.g. in research, training and marketing) solely engaged in the forest sector, but it should exclude the expenditure of publicly owned business entities.
Transfer payments *(sub-category to Public expenditure)*	All government expenditure on direct financial incentives paid to non-government and private-sector institutions, enterprises communities or individuals operating in the forest sector to implement forest related activities.
Domestic funding	Public expenditure funded from domestic public financial resources, including: retained forest revenue; forest-related funds; and allocations from the national budget (i.e. from non-forest sector public revenue sources).
External funding	Public expenditure funded from grants and loans from donors, non-governmental organisations, international lending agencies and international organisations, where such funds are channelled through national public institutions.

17.2 National data

17.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Support to National Forest Programme Phase II: 2009/2011	H	Revenue data	2009/11	
Ministry of Natural Resources and Tourism. 2001. The Tanzania National Forest Programme 2001-2010, Government Printers.	H	Financing of the Forest Sector	2001	
Ministry of Natural Resources and Tourism. Budget Speech 2007/08., Government Printers.	H	Growing stock	1998	
Ministry of Natural Resources and Tourism. 2000. Study on Financing of the Forest Sector	H	Financing of the Forest Sector	1998	

17.3 Data for Table T17

Table 17a - Forest revenues

FRA 2010 Categories	Revenues (1000 US$)	
	2000	2005
Forest revenue	5 987.24	11 637.30

Table 17b - Public expenditure in forest sector by funding source

FRA 2010 Categories	Domestic funding (1000 local currency)		External funding (1000 local currency)		Total (1000 local currency)	
	2000	2005	2000	2005	2000	2005
Operational expenditure	2 472 296	7 325 729.5	20 000 000	30 000 000	22 472 296	37 325 729.5
Transfer payments	7 000 000	13 000 000	13 000 000	37 000 000	20 000 000	50 000 000
Total public expenditure	9 472 296	20 325 729.5	33 000 000	67 000 000	42 472 296	87 325 729.5

If transfer payments are made for forest management and conservation, indicate for what specific objective(s) - Please tick all that apply.		
	X	Reforestation
	X	Afforestation
	X	Forest inventory and/or planning
	X	Conservation of forest biodiversity
	X	Protection of soil and water
	X	Forest stand improvement
	X	Establishment or maintenance of protected areas
	X	Other, specify below (Policy & Legislation reviews)

17.4 Comments to Table T17

Variable / category	Comments related to data, definitions, etc.	Comments on the reported trend
Forest revenue	Note: The value is reported in thousand US$. Revenue leakages due to various reasons are not taken into accounts. This amount corresponds to the value of exported industrial roundwood from government-owned land (see T11)	
Operational expenditure	Note: The value is reporting in 1000 TAS. Personnel Emolument provided by the Government (for Salary & Statutory benefits is been included under this category).	

Transfer payments	It is very complex to derive real estimates under external finacing since the funding had been provided at various time range 1995-2005 and in different currencies i.e US$; NOK, DM etc to cover various time between 1995-2005 and beyond. Note: The value is reporting in 1000 TAS	

Other general comments to the table
The Forest Resource is under two Parallel administrations i.e. Central Government and Local Governments, each line has autonomy over human resource, operational expenditure and transfer of payments. The combined annual value of forest goods and services by 2008 is estimated at US$ 2,213,981,070. It is further estimated that the sector contributes above 10% of the total GDP (National Forest and Beekeeping Programme 2009/2011)