Forest Governance and Timber Trade Flows Within, to and from Eastern and Southern African Countries

Zambia Study

February 2014

Table of contents

List of Tables

List of Figures

Abbreviations

AAC - Annual Allowable Cut

AMSL – Above Mean Sea Level

ANON – Anonymous

CBD – Convention on Biological Diversity

CBNRM – Community based natural resources management

CITES – Convention on the international trade in endangered species of wild fauna and flora

COMESA – Common Market for Eastern and Southern Africa

DBH – Diameter at Breast Height (tree measurement)

EU – European Union

FAO – Food and Agriculture Organisation (of the UN)

FD – Forestry Department (aka Directorate of Forestry)

FLEGT - Forest Law Enforcement Governance and Trade

GRZ – Government of the Republic of Zambia

ILUA – Integrated Land Use Assessment (2006 study providing most recent forest inventory data)

MLNREP – Ministry of Lands, Natural Resources and Environmental Protection

MRV - Monitoring, Reporting and Verification

MTENR – Ministry of Tourism Environment and Natural Resources (previous ministry host of FD till 2012)

PERS COMM – Personal Communications

REDD – Reducing Emissions from Deforestation and Forest Degradation

RWE – round wood equivalent

SADC – Southern African Development Community

SNDP – Sixth National Development Plan

ZAFFICO – Zambia Forestry and Forest Industries Corporation Limited

UNCCD - United Nations Convention to Combat Desertification

UNFCCC - United Nations Framework Convention on Climate Change

Background

This study of timber flows within, to and from Zambia has been prepared as a part of a wider study that covered nine countries in Eastern and Southern Africa, with an identical objective in each to these countries that consisted of two main parts:

1. To provide a baseline of the wood based trade flow information
2. To provide an overview and analysis of the regulatory framework for timber production, processing and trade.

The study is quite timely considering that widespread illegal logging in recent years has had a devastating effect on the valuable forest resources in the countries in this part of Africa, which has had not only environmental consequences but also economic and social ones. The response by the European Commission has been the introduction of FLEGT, the Forest Law Enforcement, Governance and Trade Action Plan, to provide a set of measures to prevent illegally harvested timber from reaching the European markets. With the European Union Timber Regulation, EUTR, the placing of illegal timber on the European market has been prohibited starting from 3 March 2013.

Against this background, it becomes important to understand the dynamics of the timber trade flows not only in Zambia but also in Eastern and Southern Africa, including the volume and value of the trade, within, to and from these countries, and the potential interest that individual countries might have in improving forest management and entering into VPAs. This study has therefore identified many burning issues that need to be addressed to prevent illegal logging and trade in illegally harvested products, in Zambia as well as in the other countries of the study.

The study has produced nine comprehensive country reports, each of 50-60 pages, covering Burundi, Kenya, Madagascar, Mozambique, Rwanda, South Africa, Tanzania, Uganda and Zambia, in addition to one Summary Report. This particular country report, on Zambia, was prepared by Catherine Mackenzie.

Executive Summary

Zambia has a substantial forest cover, being forested at about 67%. The miombo woodlands are extensive, although having suffered from considerable deforestation due to charcoal production and clearing for farming. Forest plantations were started in the early 1960s, consisting of pines and eucalyptus, to augment timber supplies from natural forests, particularly mining timber.

Although Zambia has the largest area of forest of the countries of this study (49 million hectares) the nature of the forest (and cost of transportation) is such that export-oriented logging – to destinations outside sub-Saharan Africa - is unlikely to be commercially viable, except in relation to some particularly valuable species.

Zambia's imports of wood-based products are dominated by coniferous sawn timber from Malawi, and paper products from South Africa, both of which have increased dramatically in volume and value over the last decade. Wood-based furniture, mainly from China and South Africa and logs almost all in the form of treated coniferous wood, probably poles, from South Africa and Zimbabwe, are also important.

Democratic Republic of Congo and, to a lesser extent, South Africa and increasingly China are the destinations for most of the timber (predominantly sawn wood) that Zambia exports. Zambia's trade in timber sector products has, in terms of RWE volume, increased 4-5 fold over the last decade. Overall, imports have tended to exceed exports.

An important issue regarding the legal framework is that, with donor support, a National Forestry Policy was adopted in 1998 and new Forests Act was drafted and actually passed in 1999 (Forests Act No.7 1999). This 1999 Act was set to transform the sector through the creation of an autonomous Zambia Forestry Commission to replace the Forestry Department and transfer management rights to participating communities. However, the required "commencement order" from the Minister has never been passed so the law is considered non-operational. This is despite considerable donor funding and technical assistance. After over a decade in limbo, a new Forest Act is now in the approval process, set to re-institute the old Forestry Department.

The Forestry Department, today under the Ministry of Lands, Natural Resources and Environmental Protection, is the government agency charged with administering the national forest estate. The statutory instrument currently governing the forest sector is the Forest Act of 1973. It vests the ownership of all trees and forest resources in the President, establishes the forest administration to administer the forest estate, establishes the status and governance of national and local forests and protected trees and sets out the main rules for the licensing, harvest and removal of major forest produce (timber and charcoal), and supervision by the forest administration.

The Forestry Department has received a lot of donor funding and assistance over the years, especially from Finland that has been providing support for over 30 years. Results have been disappointing with many basic problems identified 20 years ago still persisting today.

The system of licences, permits and taxes which governs the production, transport and export of timber in Zambia is adequate to ensure timber legality, but is not well-enforced. For instance, forest officers are supposed to be present in logging areas to mark trees for harvesting. However, the forest officers lack transport and can hardly go to the forest.

Transparency in the sector is much limited, as the Forest Department is the only government department that does not submit data to the Central Statistics Office.

The two forests in Zambia that were FSC certified in 1998 and 2003 have now been suspended because of problems with pit-sawyers.

There are no recent comprehensive studies of fuelwood production and use in Zambia. An increase in fuelwood consumption can be expected to follow the population increase and be linked to higher costs of kerosene and electricity. Charcoal is the preferred fuel for use in towns and its use is no doubt increasing with urbanisation. For charcoal production, a permit is required from the District Forestry Office in the area of production upon payment of a production licence fee. Little firewood is traded outside districts.

The export of timber is controlled under the Timber Export Regulations of 1997. The regulations state that the only forest products that may be exported are sawn timber, railway sleepers, poles from planted species, finished timber products and plantation trees. They further explicitly ban the export of charcoal, un-finished timber products from natural forests and sawn logs of any species. Roughly sawn timber cannot be exported.

Data available on forest utilization has been found to be incomplete, with figures missing for many years and no clear distinction between indigenous timber and plantation timber. Comparing figures for actual production with harvesting licenses revealed large gaps. FAO has estimated a production figure of 500,000 m3/ year, which is much higher than locally available figures.

Processing of forest products is done by sawmills, wood based panel manufacturing, pole treatment and carpentry. There are over 100 operators of bush type of small scale sawmills and about 10 medium to large sawmills operating in Zambia. Most of the small scale sawmills use plantation roundwood, except pit-sawyers who process mainly hardwood. The bushmills use simple and light mobile equipment designed for smaller sized logs.

Forest degradation is ongoing and continuing in Zambia, the exploitation of valuable hardwoods is on the increase and forest governance continues to be weak. There is an absence of forest management planning at all levels and participatory forest management is not supported by legislation. Most forests are managed either without any management plans or under out-dated plans. The intention of reforming the forest sector through the proposed 1999 Forest Act has failed, forcing the Forest Department to continue operating under the outdated 1973 policy and legal frameworks.

The key problem of forest governance need to be addressed seriously and head on, politically and not just masked by some technical interventions. At the same time, the sustainability issue requires urgent attention, through management planning and policy revisions.

1. Introduction

This paper presents a profile of the forestry sector in Zambia focusing on its participation in regional and international trade and from the perspective of the three recognised pillars of forest governance: the legislative and regulatory framework, administrative, planning and decision making processes and law enforcement, drawing from, but not strictly following, the detailed framework of FAO/PROFOR (2011). It is part of a nine-country scoping study in Eastern and Southern Africa for the European Union (EU) Forest Law Enforcement Governance and Trade (FLEGT) programme.

Following a brief introduction to Zambia and the role of the forest sector in the national economy, the paper examines the forest estate, the administration and the regulatory framework, and then more concrete and outcome oriented topics, relating to the fuelwood market, forest utilisation and forest industries, and importantly, Zambia's trade in forest products. An attempt was made to present data from 2000 – present, in order to identify and analyse trends. The report ends with a discussion of key trends and issues, and evidence for the nature and extent of illegal logging, before drawing conclusions and recommendations relating to the Forest Law Enforcement Governance and Trade (FLEGT) Programme of the European Union (EU). This is the standardised reporting structure followed by all nine country reports in this study.

The report is the output of a 12-day assignment, focused on a 10-day field visit to Zambia in July 2012 and a review of the available literature. Because it took most of the field visit to obtain any quantitative data, it was not possible to discuss many findings with Forest Department leadership.

1.1 General background

Zambia, with a total surface area of 75.9 million ha, occupies a central position in the Zambezian Region, and is landlocked. Most of the country comprises a high plateau lying between 900 and 1,400 m above mean sea level (amsl). In the northeast, the Muchinga Mountains rise to over 1,800 m amsl. In the major river valleys: the middle Zambezi in the south, and two of its tributaries, the Luangwa in east and north-east, the Kafue in the west, areas as low 400 m amsl are encountered.

The climate is classified, according to the Koppen system, as humid subtropical or tropical wet and dry, with small patches of semi-arid steppe climate in the south-west. Rainfall varies from 500-1700 mm. There are two main seasons, the rainy season (November to April) corresponding to summer, and the dry season (May to October/November), corresponding to winter. The modifying influence of altitude produces pleasant subtropical weather rather than tropical conditions for most of the year.

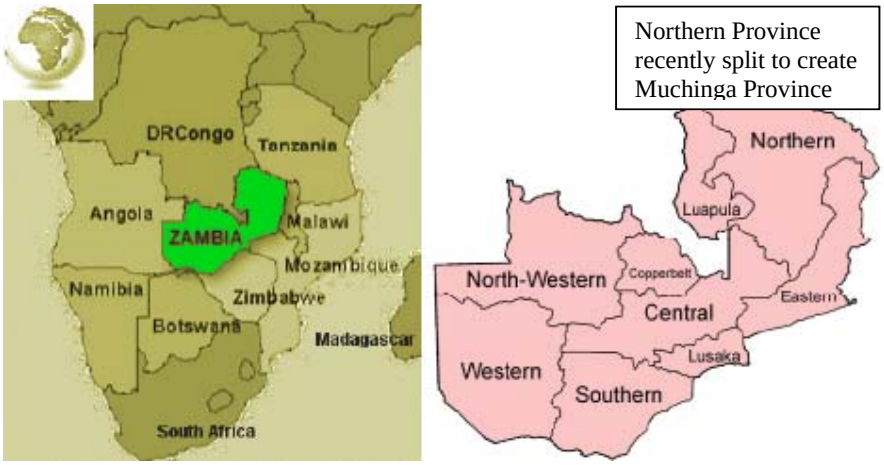
Zambia is one of Sub-Saharan Africa's most highly urbanized countries, with nearly half the estimated population of 14.3 million[1] concentrated in a few urban zones located along the major transportation corridors. Rural areas, however, are under-populated, and the average population density is low at 17.2/km^2.

In the late 1960s, soon after independence, Zambia was one of the most prosperous countries in Sub-Saharan Africa. However, as a result of decades of mismanagement, AIDS and a high population growth rate (now estimated at 3.03%), per capita annual incomes are currently at about two-thirds of their levels at independence, and most people perceive themselves as poor (WB 2007). Although Zambia has articulated the vision of returning to be "a prosperous middle-income nation by 2030", and has an economy that has been growing at 6-7% per year since 2007 on the back of surge in mineral prices, the poverty rate remains stubbornly high at over 66% nationally, and a staggering 78% in rural areas. Unemployment and under-employment remain serious problems. The benefits of

[1] At the last census (2000) Zambia had a total population of 9.8 million.

growth have been limited to a small segment of the population, and high levels of inequality also persist. In 2011, the Human Development Index (HDI) was low at 0.43, ranking Zambia at 164th out of 187 countries. The poorest areas are Northern, Luapula, Northwestern, and Eastern Provinces while the least poor are Copperbelt, Lusaka, and Southern Provinces (see Figure 1).

Zambia is a presidential representative democratic republic, with a multi-party political system, whereby the President of Zambia is both head of state and head of government. There are 10 provinces and 72 districts, with their own tiers of government.



Source: UN-REDD (2010)

Figure 1 Map of Location of Zambia within Africa and the Provinces of Zambia

1.2 Contribution of the Forest Sector to the National Economy

Zambia's economy is based on mining, which accounts for some 10% of GDP. Copper and cobalt account for 64% of all exports. Agriculture, including tobacco, sugar cane, maize and, increasingly, beef, and accounts for 21.4% of GDP and about 5% of exports. Estimates of forestry's contribution to GDP range from 5.2 - 6.3 %, making the forestry sector the highest contributor to GDP in the Agriculture, Forestry and Fishing (Draft Forest Policy 2009). According to the Draft Forest Policy of 2009, the forestry sector's main contribution to the national economy is through employment of an estimated 1.1 million Zambians. Despite this, forestry is not identified as a growth sector in the Sixth National Development Plan (GRZ 2008).

2. The Forest Sector

2.1 Forest Inventory

Since 1932 there have been 18 national or sub-national forest inventories in Zambia. Important amongst them were the district level inventories conducted in the 1950s and 60s, on the basis of which District Forest Management Books were compiled. These inventories have served as reference points for many subsequent inventories, and the Management Plans, while seriously outdated, have never been bettered. Five major inventories have been undertaken since the mid-1990s but none of them actively applied in managing the resource (Mukosha and Siampale 2008).

The latest inventory was in 2006, under the FAO-funded Integrated Land Use Assessment (ILUA) Project. The objectives of ILUA were to build capacity and provide an assessment of forestry, cropping, livestock and environmental land uses, and to promote sustainable land management, through integrated resource management and monitoring.

The project involved multiple GRZ departments[2], under the leadership of the Forestry Department. ILUA was unique in providing a comprehensive national level assessment following a standardised methodology, and for integrating livelihoods and biophysical aspects (Mukosha and Siamplale 2008). ILUA adopted a rather loose definition of "forest" as an area greater than 0.5 ha with trees greater than 5 m in height and canopy cover greater than 10%. "Other wooded land" differed in having canopy cover of 5-10%. The sampling intensity of the forest component[3] was too low to constitute a timber inventory and species volume tables were not available, so while an indicative timber stock assessment was done, no annual allowable cut was established for the forest as a whole or for any of the provinces or species. Usefully, the ILUA report describes the forest state in terms of a wide variety of parameters, including: forest cover, forest type, global agro-ecological and ecological zones (GAEZ and GEZ), land use class, origin of forest, management regime and tenure. The data used in this report are from ILUA, unless otherwise noted.

2.2 Forest cover

Zambia has very substantial forest cover. However, the different forest inventories have produced quite different estimates of this forest cover (Table 1). An exercise in the mid-1980s estimated 61.2 m ha (80% total land area), while the Forest Resource Assessment estimated only 31.2 m ha (41% total land area) and ILUA returned 49.9 m ha (66% total land area). While these estimates may, in part, reflect gradual deforestation, they also reflect different definitions of forest, inventory methodologies and degrees of precision, so it is difficult to use this data to identify and analyse trends.

Table 1 Estimates of total forest cover in Zambia 1980s-2006 (million ha)

Year	Mid- 1980s	1998	2004	2005	2006
Source / Project	**NWECRS**	**ZFAP**	**FSP (EU)**	**FRA (FAO)**	**ILUA**
Estimated forest cover	**61.2**	**59.5**	**33.5**	**31.2**	**49.9**
% of total land cover	80.6	78.4	44.1	41.1	66

Sources: Mushoka and Siampale (2008) NWERS-National wood Energy Consumption and Resource Survey; ZFAP-Zambia Forest Action Programme; FSP – Forest Support Programme; FRA – Forest Resource Assessment; ILUA- Integrated Land Use Assessment

[2] Collaborating institutions included Ministry of Agriculture, Food and Fisheries, Ministry of Lands, Central Statistics Office, Zambia Wildlife Authority, Univeristy of Zambia, Copperbelt University, Zambia Forestry College and Local Authorities.

[3] The forestry inventory component was based on a standard national forest resource assessment (NFRA) approach developed by FAO, and consisted in 221 clusters of four plots of 5 ha each (20x250m), on a totally systematic and unstratified 50 x 50 km grid across the country. This gave a total of surveyed area of 433 ha, and a sampling intensity of 0.000006%.

2.3 Natural Forests

2.3.1 Forest Types

There are five main forest types in Zambia: Central Zambian Miombo, Southern Miombo, Zambian and Mopane Woodlands, *Cryptosepalum* Dry Forests and the Zambian *Baikiaea* (Rhodesian Teak) Woodlands. In addition there are small areas of Itigi Sumbu thicket and southern rift montane forest/grassland mosaic. Their distribution, shown in Figure 2, broadly follows altitude, rainfall and soils.

Table 2 Forest class and forest types and % land cover

Forest Class	Area Cover ('000 ha)	% forest cover	% total land cover	Forest types
Evergreen Forest	819	1.6	1.1	Cryptosepalum Dry Forest
Semi-evergreen Forest	34,145	68.3	45.4	Central Zambian Miombo Woodland ***(77%)*** Southern Miombo ***(23%)***
Deciduous Forest	14,865	29.7	19.8	Zambian and Mopane Woodlands ***(75%)*** Baikiaea (Rhodesian Teak) Woodland ***(25%)***
Other Natural forest	139	0.3	0.2	Riparian Forest, Southern Rift Montane forest-grassland, Itigi-Sumbu thicket
	49,968	100	66.4	TOTAL

Source: ILUA (2008); bracketed percentage *figures in bold italics,* under Forest Types, are approximations derived from http://en.wikipedia.org/wiki/Ecoregions_of_Zambia

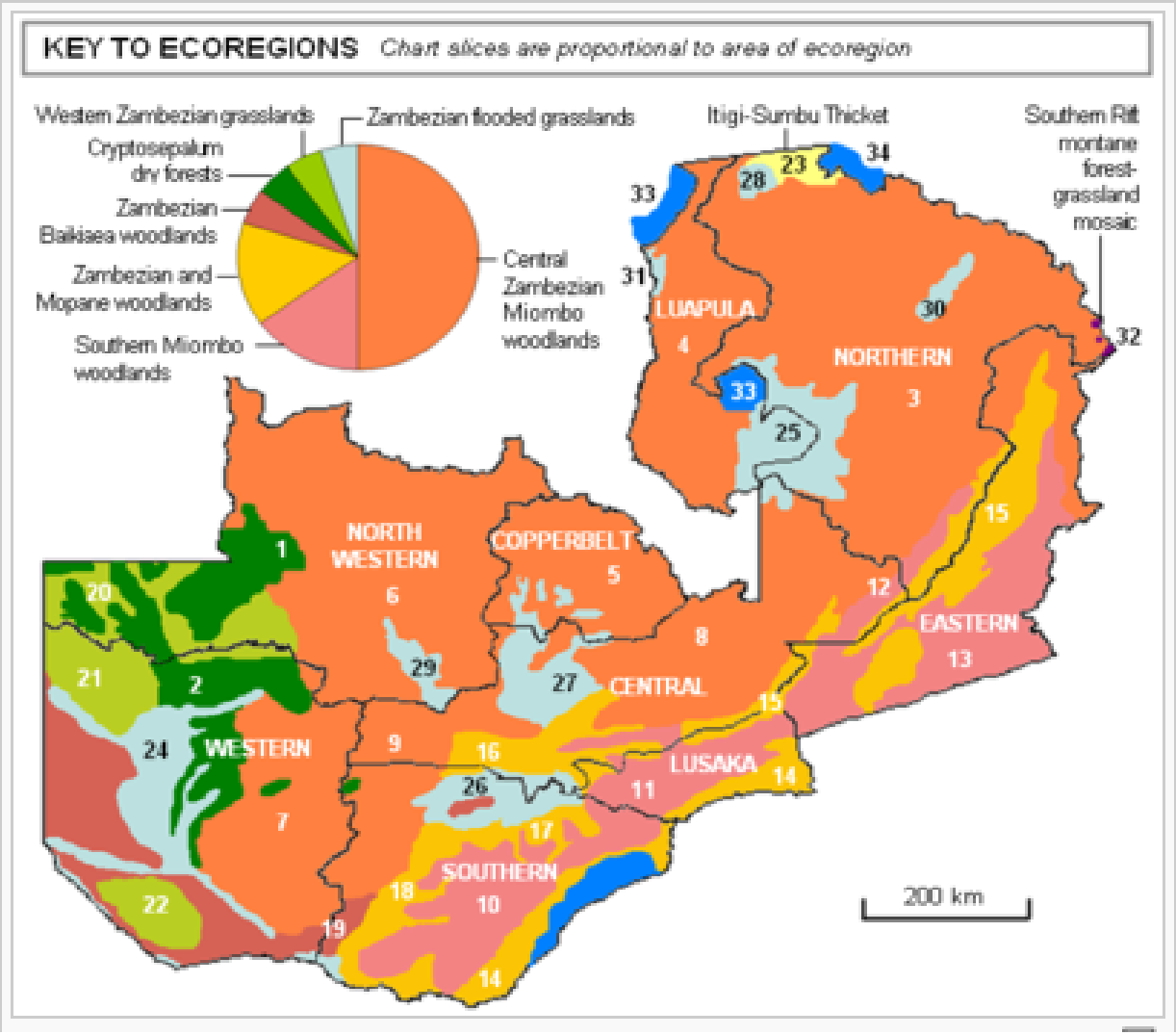


Figure 2 Main Forest Types and Eco-regions of Zambia

Source: http://en.wikipedia.org/wiki/Ecoregions_of_Zambia

The most extensive forest type, covering about 50% of the country is the Central Zambian Miombo Woodland, characterised by trees of the leguminous genera *Brachystegia, Isoberlina and Julbernardia*. These woodlands predominate in the wettest part of the country, across the northern part of both 'lobes' of the country, and where the water table is high, may form closed forests. The important commercial species, *Guibourtia coleosperma, Pterocarpus angolensis* and *Afzelia quanzensis* are found here (see below). They have suffered extensive deforestation due to charcoal production and clearing for farming.

The Southern Miombo Forests constitute about 15% of forest cover. Trees are more scattered and generally smaller, and the relative proportion of woody shrubs is greater than in the Central Zambian Miombo Forest.

The Cryptosepalum forests are quite dense evergreen forest of medium height found in west-central Zambia on sandy soils, and make up the largest evergreen forest in Africa outside of the equatorial zone. The dominant species, *Cryptosepalum exfoliatum*, is also in the legume family, but is not an important timber species.

The Zambian and Mopane forests, located in the driest areas of the Southern and Eastern Provinces are dominated by Mopane *Colophospermum mopane*. This medium-sized tree was mostly used for poles and as firewood, but its heavy dark wood has recently attracted the interest of the Chinese and is now highly sought-after.

Kalahari or Rhodesian teak forests, located in the far south-west of Western Province, were the first forests in Zambia to be exploited. The highly prized *Baikiaea plurijuga* used to be used for railway sleepers, but now is sought for furniture, and small handicraft items. These forests are deciduous.

2.3.2 Main commercial species

The FD currently recognises 19 commercial tree species in Zambia. These are shown in Table 3, along with their main uses, and the ILUA data on their abundance and commercial volumes. This data suggests that none of the commercial species is abundant, but the data are averaged across the whole country, and do not reflect the distribution of the forests or the species within the forests, which tend to produce clusters of species at commercial densities in certain places.

Currently, the main high value species are rosewood, teak, and mukwa, which are exported to China and South Africa, and also consumed in small amounts on the domestic market. Some *Swartzia madagascarensis*, the timber most in demand by the Chinese in Mozambique, was also observed in Lusaka being prepared for export, although the species does not appear at all in the ILUA study.

Of the forests' estimated total growing stock of 2.9 billion m^3, the total volume of commercial timber has been estimated at 340.1 million m3 (or 12%). The distribution of commercial volume by forest type and by province is provided in Table 4, showing that of the forests, the semi-evergreen (Miombo) forests have 75% of the commercial volume, and of the provinces, Northwestern has 33% and Western 18% of the commercial volume respectively (Mukosha and Siampale, 2009).

Table 3 Zambia's 19 main commercial timber species, their uses, abundances and volumes

Tree Species	Uses * exported	Stems/ha		Volume/ha (m3)	
		>30cm	all >7cm	>30cm	all >7cm
Brachystegia spiciformis	Construction, flooring, sleepers	1.9	11.3	2.8	4.4
Isoberlina angolensis		0.9	8.3	1.3	2.4
Pterocarpus angolensis	*	0.6	6.9	0.7	1.3
Erythrophleum africanum		0.5	4.3	0.7	1.3
Brachystegia longifolia		0.3	3.74	0.4	0.8
Pericopsis angolensis	*	0.4	3.8	0.4	0.7
Julbernardia globiflora		0.3	5.1	0.3	0.7
Guibourtia coleosperma	*	0.2	1.5	0.3	0.4
Brachystegia floribunda		0.1	1	0.2	0.3
Albizia adianthifolia	Light construction, parquet	0.0	0.2	0.1	0.1
Albizia antunesiana	Heavy construction, furniture, carving	0.1	1.1	0.0	0.1
Faurea saligna	Veneer, turnery	0.0	1	0.0	0.1
Dalbergia nitidula		0.0	0.8	0.0	0.1
Baikiaea plurijuga	*	0.0	.2	0.0	0.0
Entandophragma caudatum		0.0	0.0	0.0	0.0
Khaya nyasica	*	0.0	0.0	0.0	0.0
Afzelia quanzensis	*	0.0	0.0	0.0	0.0
Entandophragma delevoyi		0.0	0.1	0.0	0.0
Entandophragma excelsum		0.0	0.0	0.0	0.0
				7.06	12.78
Colophospermum mopane	* Furniture, carving, turnery	1.2	12.0	n/a	n/a
Burkea africana	* Furniture, carving, turnery	0.2	2.03	n/a	n/a

Source: ILUA (Mushoka and Siampale 2008).

Table 4 Commercial volume (m^3/ha) and total commercial volume (million m^3) by forest type and province

	Evergreen		Semi-evergreen		Deciduous		Other Natural Forest		Total		
	m^3/ha	vol	m^3/ha	vol	m^3/ha	vol	m^3/ha	vol	m^3/ha	vol	%
Central	0.0	0.0	5.9	44.5	4.5	1.5	0.0	0.0	5.8	46.0	13.5%
Copperbelt	0.0	0.0	13.7	21.6	10.0	0.3	0.0	0.0	13.6	21.9	6.4%
Eastern	0.0	0.0	4.4	9.1	6.1	18.7	0.0	0.0	5.4	27.8	8.2%
Luapula	0.0	0.0	4.9	16.9	0.0	0.0	0.0	0.0	4.9	16.9	5.0%
Lusaka	0.0	0.0	4.0	5.2	0.0	0.0	0.0	0.0	3.1	5.2	1.5%
North Western	17.1	9.5	10.9	99.9	9.6	2.9	23.5	1.2	11.3	113.5	33.4%
Northern	0.7	0.1	4.9	21.6	5.2	14.2	0.0	0.0	5.0	35.8	10.5%
Southern	3.9	0.7	5.2	2.5	2.5	10.1	0.0	0.0	2.8	13.3	3.9%
Western	0.0	0.0	8.4	34.8	6.1	25.0	0.0	0.0	7.2	59.8	17.6%
TOTAL	**12.5**	**10.2**	**7.5**	**256.0**	**4.9**	**72.6**	**8.8**	**1.2**	**6.8**	**340.1**	
%		**3.0%**		**75.3%**		**21.3%**		**0.4%**			**100.0%**

Source: ILUA (Mushoka and Siampale 2008)

2.3.3 Land and Forest Tenure

Land Tenure

Forest policies over the years have advocated increased private sector participation in the plantation sector it is important to understand something of the land tenure situation in Zambia. However, land tenure in Zambia (as elsewhere) is complex and contentious, and this account can only touch on the issues.

At independence Zambia inherited four categories of land: State land and freehold land: 6.3 %; reserves: 36 %; trust land (Customary land): 57.7 %. With the passage of the Land (Conversion of Titles) Act, 1975, freehold land became converted to statutory leasehold land. Under the Land Act of 1995, all land is vested in the President, who holds the land 'in perpetuity for and on behalf of the people of Zambia.' Land is classified as either state land or customary land, categories which are in turn governed by leasehold and customary tenure, respectively. Estimates of the proportion of land under customary tenure vary from 94% (1978) to 37% by the Committee on Agriculture and Lands (2009), while ILUA reports 60% of all lands as under customary tenure (See Table 4).

Colonial-era legislation placed restrictions on the conversion of Customary land to Crown land, but controversially, the Land Act of 1995 enables Customary land to be permanently converted to leasehold tenure and for non-Zambians to acquire land – thereby opening it up to investors, provided this is deemed to be in the national interest. The Land Act also gives the President far-reaching powers to lease land to anyone, Zambian or foreigner, and must give permission for any leasehold over 250 ha. Furthermore, once a lease has expired, or if the lessee fails to pay, the land title reverts to the State. Given the difficulty of accessing state land and large areas under customary tenure, most large-scale investments target customary areas (Brown, 2005). In the processes defined under the Land Act and National Environmental Management Act (NEMA), consultations must be held and the consent of the customary authority acquired. In turn, a chief must consult his people.

Compulsory purchase is possible, but compensation must be paid. The District Council must issue a recommendation to the Land Commissioner or, in the case of requests for more than 1000 ha, to the President, for approval. Disputes over land alienation can be taken to the Land Tribunal and the High Court. There are many allegations of corruption in land allocation, and complaints that foreign capitalists are being given access to land and depriving poor Zambians of their rights[4].

Customary land tenure law varies considerably across the country and occasionally conflicts with forest regulations. Various areas of the country have customary laws regarding access to forest land and use of non-timber forest products. Generally, customary land tenure only gives rights to the subsistence use of forest resources on that land. Any other exploitation requires a licence.

Forest and Tree Tenure

Paragraph 3 of the Forests Act of 1973 states

"*For the avoidance of doubt, it is hereby declared that the ownership of all trees standing on and all forest produce derived from the State Lands, Reserves, Trust Lands (Customary Lands), National Forests and Local Forests is vested in the President on behalf of the Republic until lawfully transferred or assigned under this Act or any other written law*."

Consequently, forests are administered by either the traditional chiefs or the Director of Forestry on behalf of the President.

Traditional land outside of protected areas (forest reserves, game management areas, national parks and bird sanctuaries) are referred to as "open areas".

[4] http://www.statehouse.gov.zm/index.php/component/content/article/48-featured-items/4139-sort-out-corruption-in-land-allocation-president-sata

According to ILUA, 61% of the forests are under customary ownership, 25% are owned by the State and 1% by private companies and 11 % by private individuals. Table 5 provides a detailed breakdown of the ownership of all major land uses.

Table 5 Ownership of Forests and Other Lands ('000 ha)

Major Land Uses	Private Individual	Private Industrial	Other Private	State	Customary	Other/ Unknown	TOTAL
Forests	3,581	659	1,043	11,825	30,751	2,109	49,968
%	7.2	1.3	2.1	23.6	61.6	4.2	100
Other Wooded	816	87	0	487	4,550	115	6,055
Other Land	3,806	326	0	451	9,192	1,997	15,772
Inland Water	72	0	0	1,392	1,368	635	3,467
TOTAL	**8,275**	**1,072**	**1,043**	**14,155**	**45,862**	**4,855**	**75,262**
%	**11.0**	**1.4**	**1.4**	**18.8**	**60.9**	**6.5**	**100**

Source: ILUA (Mushoka and Siampale 2008).

2.3.4 Forest Reserves and Protected Areas

Zambia has a big network of forest reserves, as shown on Figure 3. The Forests Act of 1973 recognises national and local reserves, to supply forest products or provide protection for the whole country, or local areas respectively. The reserves are further categorised as forest reserves (production) or protected forests (no production). In addition there are at least two Botanical Reserves, created in the mid-1970s to protect genetic resources of *Baikiaea plurijuga* (Rhodesian Teak) (DFSC 2001). Production reserves account for 44% of the estate, 30 % is for both production and protection and the remaining 26% is specifically for protection (FD 1998). According to the FD annual report, in 2009, there were 183 National Forests (5,011,403 ha or 6.66 % total land area; average extent 27,400 ha) and 304 Local Forests (2,206,377 ha or 2.93 % total land area; average extent 7300 ha) giving a total reserve area managed by the FD of 7,217,780 ha (9.5% of the total land area)[5]. Table 6 presents the breakdown by province in 2003. Status as national or local does not appear to depend on land ownership; local reserves are found on state land, and many national reserves are on customary land.

The main significance of these status differences is that when applying for licence in a national forest reserve, it is not actually necessary to obtain approval of the traditional authority, as consent for the existence of the reserve has already been obtained.

Many of the reserves have been in existence since colonial times, and most reserves are actually demarcated. However, the vast majority of reserves do not have individual inventories or management plans. During the colonial period, forest management was organised at the District level. There were 42 Districts, and each produced a District Forest Management Book, including inventory data and harvesting plans for each reserve and species. Unfortunately, these have not been updated. Many of the reserves are now seriously encroached upon, and between 2004 and 2007, over 130,000 ha of national and local reserves were degazetted (FD 2005, 2006, 2007). A study on encroachment in 2005 revealed that of the then 489 reserves, 170 were heavily encroached and 109 were partially encroached (FD 2005). Encroachment continues today and the study is currently being updated.

[5] Figures in annual report corrected.

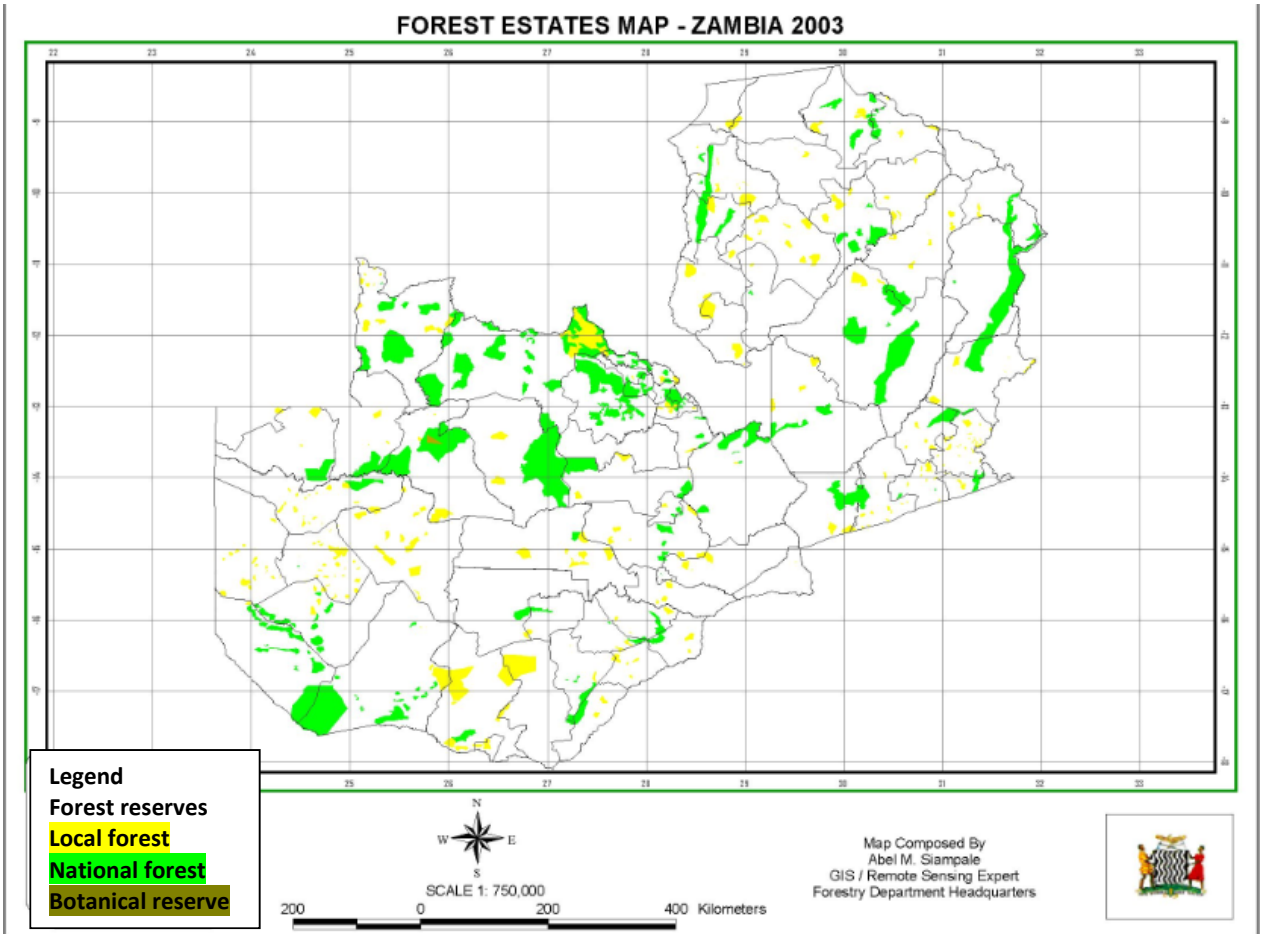


Figure 3 Map of Local and National Forest Reserves of Zambia

Source: Forestry Department (2003)

Table 6 Distribution and Area of Forest Reserves by Province, 2003

Province	Total Land Area (ha)	National Forests		Local Forests		Total Forest Estate		% Total Land Area
		No.	Hectares	No.	Hectares	No.	Hectares	
Central	9,439,448	16	298,043	22	134,334	38	432,377	**4.6**
Copperbelt	3,101,400	34	475,497	12	44,077	46	519,574	**16.7**
Eastern	6,881,451	14	680,584	64	206,747	78	887,331	**12.9**
Luapula	5,056,681	8	212,547	18	200,490	26	413,037	**8.2**
Lusaka	2,189,571	1	136	7	29,142	8	29,278	**1.3**
Northern	14,793,870	23	801,592	47	471,743	70	1,273,335	**8.6**
Northwestern	12,582,000	34	2,045,363	28	465,806	62	2,511,169	**20.0**
Southern	8,525,293	7	211,252	26	433,429	33	644,681	**7.6**
Western	12,638,595	38	466,569	86	346,930	124	813,499	**6.4**
TOTAL	**75,243,400**	**175**	**5,191,583**	**310**	**2,332,698**	**485**	**7,524,281**	**10.0**

Source: FD Annual Report, 2003 - corrected

In addition, Zambia has 19 protected areas, and 36 game management areas, covering 8% and 2% of Zambia's land area respectively and a total of 22 million ha, managed by the Zambia Wildlife Authority

(ZAWA). There are also three wildlife sanctuaries totalling 3,780 ha. Their locations are shown in Figure 4[6]. Comparison of Figure 3 and 4 show that in many cases, protected areas and forest reserves overlap. Logging is permitted in Game Management Areas but not in National Parks. Illegal logging takes place in both. ZAWA is said to turn a blind eye to logging in National Parks (anonymous, personal communication).

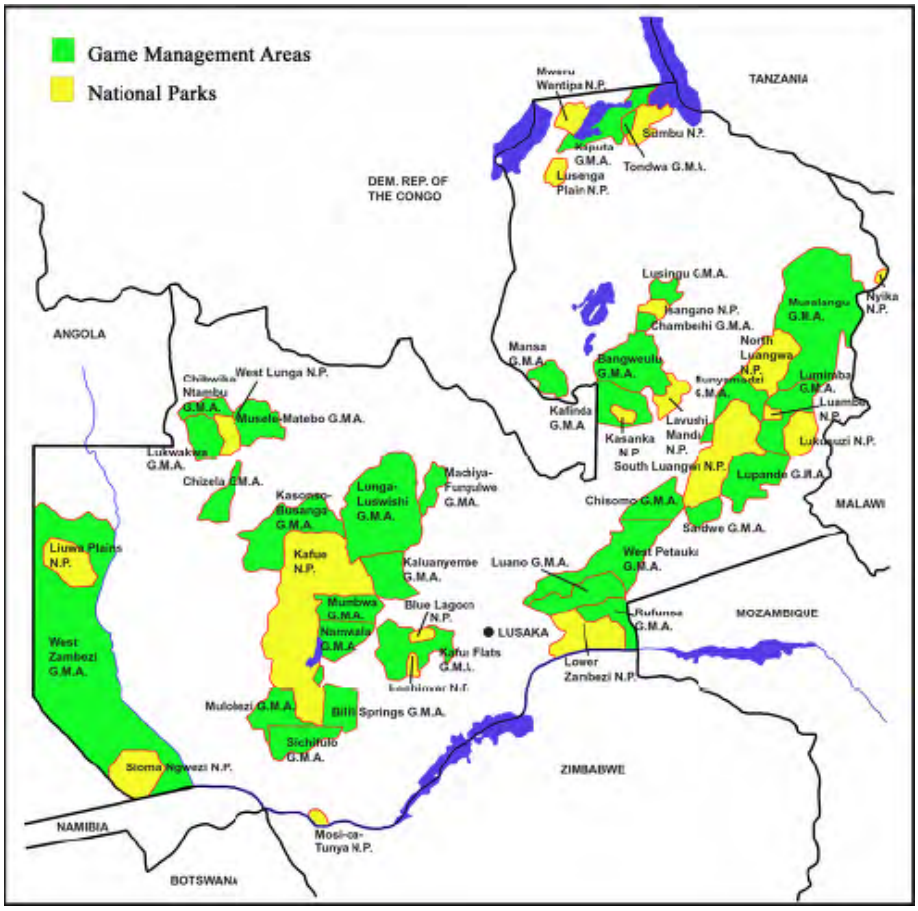


Figure 4 Zambia's National Parks and Game Management Areas

Source: DFSC, 2001

2.4 Plantations

In 1963, the Government of Zambia began investing heavily in the establishment of forest plantations to augment timber supplies from natural forests, particularly mining timber. In 1982 the Industrial Plantations Division of the FD was commercialised and the parastatal Zambia Forest and Forest Industries Corporation (ZAFFICO) formed, with assets including 40,000 ha of pines (primarily *Pinus kesiya*, *Poocarpa*), 10,000 ha of eucalyptus (primarily *E grandis* and *E cleoziana*), and three sawmills at Kafubu, Kalibu and Dola Hill, all in the Copperbelt. The programme was financed through an International Development Association (IDA) credit facility with the objective to establish a further 100,000 ha of plantations by 1990. The processing units were privatised in 2002, but the new plantations were never established and ZAFFICOs planted area remains at 48,000 ha with an additional 2,000 ha leased out to private companies. There are 7,000 ha of local supply plantations elsewhere in the country, managed by the FD, bringing the total plantation area to 57,000 ha.

[6] NB: this map was the most recent available, but now somewhat out of date and inaccurate.

The ZAFFICO plantations are managed on rotations of 15-25 years. They have an estimated standing stock of 12 million m^3 and an annual allowable cut of 500,000 m^3 (Zambia Review 2010, 2011).

The Forestry Department manages nearly 10,000 ha of local supply plantations (also of pines and eucalyptus). Although available data are inconsistent, it appears the provinces with the largest planted areas are Luapulu, Southern and Northern, and there are none in Central, Lusaka, Eastern and Western provinces.

3. CITES

Zambia is signatory to a number of both regional agreements and Multilateral Environmental Agreements (MEAs). At the international level, the ratified MEAs include the conventions on biodiversity (CBD), desertification (UNCCD) and climate change (UNFCCC). CITES came into force in Zambia in 1981. However, Zambia has yet to "domesticate" these agreements by passing national legislation (Zambia-EC 2008). None of Zambia's timber species are CITES listed, but *Baikiaea plurijuga* (Rhodesian teak) is on the IUCN "Red List" (WCMC 2005). Zambia is not a member of the International Timber Trade Agreement of 2006.

Regional agreements include SADC Protocols on forests, wildlife, water, energy, agriculture and others that fall under trade through the Common Market for Eastern and Southern Africa (COMESA).

4. The Forest Administration

4.1 Institutional Arrangements

Under the Forests Act of 1973, the Forest Department is the government agency charged with administering the national forest estate. Its functions include: to carry out and facilitate reforestation of degraded areas; to ensure sustainable management and utilization of forest resources; to facilitate and ensure smooth, efficient and coordinated operations of routine departmental activities; and to improve rural and urban livelihoods by engaging into income generating enterprises such as beekeeping and other non-wood forest products. Routine activities include the development of forest policy and legislation, the protection and management of forest estate, including silvicultural operations, forest survey and demarcation, research, extension and publicity (FD 2009).

The new Patriotic Front Government, which came to office in November 2011, undertook various reorganisations of its ministries. The Forest Department (FD) was taken out of Ministry of Tourism, Environment and Natural Resources (MTENR), where it had been since 2001[7], and put under a Ministry of Mines and Natural Resources. Then in early 2012, that Ministry was reconfigured as Ministry of Mines, Water and Energy Development (MMWED), and in March 2012, the FD was moved into the newly created Ministry of Lands, Natural Resources and Environmental Protection (MLNREP). All this uncertainty and change is said to be having a detrimental impact on planning and performance (although both have been weak for a number of years) and to add to the confusion for 2012, the FD budget has remained under the MMWED.

Some senior FD people are unhappy with the new arrangements and would like "Forestry" to be included in the name of the host Ministry, in recognition of FD's role as a significant revenue earner and as one of the few government departments to have a presence in every district.

As discussed below, the 1999 Forests Law included provisions for the reorganisation of the FD into the Forestry Commission, an autonomous body comprising members from key stakeholder institutions to be appointed by the relevant Minister, but the necessary commencement order from the Minister has never been made. Now, a Draft Forestry Act, currently in the approval process, is set to formally re-institute the Forestry Department.

The Forestry Department is organised both functionally and hierarchically. The main functional divisions are: Administration and Human Development, Forest Management, Forest Research (located in Kitwe, Copperbelt Province) and Forestry Extension. The Forest Management Division deals with the inventory and management planning work. The Forestry Extension Division deals mostly with public information, awareness campaigns and technical advice. In addition, there is the Forestry Training College (also located in Kitwe), and the parastatal Plantations Division, now ZAFFICO (located in Ndola, Copperbelt).

4.2 Budget and Staff

In 2007, the last year for which any data could be found, the FD had an approved budget of ZMK 9.6 billion (USD 1.9 million) of which ZMK 3.4 billion (USD .67 million) were the Departmental Recurrent Charges at headquarters (FD 2009). The proposed national budget for 2013 allocates ZMK 1,865 billion (USD 360 million) to Agriculture, Forestry and Fisheries, but the actual allocation to forestry could not be found.

Funding of the FD from the GRZ is perceived a perennial problem and an injustice, as the FD is a significant contributor of revenue to the national coffers. Forest operations suffer greatly from under-funding. Provincial and district offices particularly lack transport, and many occupy buildings that are in bad repair. Staff appears reasonably well-provisioned with computers, although internet is not widely available, and due to lack of funds many district offices have only intermittent electricity.

[7] From 1991-2001 the FD was part of the Ministry of Environment and Natural Resources.

In 2009, the FD employed 892 people against the total requirement of 1100 established by the FSP[8]. All employees are said to have detailed job descriptions. Each year over 20 staff have training opportunities at study tour, short-course, certificate, diploma, degree and post-graduate levels, at the Forestry College, Copperbelt University and abroad.

The FD is highly centralised with staff posted in Districts and Provinces reporting directly to the HQ. Hierarchy is important. Grades include: chief officers, principal officers, senior officers, and then assistants and technicians. In principle, certain posts should be filled by staff of certain grades, but this is often not the case. The current Chief Conservator (Director of Forestry) has been in post for 17 years.

Prior to 1997, the FD employed forest rangers (in both the Management and Extension Divisions), with at least one per forest reserve. However, the World Bank/IMF structural adjustment programme related to Zambia's status as a Highly Indebted Poor Country (HIPC) obliged the FD to abolish the position. Now there are none, and there so is no effective supervision of forest utilisation, and little liaison with local communities, beyond that which the limited District Forestry Office core staff can provide.

4.3 Decision-making

Decision-making in the forest sector is highly centralised. As discussed above, the FD HQ recently re-centralised the allocation of pit-sawing licences, in addition to concession licences and industrial licences. Policies regarding the number of licences that should be issued in a district are routinely over-ridden at national level. Many operational decisions affecting local levels are also made centrally. Districts forest services request capital investments, but it is the HQ that makes the decisions, and often the districts do not get what they want or need. For instance, the Western District requested a 4WD vehicle to enable it to negotiate the sandy tracks typical of the district's forestry areas – but HQ sent a two-wheel drive that could not reach the places where supervision of logging was required. Although the districts produce data on licensing and production, HQ does not collate the data and does not make decisions based on evidence, and does not make decisions to obtain data needed for sustainable management of the forests. There is little transparency or accountability offered by the FD regarding the decisions it makes, although currently, civil society is not demanding this.

4.4 Challenges

A recent study reported that the four key issues affecting the management of natural resources identified by Zamia Forest Action Programme in the mid-1990s: deforestation, lack of management plans, lack of stakeholder participation, inadequate financial resources and weak institutions, are still relevant today (anonymous, personal communication).

The mid-term review of the FAO-Finland Forestry Programme in May 2012 concluded:

"There is inadequate human resource capacity within the Forest Department to manage the forests under state control and monitor forest resource use and enforce regulations. ... The absence of on-the-ground monitoring has encouraged illegal logging activities."

These accounts point to the need for radical change in the Forest Department.

[8] In 2006, when there were 867 employees, 35 (4%) were Professionals, 355 (41.5%) Technical, 30 (3.5%) Support and 447 (52%) General workers /and or Classified Daily Employees (CDE).

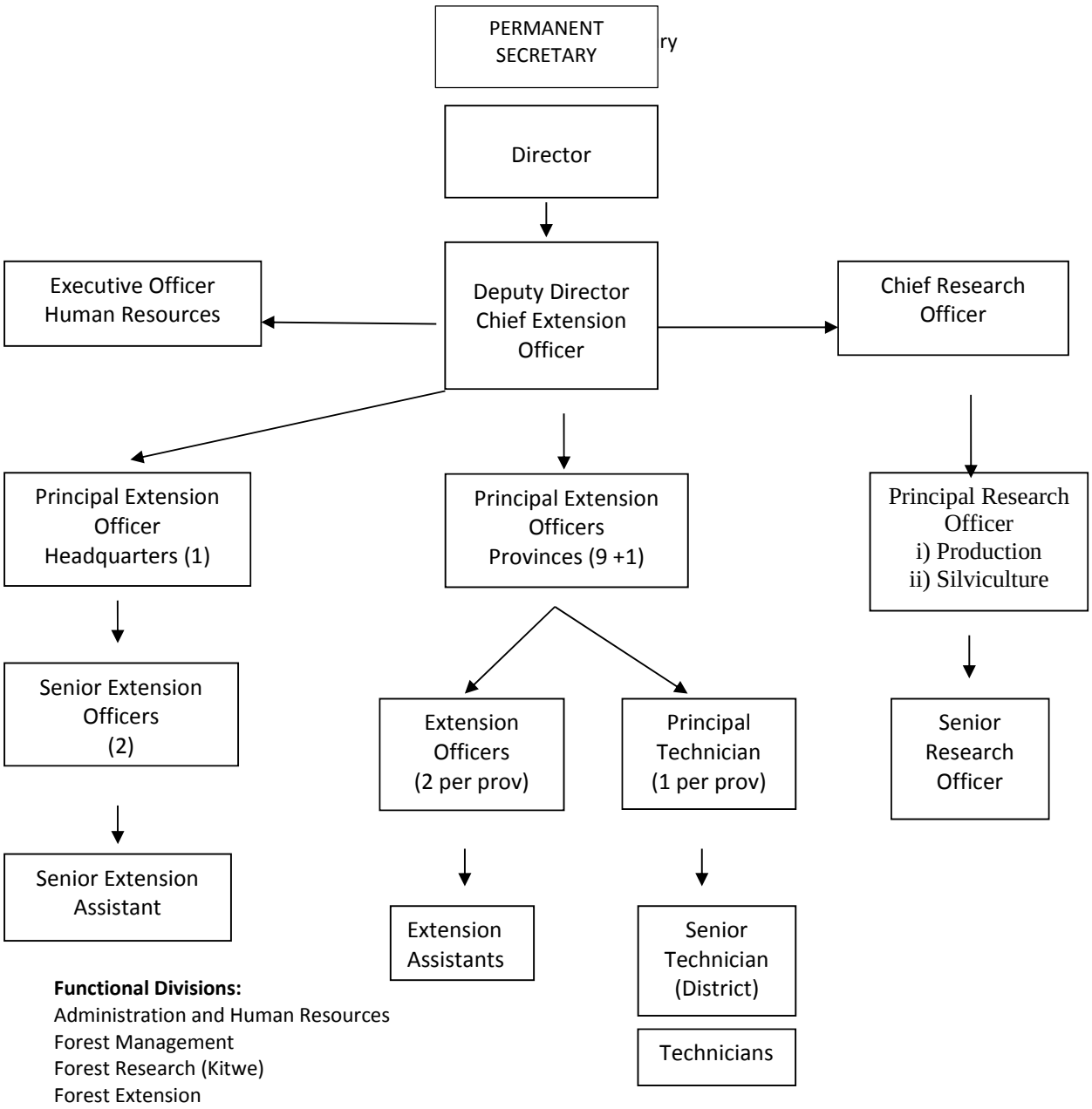


Figure 5 Organogram of the Forestry Department Ministry of Lands, Natural Resources and Environmental Protection

Source: Data from Forestry Department, 2012

5. The Regulatory Framework for Timber Production and Harvesting, Processing, Transport and Marketing

5.1 The Legal Framework for the Sector

5.1.1 Laws and Regulations

The statutory instrument currently governing the forest sector is The Forests Act of 1973. It vests the ownership of all trees and forest resources in the President (see above 3.3.3) establishes the forest administration as a government service administering the forest estate, establishes the status and governance of national and local forests and protected trees and sets out the main rules for the licensing, harvest and removal of major forest produce (timber and charcoal), and supervision by the forest administration. Forest offences, penalties and forfeitures are set out. Forest Officers are empowered to investigate, search and arrest without warrants when offences are suspected. The Minister is empowered to make regulations.

An important issue regarding the legal framework is that, with donor support, a National Forestry Policy was adopted in 1998 and new Forests Act was drafted and actually passed in 1999 (Forests Act No.7 1999). The 1999 Act was set to transform the sector through:

a. Creation of the Zambia Forestry Commission to replace the Forestry Department

b. Transfer of user, control and management rights to participating communities and stakeholders through joint forestry management

c. Sharing of costs and benefits of forestry management with participating stakeholders

d. Progressive change in the role of the Forestry Commission, from active management to a focus on policy, monitoring, analysis and regulation (FSP 2004).

However, the required "commencement order" from the Minister has never been passed so the law is considered non-operational. This is despite considerable donor funding and technical assistance, including the EU's Forest Sector Programme (FSP, 2000-2005), and several studies (latest in 2009) developing a strategy for this transformation. Reasons given include lack of funding to pay off workers, and the problem of repaying a large World Bank loan in the plantation sector. After over a decade in limbo, a new Draft Forest Policy (2009) was prepared, and a new Forest Law is now being considered by Cabinet and Parliament.

Important regulations include:

- The Forests (Amendments) Regulations 2003 – which sets the framework of fees for the harvesting of different timber species and different forest products. (see Annexes)
- Forest (Timber Export) Regulations 1997 are discussed below (Section 4.8)
- Local Forest (Control and Management) Regulations, Statutory Instrument N° 47/2006;
- Joint Forest Management Guidelines, Republic of Zambia, 2005

Licences

There are three classes of licences in forestry: operational licences, production licences and conveyance licences.

Operational Licences

An operational licence entitles an individual, group or company to engage in forest exploitation. There are three types of operational licence: Casual (or subsistence), Pit-sawing (small-scale commercial) and Commercial Sawmilling (or concession) licences. Each type has different requirements which applicants must fulfil, as shown in Table 7 and discussed below. A non-refundable fee of ZKW 500,000 (~ USD 100) is payable at the time of approval for pit-sawing and

commercial licences. A contract stipulating the rules each type of operator must follow is attached to the licence. These licences are required for timber harvesting anywhere in the country – both in forest reserves and in "open areas". In order to actually harvest timber, an operator must also purchase a production licence each month (see below).

Table 7 Requirements for the different types of forest licences

Requirement	Licence Type		
	Casual	Pitsawing	Commercial
Letters of Consent/Recommendation			
Local Traditional Authority		x	x
Local Government Authority (Council)		x	x
District Forestry Officer	X	x	
Provincial Principal Extension Officer			x
Zambia Wildlife Authority (if within GMA)		x	x
Status verification			
Certificate of company/cooperative incorporation		x	x
Tax clearance certificate from ZRA			x
Proof of immigration status (if foreign national)			x
Technical requirements			
Proof of possession of pitsaw equipment		x	
Proof of possession of sawing machinery and equipment			x
Map of the area of operation, with harvesting plan		x	x
Plan of operation		x	x
Environmental Impact Assessment report			x
Financial competence and commitment			
Investment plan			x
Financial proof that the company can run logging and sawmilling operations, by providing proof from a recognized and registered Bank in Zambia			x
Pledge to bank min 75% of Timber proceeds in Zambia.			x
Application Letter			
To Principal Forestry Extension Officer		x	
To the Director of Forestry			x

Source: MTENR website (accessed July 2012)

These licences have been in use for many years, but in 2011, the Minister in the former government revised them, introducing shorter durations and smaller areas (as explained below). The FD advised against this, but the changes went through anyway, ostensibly to curb illegal logging. Furthermore, until 2011, pitsaw licences were issued at the provincial level. However, the Central Government wanted control, and now applications are reviewed in Lusaka. The current requirements for these licences are described below, with reference to the previous requirements.

i) Casual Licence

A Casual Licence is a permit issued for domestic use of forest produce such as poles, firewood and production of charcoal, but also for timber. This Licence is issued by the District Forestry Officer and typically lasts a couple of days for a maximum of 10 trees. Although intended for use by rural households, some sawmills and manufacturers get their timber by sponsoring local people to obtain such licences.

ii) Pitsaw Licence

A Pitsaw Licence is issued for small-scale commercial timber exploitation. It is a one-year (previously three-year) renewable licence and open only to Zambian nationals, either individually or as groups. The maximum area for a pitsaw licence is 1,500 ha (previously 5,000 ha) in extent. Only hand axes and pit-saws are supposed to be employed, and sanctions of fines and/or the cancellation of the licence can be imposed on anyone using chainsaws. Under a pitsaw licence, 20 – 100 m^3 of timber can be harvested monthly.

iii) Commercial or Concession Licence

A commercial or concession licence is issued for large scale exploitation of timber by a "big investor". It is a three-year renewable licence (previously five-year). The maximum area for a commercial licence is 5,000 ha (previously 10,000 ha). The operator can harvest 100-400 m^3/month.

Table 7 sets out the requirements for each kind of licence. It is possible to have more than one licence at a time, provided the conditions are fulfilled separately and independently for each licence. The requirements to obtain different letters of consent give considerable power to local chiefs, councils and provincial forestry staff, and it is apparently common practice for fees or bribes to be paid at all these levels, and particularly to the chiefs. It is said that few chiefs share the revenues thus obtained with their communities. For pit-sawing and commercial licences, only very simplified management plans and Environmental Impact Assessments (EIAs) are required.

Commercial and Pitsawing licence applications can be made at any time of year, but are reviewed and approved on a quarterly basis, by a Forest Timber Select Committee comprising 6 members of the Forest Department Headquarters staff, with final approval being made by the Director of Forestry. Until recently, the team was multi-sectorial, including representatives from different departments with the Ministry of Tourism, Environment and Natural Resources. However, since the reorganisation under the new government and the new Ministry, the team has been restricted to Forestry Department staff.

According to the 1994 policy, there should be a maximum of 2 commercial licences and sawmills and 5 pit-sawing operations, per district, in line with FD capacity to supervise effectively. Provincial staff complain that too many licences are currently being issued, but they are powerless to do anything about it. If the licence conditions have been fulfilled, they are not allowed to refuse an application.

Production Licences

Once an operator has been licensed to operate, s/he must buy production licences each month for the duration of the licence. These are effectively royalty payments, and enable the FD to monitor to production. A minimum of 20 m^3 for pitsaw licences and 100 m^3 for commercial licences must be bought monthly, or a fine equivalent to 150% of the minimum royalty is imposed. The production licences are issued by the District Forest Office, and the money deposited in a central government account - the "Control 99". The licences stipulate species and volumes, with the royalty paid per m^3, varying with the species. Current fees and prices for forest products and services can be found in Statutory Instrument No. 121 of 2003, and is provided in Annex 1. The maximum royalty payable is ZMK 136,000/ m^3 (~ USD 25) for teak, mukwa and rosewood. The minimum diameter limit for harvesting is low, at 30 cm dbh.

Licensees must report monthly to their District Forest Office, on their logging operations. The Districts report monthly, quarterly and annually to the province, and likewise the province reports to FDHQ. The FDHQ prepares annual reports, which should summarise all this data.

Conveyance Licence

Once the timber has been harvested, a conveyance licence has to be bought to permit the transport of the logs from the forest to any other point. Conveyance licences cost ZMK 54,000/ m^3 (~USD 10), irrespective of species. They are typically valid for two weeks, so, a canny producer will assemble a lot of logs at the loading bay and then make multiple journeys on the same conveyance licence. Because most timber buyers pay by the "inner square" of good timber within the log, production and conveyance licences are also assessed on this basis. Unfortunately, timber inventory (and theoretically the annual allowable cut) is still based on diameter over bark, so the foundations are set for over-harvesting.

5.1.2 Forestry Policy and Programmes

The first post-independence Forest Policy was published in 1965 and established the Forestry Department as the "sole actor in the sector" with authority over a huge estate, control of all decision making, and total responsibility for the plantation sector. This "command and control" system was not effective, and with donor support, Phase I (1995-1997) of the ambitious 20-year Zambia National Forest Action Programme (ZFAP, 1995-2014) formulated a new Forestry Policy, adopted in 1998. The Forests Act of 1999 (see above) was drawn up for its implementation, and the second phase of the ZFAP (1998-today) provided a framework and some support for the necessary activities. More details of donor support to forestry are presented below. No donor programmes have focused on governance.

Under the the new Patriotic Front Government, the government, business sector and civil society are said to have renewed interest to resuscitate the forestry sector (anonymous, personal communication). In October 2012, the new Minister of Lands, Natural Resources and Environmental Protection, RH Wylbur Simuusa, issued a policy statement on behalf of the new Patriotic Front Government. For Forest Management, this focused on the need for forest conservation and tree planting, especially in the light of global warming. He announced a national tree planting programme to supply timber, the preparation of a new Forestry Bill, a review of export policy and promotion of value-addition and a beekeeping policy. In November 2012, the Minister went further, announcing details of an ambitious national tree planting programme, and, "to protect the depleting forests around the country" and address the governance problems that beset the forest sector (including overcutting and the purchasing of illegal timber from communities), declared a ban on harvesting indigenous timber, suspending all timber licences. The ban does not apply to exotic timber plantations, although their degradation has also been a serious concern[9].

5.2 Other Institutional Stakeholders

Many government agencies play roles in the governance of the forest sector. Typically on the central level, each natural resource sector works independently of others, without collaboration or coordination, even within the same ministry. The same problem exists at the lower levels of the administration; each sector works in its own "silo" (anonymous. personal communication).

The **Customs Service** is part of the Zambia Revenue Authority, which was formed in 1994[10] and has overall responsibility for collecting revenue on behalf of the Government. It was created to redress the serious shortfall in revenues available to the Government and the increasing dependency on donor funding to support basic necessities (ZRA website). There are 20 customs offices throughout the country, and several branches in neighbouring countries – Namibia, DRC, and Zimbabwe.

Zambia Environmental Management Agency (ZEMA). ZEMA approves EIAs.

[9] (http://www.zambian- economist.com/2012/11/timber-license-suspension.html)

[10] under the Zambia Revenue Authority Act No. 23 of 1993

Zambia Bureau of Standards establishes and enforces standards for sawn timber. Officers are present in most border points, where they inspect and authorise timber exports.

Department of Agriculture's Plant Quarantine and Phytosanitary Services issue Phytosanitary Certificates, as required.

District councils (Ministry of Local Government and Housing) play an important role in recommending forest licence applications. They also raise local taxes on timber leaving the district.

District Council of Chiefs - Ministry of Chiefs and Traditional Affairs (MOCTA). Chiefs must also give their recommendation for any application for a timber licence. They also oversee any customary rules relating to natural resource management.

Ministry of Commerce, Trade and Industry prepares policies, strategies and action plans for the development of industries, including forest industries. They also monitor trade and industrial development.

Ministry of Finance and Planning produces the national development plans, covering all sectors, and allocates annual budgets to the different departments. The current plan is the Sixth National Development Plan 2011-2015.

Zambia Development Agency – has an officer who oversees and promotes development in the forestry sector.

Patents and Companies Registration Agency – Registers all companies doing business in Zambia, including timber exporters.

Copperbelt University has a forestry department and trains students to Bachelor and Masters levels.

Zambia Forestry and Forest Industries Corporation (ZAFFICO), previously the Industrial Plantations Branch of the Forestry Department, is the parastatal which manages 48,000 ha of plantation still "owned" by this parastatal.

Zambia Wildlife Authority (ZAWA) manages National Parks and Game Management Areas, some of which overlap the Forestry Department's reserves. ZAWA has run a community-based wildlife management programme (Administrative Design for Game Management Areas, ADMADE) since the 1990s, but its implementation and usefulness are questioned[11].

5.3 Main Actors

5.3.1 Value chain actors

The value chains in Zambian forestry are very varied. In some cases, they are fully integrated with one actor controlling all links, but more typically, they are fragmented and in some places they are highly fragmented, with nearly every operation being conducted by a different actor: felling, transporting to loading bay, loading trucks, transport to sawmill or market, sawmilling, preparing finished timber, manufacturing items, onward transport and export.

Village loggers/ Pit-sawyers

Logging has become an important livelihood activity for villagers in forest areas. According to official figures, there were 56 pit-sawing licences in mid-2012. Hard data is not available, but it appears that many are totally unlicensed, or work with casual licences, which are supposed to be for subsistence use timber, or supply someone with a pitsaw licence.

Pitsaw licences can be obtained by individuals, but also by groups of people and this latter modality is most common, as the costs of licensing, producing and transporting timber can be shared. The

[11] Eg: http://zambiacbnrmforum.wordpress.com/2012/11/19/cbnrm-forum-holds-breakfast-meeting/; http://www.lionaid.org/blog/2010/11/community-based-wildlife-management-programmes-do-the-communities-benefit.htm

members of a group are named on the licence, but in practice, unofficial membership is very difficult to control. In some cases traders or sawmill owners provide material support or credit to pit-sawyer groups. Pit-sawyers expressed a preference for Chinese buyers over South African or Zambian traders: while they usually offered lower prices, they tended to be more reliable, paying the agreed-upon prices in cash and on time. The Chinese buyers are also known to care little for formal regulations.

Concession operators

Concessions are open to foreign nationals as well as Zambians. Currently there are 20 concessions (see Table 10). Although detailed information was not available, it appears that Chinese and South African operators outnumber the local companies, and numerous local companies also have foreign partners.

Concessions operate in various different ways: some only harvest and market logs, some are fully integrated and export timber abroad, some are only sawmills, some only buyers and exporters. We visited one concession where the Chinese company had subcontracted all the labour to one Zambian national, enabling the company to avoid labour laws, and to externalise many of the operational risks – of machine breakdown, bad weather, rotten quality logs, etc. They extract further profits by supplying the forest camps with food at highly inflated prices. Other Chinese companies run their own operations - apparently, they were given a free hand by the previous government to bring in their own labour (complaint in all sectors). Some have serious sawmills, and even make some products for the local market. Others have makeshift sawmills, just doing the minimum processing required for export.

Manufacturers

There are furniture and joinery producers who source timber locally, and supply their products to the domestic or export markets. The Buseko market in Lusaka has a large number of small scale manufacturers producing door and windows and their frames and furniture for the domestic market. Considering their tools and workshops are very basic, the quality of their products is very high.

Export Traders

Various companies deal only with exporting hardwood timber. In Sesheke District (Western Province) South African traders based in Namibia support village loggers, and simply nip over the border to buy the timber.

Domestic Market Traders

The domestic market for plantation and indigenous timbers is big – but no quantitative data are available (see below). Again, some domestic timber traders are part of a value chain, buying from other traders, while others go out and source the timber themselves. In the Buseko market in Lusaka, many of the traders of round and sawn softwoods are women, some travelling to Malawi to source their timber.

Transporters

Transporting timber can be quite lucrative and is relatively low risk. Some “middlemen” simply buy timber in the forest and transport it to a sawmill or another buyer, even quite nearby.

Politicians and government officers are said to be involved in the forest sector, typically as ghost partners in concession companies or sawmills.

Industrial/Professional Associations

Zambia has quite a few associations serving companies in the forest sector.

The Timber Producers Association of Zambia (TPAZ) is an association of over 200 forestry producers, of all sizes, from carpenters to sawmill and factory owners. It was formed in 2001, to represent timber producers in the transformation process creating the Forestry Commission. Their vocal leadership lobbies for sustainable management and support for value-adding processing by indigenous operators. They object to the sector being opened up to competition from what they see as unscrupulous Chinese operators.

Other associations linked to the forest sector include: Timber Exporters Association, Zambia Sawmillers' Association and Zambia Manufacturers Association.

5.3.2 NGOs and Civil Society

Several national level NGOs, such as Wildlife Environmental Conservation Society, Women for Change, Green Living Movement Zambia, Keepers Zambia Foundation and the Zambia Climate Change Network are directly or indirectly engaged on forestry-related issues, but not focused on issues of forest governance. There are problems with Zambian Civil Society. NGOs are often lead by on charismatic person who is able to attract funding, but they lack the capable staff to deliver tangible results. NGO leaders tend to come from the same small educated elite as most government officials and this can make active advocacy on some issues difficult. The voice of civil society is thus weak in Zambia. However, there is undoubtedly some potential for it to drive sector reforms and support sustainable forest management, by engaging decision-makers and holding them accountable and by conducting independent monitoring and research to support change. The Zambia Community-Based Natural Resources Management Forum was established in 2004, but has been active only intermittently. In 2011, there were 150 members.

National branches of international NGOs such as WWF, Wildlife Conservation Society (WCS), Birdlife, and Transparency International are active in Zambia, but none is dealing specifically with forest governance and illegal logging.

5.3.3 Donors and forest sector support projects

The FD has received a lot of donor funding and assistance over the years, especially from Finland (which has been supporting the FD for over 30 years), the EU and IFAD (IFAD 2012). Results have been disappointing (IFAD 2012) and many basic problems identified 20 years ago, persist today.

The Zambia Forestry Action Plan (ZFAP) was an ambitious 20-year programme of the GRZ launched in 1995 with the technical support of FAO, focusing on sustainable management, utilization and conservation of Zambia's forest resources. Phase I (1995-1997) produced the National Forestry Policy 1998 and the new Forestry Act 1999, and funded various inventories. This paved the way for Finnish-funded programmes of support for decentralised forestry under the Provincial Forestry Action Programme (1995-2007), operating in Central, Copperbelt and Southern Province and including pilots in Joint Forest Management. JFM was also supported by USAID in Eastern Province (2000-2004), and USAID are currently agreeing a new community-based forest management programme, with support from their Global Climate Change programme.

The Forest Resources Management Project 2002-2008 (IFAD loan, German and Irish assistance) $15 million focused on forest based income generation, infrastructure development and forest product marketing in Luapulu and Northwestern provinces. The European Development Fund Forestry Support Program (2001-2004), and in 2005 funded provided an additional6 months funding to support creation of Forestry Commission. The National Forestry Programme Facility (NFPF, 2005-2008) supported a National Multi-stakeholder Steering Committee, which is just now being resurrected.

Integrated Land Use Assessment (ILUA) Project was an inter-departmental GRZ initiative supported by the FAO and the Finnish Government which supported a national land use and forest resource inventory (see above 3.3.1). This project is now entering its second phase.

Zambia entered the National Forestry Programme Facility (NFPF) in March 2005 and has since established a national Multi-stakeholder Steering Committee comprising of Forestry Department, FAO country office, Timber Producers Association, Forestry and Wildlife Association, Keepers (Z) Foundation, ZAFFICO Ltd and Copperbelt University. It is unclear whether this is still functioning.

Currently, donors are coordinated according to the Joint Assistance Strategy for Zambia (JASZ, 2007-2010). There is a division of labour amongst the donors to support the National Development Plan, with each sector lead by a particular donor. Currently, Environment (including natural resources, ENR) is led by Finland, with the participation of WB, UNDP, Norway, Denmark and more recently Japan. Sector advisory meetings are held one or two times a year and also involve civil society and private sector representatives.

The following ENR programs or projects are either underway or in the pipeline with funding from cooperation partners (CPs):

- The Environment, Natural Resources Management and Mainstreaming Programme (ENRMMP, 2009 to 2013), funded by Finland and Denmark is a sector support programme which amongst other things seeks to achieve sustainability in natural resource utilisation.
- Civil Society organisations engagement on environmental and natural resources issues are supported by the Civil Society Environmental Fund which is funded by Denmark and Finland and managed by a consultant company.
- The Integrated Land Use Assessment (ILUA) project has completed its first phase and started its second phase of operation in 2010. This project is implemented by FD, managed by FAO and funded from Finland under the FAO-Finland Forestry Programme.
- The UN-REDD project, implemented by FD, managed by UNDP with support from FAO and UNEP and funded by Norway,
- A Joint Forest Management implementation project in the Eastern Province, funded by USAID. The project is in an advanced stage of planning and expected to start early 2013.

The FAO's National Forest Monitoring and Assessment Programme in Zambia includes the cooperative programme with Finnish Government funding. Amongst the donors, only Finland has been active in Zambia's Forestry sector, supporting FAO's four year programme – Sustainable Forest Management in a Changing Climate (2009-13). Finland is currently supporting a planning process of a new decentralised forestry and other natural resources management programme, starting in 2013 with a three-year introductory phase.

Research organisations

The Centre for International Forestry Research (CIFOR) has a presence in Zambia, officially hosted by the Forestry Department, although not co-located with it. Recent research projects include a review of the charcoal and timber sectors (Gumbo, in press), and Chinese investments and trade in the timber industry in Southern Africa Zambia (German et al 2011).

5.4 Legality Assurance System

The system of licences, permits and taxes which governs the production, transport and export of timber in Zambia is adequate to ensure timber legality, but is not yet conceived of locally as a "legality assurance system", and is not well-enforced. Some of the five key elements recognised by FLEGT, relating to the three pillars of sustainability (environmental protection, social equity, economic viability) are in place.

1. A definition of "legal timber" is embodied in a range of laws and regulations, but these are quite weak, and the sector has not focused on producing a legal standard. The minimum exploitable diameter for all timber species is low – at 30 cm dbh. There are no annual allowable cuts for species at any level – national, provincial or forest reserve. Legal timber is licenced timber (see below). Timber is not considered legal unless it is hammer-marked by a forestry official. The cut stump also needs to be hammer marked, but forestry officials almost never supervise felling in the forest. Currently, there are no protected species, but in 2005, the FD banned harvesting of mukwa (*Pterocarpus angolesis*).

2. The system to control the movement of timber is based on conveyance licences issued at the district level. The associated production licence should accompany the load. There does not appear to be any system for ensuring that operators do not exceed their monthly felling limits. The permits tend to get reused.

3. The Forest Department is legally responsible for licensing and forest law enforcement. These are discussed elsewhere. The licensing system is focused more on revenue collection than sustainability. The only limits on production are the legal monthly maximum, and the amount actually paid for through production licences. However, there does not appear to be any system for ensuring that the volume paid for or the monthly maximum is not exceeded.

4. Several different agencies are responsible for inspecting and authorising timber exports, as discussed in Section 4.7. Since all Zambia's borders are land borders, containers are stuffed before arriving at the border point, which makes effective inspection laborious.

5. There is no independent monitoring of Zambia's timber production.

5.5 Timber Tracking

According to the forest law and regulations, a forest officer is supposed to be present in a logging area, and mark the trees for harvesting. Both the stump and the log should then be hammer marked, with the unique two or three digit-coded hammer of that District (see photo 1 below). Theoretically, timber can be traced back to its District, but not to its forest or its operator. However, the forest officers are pretty loose with their hammers, and as mentioned above, because of lack of transport, they do not get into the forest.

Photo 1 Timber Hammer Mark on end of log (NB 1 digit missing)

5.6 Requirements for Export of Forest Products

The export of timber is controlled under the Timber Export Regulations of 1997[12]. The regulations state that the only forest products that may be exported are sawn timber, railway sleepers (drilled on both sides), poles from planted species, finished timber products and plantation trees. They further explicitly ban the export of charcoal; un-finished timber products from natural forests; and peeler and saw logs of any species. Sawn timber must meet the standards set by Zambia Bureau of Standards, and various international standards. These call for fully squared timber, of standard commercial dimensions. Rough sawn timber cannot be exported.

To ensure legality, an exporter must have a valid concession licence (i.e. be a producer), or, in the case of timber merchants, have a certificate of agreement from a concession licence holder. Not more than 75% of a concession's production may be exported, and production documents must be presented to prove this. All timber must be hammer marked by a forest officer prior to export.

An exporter must obtain a Clearance Certificate for Timber Export, authorised, following inspection, by three agencies: Plant Quarantine and Phytosanitary Services, Forest Department, and Zambia Bureau of Standards.

An Export Declaration Form (EDF) from the exporter's Bank is also required, confirming that the consignment has been subject of a purchase order and fully paid for. The EDF comprises an export permit, customs bill of entry and customs declaration. The EDF must be submitted to a customs official, along with the Clearance Certificate for Timber Export, commercial invoice, packing list, certificate of origin (duly signed by the approving authorities), shipping consignment notes, certificate of agreement (where applicable) and records of production. If all is in order, a customs officer then signs the Clearance Certificate, and the timber shipment can pass the port of exit.

5.7 Law Enforcement

Under the 1973 Forests Act, all forest officers are empowered to investigate, search, arrest and seize without warrant should they suspect a forest offence has been committed.

Since 1997, there have been no forest guards in Zambia, so the supervision of forest operators and general forest law enforcement is left up to professional staff at the District Offices. Most of the district offices have serious constraints on transport. Often they rely on the forest operators themselves to get out to the field – so scope for surprise inspections is almost non-existent.

Annual reports of the FD record several different types of law enforcement activities: blitz patrols, road blocks, inspection of licences and inspection of charcoal coupes. In 2001, there were 381 events, mostly (200) blitz patrols in Northern Province. No activities at all were reported for the important timber producing Western and Northwestern provinces.

Data on the number and outcome of forest offences available in annual reports for selected years between 2000 and 2009 are presented in Table 8. The main offences are illegal production and transportation of charcoal and timber, and squatting and illegal agriculture in forest reserves.

Most of the offences and apprehensions take place in Lusaka – reflecting the concentration of forest officers, and the role of Lusaka in the domestic market and as an entrepot for export. Court action is taken in a very small percentage of cases.

[12] Part XI of the Forestry Act of 1999 also deals with export, but this Act is not operational. The 1973 Forests Act does not deal with export at all.

Table 8 Forest Offences and Outcomes recorded in FD Annual Reports

	2000	2001	2002	2003	2005	2006	2007	2009
Apprehended	2529	*	*	2486	478	715	*	625
Cautioned & released	1158	*	*	**	121	173	*	434
Fined	1403	*	*	**	63	158	*	195
Court Action	32	*	*	354	1	38	*	1
Aquittals	39	*	*	0			*	1
Conviction	30	*	*	46	12	24	*	14
Cases Pending	40	*	*	*	*		*	1

Source: Forestry Department Annual Reports (2000, 2006, 2009). NB: Many of the figures do not add up, there may be carry over between years. * data not provided; ** data inconsistent

5.8 Information and Monitoring Systems

Although the FD Forest Data Bank was supposed to have been strengthened and further developed through funding from Provincial Forestry Action Programme Phase II in 2001, no centralised information and monitoring system was in evidence in 2012. Different officers appear to maintain different sets of reports and information, and often these are incomplete. Monitoring of production from natural forest appears totally ad hoc. There appear to be standardised reporting formats to be completed at district, provincial and national levels, which should simplify and reduce the reporting burden. However in the national reports provided to the consultants, many tables were blank, incomplete or had data from earlier years. Not infrequently, information in the text contradicts information in tables. Since 2005, reporting has become limited to provincial data on revenue production, and staffing, and topics of marginal importance, such as results of soil analysis and herbarium management, to the neglect of data on licensing, law enforcement, production, processing, exports and imports, and industrial activity. This contributes to the FD's weakness in strategic planning and its poor decision making.

In Zambia, forest monitoring has historically been viewed as the inventory of biophysical aspects of forests. As a statutory requirement, such inventories are supposed to be carried out periodically (every five years) for each protected forest. Although due to resource constraints, only one or two inventories are conducted annually, this remains the prevailing understanding of forest monitoring.

The Division of Forestry Research, in Kitwe, established two databases in 2009 "to facilitate monitoring of vegetation change, species extinction and threats to their existence".

Zambia also participates in the FAO National Forest Monitoring and Assessment (NFMA) programme. The main activity here was the ILUA programme, discussed above, which is now in its second phase. ILUA II (2010-13) aims to improve the use and dissemination of ILUA-generated data and to enhance capacity in collecting and analysing forest resource information for sustainable forest management, REDD+ monitoring and carbon inventory. However, this work has not contributed to FD's monitoring of forest production, law enforcement.

5.9 Certification

There was considerable enthusiasm for certification in the FD after economic liberalisation in 1990s, when Zambia was looking to European markets for its hardwood products. One 826,000 ha natural forest was FSC certified in 1998 and in 2003, a 1,092 ha plantation and two associated industries got FSC forest management and chain of custody certificates. However, both the forest certificates were suspended, the natural forest certificate because of problems with the participation of pit-sawyers (Njovu 2004). These problems were never resolved and as of November 2012, FSC records no

certification in Zambia[13]. Since the rise of the Chinese markets, where there is not yet any interest in certified timber, enthusiasm for certification has collapsed. Furthermore, FD licensing of timber harvesting is now based on very small areas and very short time frames, which are incompatible with certification.

5.10 Transparency in the Sector

The MTENR used to have a website on which FD had some pages, but since the FD was moved to the MLNRE, the site has been suspended. The structure of the site promised a lot, but many of the pages were blank. Information was available on licensing and some legislation.

The FD is the only government department that does not submit data to the Central Statistics Office (CSO). The only data the CSO has regards trade and is obtained from the ZRA. As recently as 2009, the FD reported efforts to develop a harmonized system of collecting information and sharing it with the general public through the CSO, but this hasn't happened.

Issues regarding reporting by the FD itself were discussed above (Section 4.9). Perhaps because of this lamentable state of affairs there is an unwillingness to share reports. The Zambia Revenue Authority (ZRA) and the Patents and Company Registration Authority (PACRA) were also quite unwilling to share information. Information on the types and numbers of forest industries and their locations seemed simply unavailable.

5.11 FLEGT and other governance related activities to date

Zambia is not currently negotiating a VPA, but participates in the SADC FLEGT initiative and also those of FAO-ACP. Zambian government officials from the Forestry Department, Ministry of Finance and Zambia Revenue Authority have participated in different FLEGT training events, and several Forestry Department staff attended the SADC FLEGT meeting in Johannesburg in July 2012, to discuss plans for a regional FLEGT programme.

A relevant FLEGT activity in Zambia, requested by GRZ, funded by FAO and supported technically by Tropenbos and Wageningen University, has been a project to help integrated forest governance monitoring (FGM) into Zambia's national-forest related monitoring systems. A workshop was held in April 2011 (Sekeleti 2011a), and a background paper prepared in October 2011 (Sekeleti 2011b), and an action plan is being prepared. However, it was clear from the background paper that Zambia did not have an existing system for governance-related monitoring and that stakeholders did not fully grasp what was required.

In 2005, the EC commissioned a governance profile of Zambia, to help inform its programming. Nine dimensions were examined, including: Political/democratic governance; Political governance/rule of law; Control of corruption; Government effectiveness; Economic governance; Internal and external security; Social governance; International and regional context and Quality of partnership. Standardised questions were employed and then an overall score (1 – 4) was awarded[14].

Also on governance, the EC comments in its Assistance Strategy (2008-13):

"Government effectiveness is the governance area in which Zambia is worst performing, below the Sub-Saharan average. The Government still struggles with accountability for public resources and inability to effectively deliver services. A Public Sector Reform Programme has been running for some years; restructuring of the civil service took place with reduction of the wage bill to a more manageable 8% of GDP. Salaries in the civil service remain uncompetitive and generate serious human resource problems".

[13] http://ic.fsc.org/facts-figures.19.htm
[14] It was not stated whether a score of "1" was good or bad.

Zambia established an Anti-Corruption Commission[15] in 1980, and several versions of the Anti-Corruption Act have been passed, the latest in 2012. A National Corruption Prevention Policy and Strategy (NCPPS) were adopted in 2009. The EC observed progress is too slow, and corruption remains stubbornly high.

5.12 REDD+

As in many other countries, responsibility for REDD+ is shared between the agency responsible for forests (here FD) and the agency responsible for multi-lateral environmental agreements (here NEMA), and as elsewhere, there are tensions between the two.

Zambia began working on REDD+ and the UN-REDD+ pretty early. Quick Start Initiative was approved in September 2010[16] for funding of USD 4.49 m over three years. Six outcomes will be pursued:

Outcome 1: Capacity to manage REDD+ Readiness strengthened

Outcome 2: Broad-based stakeholder support for REDD+ established

Outcome 3: National governance framework and institutional capacities for the implementation of REDD+ strengthened

Outcome 4: REDD+ strategies identified

Outcome 5: Monitoring Reporting and Verification (MRV) capacity in order to implement REDD+ strengthened

Outcome 6: Assessment of Reference Emission Level (REL) and Reference Level (RL) undertaken

A technical consultant has been appointed to assist the development of MRV methodologies. An orientation workshop was held in August 2011. In January 2012, a presentation was made on Zambia's legal preparedness for REDD+ (Mason-Case 2011), and in August 2012, papers were published on Drivers of Deforestation (Vinya et al 2012) and Forest Management for REDD+ (Kokwe 2012).

Forest cover in Zambia continues to decline both in quality and quantity due to a number of factors such as the extensive slash and burn practices of shifting cultivation; high demand for wood-based energy; unsustainable use of the few known commercial indigenous tree species; over-grazing; and forest fires. Deforestation is reported to range from 250,000 to 300,000 ha/yr (Musoka and Siampale 2009; UN-REDD 2010), but this figure dates from the mid-1980s, and needs to be revisited. Another figure states that between 2000 and 2005, the FD lost over 1.2 million ha of its forest reserves through encroachment and subsequent "degazettement" (Kalinda et al 2008, Hansugule et al 2007). While it appears there is scope for Zambia to participate from and benefit from REDD+, the forest management and governance challenges to make it work will be enormous, and the greatest contribution of REDD+ may be in prompting long awaited action on these issues.

DFID supports the civil society based Zambia Climate Change Network (ZCCN).

Currently, there are no other schemes for payments for environmental services, although the recent Southern Africa "Summit for Sustainability" In Gabarone (May 2012) highlighted the importance of environmental services for sustainable development. Zambia did not send any representative to the meeting.

[15] http://www.acc.gov.zm/

[16] Zambia is does not receive support through the Forest Carbon Partnership Facility.

6. The Fuelwood Market

6.1.1 Production and consumption

Fuelwood, consisting of firewood and charcoal, is made up of wood not only harvested in forest reserves but also wood collected from trees and branches in forests in open areas and on other land use types.

There are no recent and comprehensive studies of fuelwood production in Zambia. Sometime in 2000, the annual charcoal consumption in Lusaka was estimated at 245,000 metric tonnes (MT), which translated to 15 million cubic metres (m3) of wood. The average urban consumption of charcoal has been estimated at 3.9kg/day or 1,040 kg/household/year, and it was estimated that 20,000 new urban households were being established annually (FD 2006). Another study estimated 27% of households in Zambia use it as their main source of cooking energy while 56% use firewood. Electricity is used by 16% of households for cooking and by 19.3% of households as their main source of lighting. The charcoal industry provides employment for about 50,000 people in rural and urban areas (Siyanga and Muyoyeta 2011). Small scale, informal charcoal production is a mainstay of many rural household livelihoods, and with increasing urban demand, commercial level production also takes place.

FAO data show that fuelwood production increased from 7.9 million m3 in 2001 to 9.1 million m3 in 2010 (FAOSTAT, 2012). According to the FAO Forest Products Yearbook (2010) and FAOSTAT (2012), Zambia has been producing an average of 1,041 MT of charcoal per annum in recent years. With a conversion factor of 5,26 m3 roundwood needed to produce 1 metric ton of charcoal, this corresponds to 5,476 million m3 of fuelwood. This means that more than 50% of the fuelwood used is in the form of charcoal. The increase in fuelwood consumption can be expected to follow the population increase and be linked to higher costs of kerosene and electricity. Charcoal is also the preferred fuel for use in towns and is no doubt increasing with urbanisation.

Seen in relation to the roundwood production from plantations, the use of firewood in Zambia, basically for cooking at the household level, is almost ten times higher.

6.1.2 Regulations

For charcoal production, the permit is obtained from the District Forestry Office in the area of production upon payment of production licence fee of ZMK 108,000 (~ USD 19,615)per cord and conveyance fee of ZMK 5, 400 (~ USD 980,68) per bag when transporting charcoal to the market. Subsistence use of firewood does not require a licence. Little firewood is traded outside districts.

7. Forest Utilization

7.1 Natural Forests

7.1.1 Licensing and Exploitation

Most of the tree species of commercial value in Zambia are used for timber production, as construction material and for making furniture products. Others are used for charcoal production, poles, soil improvement, fodder, medicines, turnery and many other uses. Altogether 41 indigenous tree species in Zambia produce edible fruit and seeds, 44 are good for animal feed, 38 for tannin production, 39 for dyes, 11 for resins and gums, and 30 for timber. The table in Annex 2 shows a list of selected target species in Zambia and their current uses.

The Global Forest Resource Assessment for Zambia (FAO 2010) estimated that indigenous forests contain a growing stock of about 2.8 billion m^3, of which 340 million m3 (1%) is commercially valuable. The total round wood production is estimated to be 11.2 million m^3, of which 95% is used for fuelwood or other subsistence purposes in rural areas. Industrial roundwood production was estimated at 1.2 million m^3/ year for the five years 2003-2007.

Table 9 Number of active Commercial and Pit-sawing Licences with minimum/ maximum allowable yields for selected years from 2000-mid-2012

Licence Type	2000	2001	2003	2005	2006	2011	Mid-2012
Commercial	21	41	20	27	32	17	20
Min yield (1200 m3/ yr)	25,200	49,200	24,000	32,400	38,400	20,400	24,000
Max yield (4800 m3/yr)	100,800	196,800	96,000	129,600	153,600	81,600	96,000
Pitsawing	72	82	45	36	45	33	56
Min yield (240 m3/yr)	17,280	19,680	10,800	8,640	10,800	7,920	13,440
Max yield (1200 m3/yr)	86400	98,400	54,000	43,200	54,000	39,600	67,200
TOTAL licences	**93**	**123**	**65**	**63**	**77**	**50**	**76**
Min Yield	**42,480**	**68,880**	**34,800**	**41,040**	**49,200**	**28,320**	**37,440**
Max Yield	**187,200**	**295,200**	**150,000**	**172,800**	**207,600**	**121,200**	**163,200**

Source: Forest Department Annual Reports and Forest Timber Select Team documents. *Licensing of Forest Utilisation*

Table 9 presents the available data on the number operational commercial and pitsawing licences issued over the last 12.5 years. The figures are taken from the FD annual reports. One individual may have more than one licence. There are no scientifically reliable estimates of timber production at present but indicative minimum and maximum annual yields have been calculated from the regulations (see above). The minimum production ranged from 28,320 m3 in 2011, to 68,880 m3 in 2001, while the maximum ranged from 121,200 m3 and 295,000 m3 in the same years.

The annual reports only quoted provincial licensing figures in 2003. These are provided in Table 10, showing the concentration of commercial licences Northern and Western Provinces and the concentration of pitsawing licences in Northwestern, Central and Western Provinces.

Table 10 Timber production by commercial licence holders, by province, in 2003

Provinces	Number of Licences		Total Concession Production (m^3)	Total Value (ZMK)	Total Value (USD
	Pit-sawing	Concession			
Central	15	0	495	1,827,400	331,870.54
Copperbelt	2	5	1,324.00	25,872,899	4,698,726.57
Eastern	-	-	-	-	-
Luapula	4	1	310.84	22,075,579	4,009,102.71
Lusaka	0	0	3,179.62	16,269,450	2,954,662.98
Northern	0	14	2,075.15	78,285,460	14,217,269.23
Northwestern	21	3	1,923.32	66,391,822	12,057,288.9
Southern	-	-	714.34	165,903,549	30,129,418.95
Western	22	11	9,148.90	315,516,198	57,300,279.43
Research	0	0	0	0	0
Total	**64**	**34**	**19,171.17**	**692,142,357**	**125,698,619.32**

Source: FD Annual Report (2003)

Although the harvesting plans required to obtain a licence do include estimates of the available volumes and intended harvest levels of different species (sometimes based on analysis of Google Earth images), the operational licences themselves do not specify the species which may be harvested (see Annex 2), and sometimes operators arrive at their concessions to find there is no timber. Production licences, which must be purchased monthly from the District Forest Officer, do specify species and volumes, but there does not appear to be any system for ensuring that the amount paid for is not exceeded. No national level data on the actual harvesting licences was available in the FD annual reports, although provincial annual reports to return this information. As an example, Table 11 summarises the harvesting licences for Western Province in 2008. Striking is the overwhelming concentration (97.5%) on just three species.

Table 11 Annual timber harvesting licences by species, Western Province, 2008 (m^3 round)

District Species	Kalabo	Kaoma	Lukulu	Mongu	Senanga	Sesheke	Total	%
Pterocarpus angolensis (Mukwa)	5	433.5	10	90	641.5	3,044	4,224	35
Baikiaea plurijuga (Teak)	0	0	0	75	15	3,118.3	3,208.3	26.6
Guibourtia coleosperma (Rosewood)	0	1,502	308	2,033	10	48.3	4,336	35.8
Afzelia quanzensis (Mupapa)	0	0	0	15	0	0	15	0.1
Other species	3	110.5	0	156	0	32	301.5	2.5
TOTALS	**8**	**2,046**	**318**	**2,369**	**666.5**	**6,677.3**	**12084.8**	**100**

Source: Annual Report, Western Province (2009)

7.1.2 Management Planning

Most reserves do not have current management plans, and although each year the FD conducts inventories and produces management plans for one or two of its reserves, no list of the reserves having current plans was available. In addition, some private sector operators have prepared

management plans, based roughly on FSC guidelines, as there is no national planning standard for indigenous forests. ILUA II will provide information that can be used for this purpose.

7.1.3 Production

Table 12 presents the production and revenue collection data available from the FD. The data is very incomplete, with availability for only four years, and variable, with volumes ranging from 6,603 m^3 in 2000, to 40,171 m^3 in 2007. It expresses production in terms of sawn timber, but it is not always clear whether this is just for indigenous timber, or also includes plantation timber. It is far below FAO's estimate of 500,000 m^3.

It is interesting to compare licensing and production data, but unfortunately, the only years for which both licensing and production data are available are 2000 and 2003. In 2000, 93 operational licences were issued, and the minimum volume which should have been produced was 42,480 m^3. However, reported production that year was only 6,603 m3 of sawn timber, equal to 11,885 m^3 logs[17]. In 2003, there were 65 operational licences which should have produced an absolute minimum of 34,800 m^3 of timber. The recorded production figure of 19,171 m^3 (or 34,500 m^3 logs) is about right.

Table 12 Production and Revenue collection (ZMK & USD billion), 2000-2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Sawn timber (m3)	6,603	Incom-plete	Incom-plete	19,171	r/n/a	Not reported	Not reported	40,171	r/n/a	14,741
Revenue (B ZMK)	1.578	1.690	Incom-plete	1.901	r/n/a	4.634	3.051	6.026	r/n/a	6. 433
(B USD)	.312	.334		.376		.916	.604	1.193		1.273

Source: FD Annual reports r/n/a= report not available. NB reports for 2010 and 2011 also not available.

7.2 Plantations

The only data the FD provides on the utilisation and management of Zambia's plantations were regarding the small area of local and regional supply plantations which the FD itself manages, and tends to focus more on seedling production and plantation establishment, than production.

No information was obtained on actual harvesting rates. ZAFFICO is said to able to meet a 380,000 m3 annual demand for industrial roundwood (Zambia Review 2010, 2011). Pines are used for construction and furniture, while eucalypts are used in the mining industry and for transmission poles. However it is clear from trade statistics that a lot of plantation sawn wood and poles is imported from Malawi, South Africa and Zimbabwe (see Section 8 below). Industrial stakeholders express serious concerns about ZAFFICO's failure to expand the plantations, high levels of encroachment and the poor levels of replanting and general management of the existing plantations, especially in light of the rapidly increasing demand for timber (Zambia Review 2010). There is now a strategy to increase replanting from 500 ha/yr to 3,000 ha/year and expand the plantation estate to 85,000 ha by 2020. ZAFFICO is considering selling 20,000 ha of existing plantations to South African interests to fund this.[18]

7.3 Participatory management

In 1998, in response to the on-going failure to manage forest reserves effectively under the traditional top-down command and control model, the government adopted the new Forestry Policy, and then passed the new Forestry Act in 1999. One of their main features was the involvement of communities and other stakeholders in the management of forest resources through "Joint Forest

[17] Using this study's standard conversion factor of 1.8.

[18] Available at: http://www.scribd.com/doc/33903203/Zambia-Review-2010

Management" (JFM). Communities or other organizations could apply to the Minister of MTENR to manage a particular forest, with both the responsibilities and benefits of NTFP management are shared between the community and the FD. JFM was also intended to reduce management costs and fill the void left at field level by the firing of the forest guards in 1997 (Phiri 2005).

Through the Provincial Forestry Action Programme (PFAF I and II) the FD, with the support of FINNIDA, tested JFM approaches in eight sites, in four provinces, during the periods 1995-98 and 2000-05. The objectives were to reduce poverty; protect the environment; advance human rights, democracy and good governance; and promote gender equality. Although the National Forestry Policy provided a supportive framework, because of the failure to commence the Forests Act 1999, JFM has no legal basis from which to operate. Pilot communities were unable to implement the plans they developed jointly with government because there were no provisions to share revenues.

8. The Forest Industry Sector and Domestic Timber Market

8.1 Forest Industry Sector

The development of a forest industry started in 1911 with the installation a sawmill in Mulobezi for processing railway sleepers from *Baikiaea plurijuga* (Zambezi teak) to link the Southern and Copperbelt provinces. The species used by the forest industry at the time were Oregon pine sawnwood and eucalyptus poles (all imported) for mining and construction. Zambezi teak and *Brachystegia* sawnwood was used in the mines as pit props and development of railways lines. During the period when copper production increased in Zambia, the demand for wood also increased.

Under the Highly Indebted Poor Countries (HIPC)structural adjustment programme in the late 1990s, Zambia's economy was liberalised, and foreign investors welcomed into the wood processing sector. The Zambia Development Agency also insisted that foreigners be allowed to have concessions.

Today, the wood working industry, according to ownership, includes the government owned Forestry Department, quasi-government and private. The FD manages the largest natural forest resource while the ZAFFICO manages the forest plantations located in the Copperbelt Province. In addition there are some private forest owners including Ndola Pine Plantations Limited, Copperbelt Forest Company Limited, and Lufwanyama Timber. The following companies were listed by the Zambia Development agency (ZDA, 2009) as major investors in the formal export-oriented forest-based industries sector:

- Setrec Wood and Steel – manufacturers of furniture from local exotic woods from Zambia's natural forests. The major woods used in the production are Mukwa and Rosewood. Pine is also used in production of furniture and construction products depending on customer requirements.
- Wood Processing Industries Limited – manufactures of particleboard, sawn timber, mouldings, doors, plywood, block boards, engineered wood, pine edge glued panels and veneers
- PG Bisonite Zambia Plc - manufacturers of particleboard, sawn timber, timber mouldings and overlaid particleboard.
- Sikale Wood Limited –Specialized in furniture and wood products production in Lusaka and Kaoma District in the Western Province.
- Fallsway Timber Ltd – Integrated timber and wood processing factory. About 85% of the company's products are for export. Investments in machinery – saws, mills & logging equipment, & in sawdust biofuel plant.
- Copperbelt Forestry Company – manufacturers of sawn timber, treated transmission poles, wood furniture, engineered wood products and construction timber

The major processing of forest products is done by sawmills, wood based panel manufacturers, pole treatment and carpentry.

It is estimated that there are over 100 operators of bush type of small scale sawmills and about 10 medium to large sawmills operate in Zambia. Most of the small scale sawmills use plantation roundwood, except pitsawyers who process mainly hardwood. The bushmills use simple and light mobile equipment designed for smaller sized logs, usually old Scandinavian circular saw benches or band saws like the Wood-Mizer, which tend to be stationary, supplying timber to traders who sell to local communities and also export some to neighbouring countries including DRC.

The major companies dry the sawn timber to 12-15% moisture content while the small producers sell their timber without drying, as the demand is there and drying takes time.

There are two mills in Zambia producing particleboards and one mill producing veneer, plywood and blockboards. About 95% of these products are sold in the domestic market and about 5% is exported to the neighbouring countries.

The furniture producers are largely in the informal sector and products are mainly made at household level using simple carpentry tools and wet timber. The informal furniture production is characterised by low skills, limited choice of wood species and low returns, resulting in poor quality products. Larger carpentry items such as tables, kitchen units, doors, windows and quality furniture require investment in tools and machines, something that is lacking.

In addition, the production of woodcrafts takes place in many of the tourist locations in Zambia. In general, this wood carving and crafts industry is at household level with only family members participating. Often women and children participate by sanding and polishing. Wood is harvested by wood crafters and is often illegally obtained. Markets are often by road side and at tourist centres (Ngandwe 2012).

8.2 Domestic market

The proportion of timber harvested that is sold on the domestic market is impossible to determine – as production figures are so inaccurate. Observers state that there is something of a construction boom in high-end housing taking place in Lusaka, and a significant amount of hardwood timber is used for flooring, staircases, kitchens, windows and doors and their frames. In rural areas, house construction still employs pole frameworks, wattle and daub, under thatch roofs.

8.3 Development Programmes

In 2004, the government launched a Forest Development Credit Facility (FDCF) aimed at providing affordable financing to the rural poor in micro, small and medium enterprises in the forestry sector. Funded through the national Poverty Reduction Programme, it aims to ensure the sector makes a significant contribution to poverty alleviation. In 2007, the MTENR expressed worry that out of over ZMK 5 billion (USD 1.28 million) disbursed to 125 applicants under the FDCF only ZMK 480 million (USD 123,000) has so far been repaid[19]. Observers question how many poor people are really benefitting from this fund. The office of the Auditor General reported in 2008 that fake companies have been obtaining credits.

The Ministry of Commerce, Trade and Industry, in its policy of 2010, identified Wood and Wood Products as a priority sector, but their Policy Implementation Plan of 2011 offers more studies than concrete activities and, as yet, nothing appears to have been done.

[19] http://www.lusakatimes.com/2007/12/02/outstanding-fdcf-loans-worry-state/

9. The Timber Trade

The following discussion assumes that the statistics which Zambia provides to the United Nations for inclusion in the database Comtrade are comprehensive and accurate. Any statistics of weight and/or volume which appear anomalous or have not been provided by the source have been revised in this assessment in order better to reflect reality.

Although FAO statistics suggest that Zambia has the largest area of forest of all the countries of this study (49 million hectares) the nature of the forest (and cost of transportation) is such that export-oriented logging – to destinations outside sub-Saharan Africa - is unlikely to be commercially viable, except in relation to some species. Democratic Republic of Congo and, to a lesser extent, South Africa and (increasingly) China are the destinations for most of the timber (predominantly sawn wood) which Zambia exports.

There has been concern that at least some of this trade (mainly serving Chinese and South African interests) is contrary to the ban prohibiting the export of logs from Zambia to other SADC countries. Presumably reflecting that ban, most of the logs which Zambia records as exports are destined for the Democratic Republic of Congo. The volumes exported from Zambia to DRC reached their highest levels between 2008 and 2010.

Figure 6 indicates that Zambia's trade in timber sector products has, in terms of RWE volume, increased 4-5 fold over the last decade. Overall, imports have tended to exceed exports, except for two years of remarkably high exports of sawn timber in 2004-05 (see below for discussion). In terms of value, the export of core VPA products (roundwood, sawnwood, plywood and veneer) exceeds import, but the value of imported paper products has increased four-fold in the last decade and, in 2011, exceeded the total value of all timber sector exports by nearly seven- fold (see Annex 1).

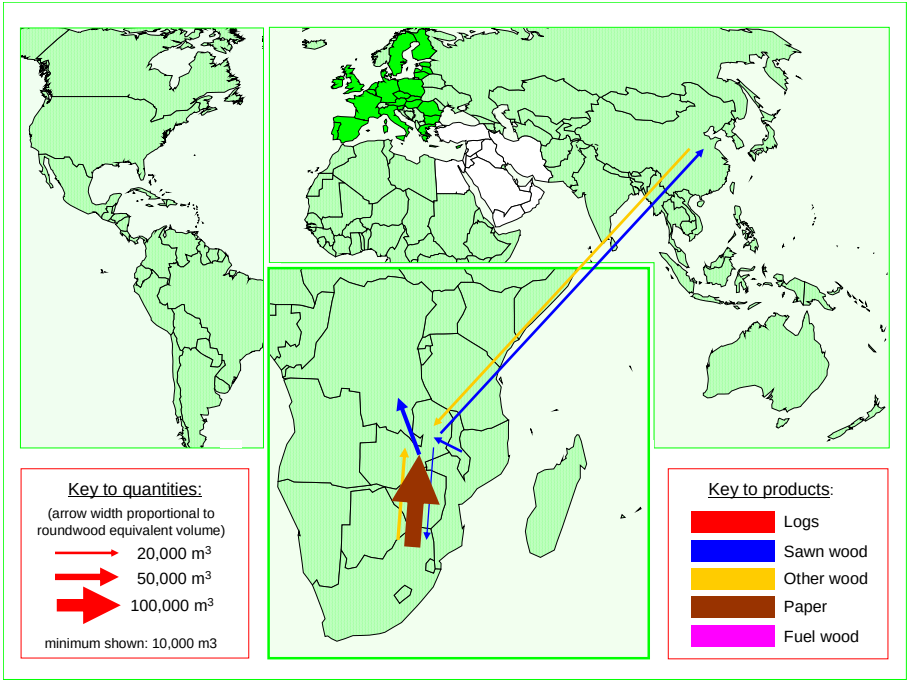


Figure 6 Zambia's trade in wood-based products (2011)

Source: based on UN Comtrade, 2012

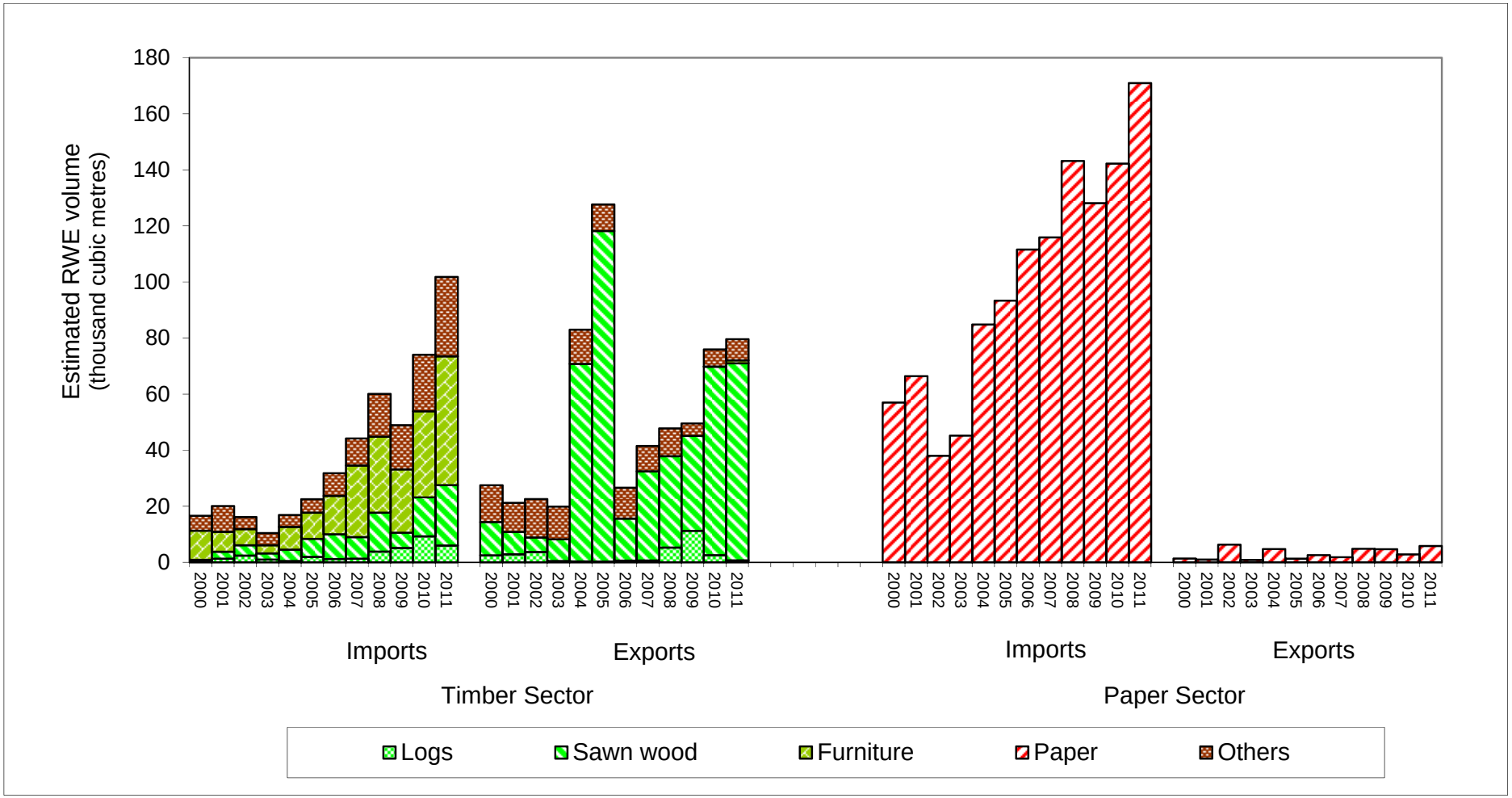


Figure 7 Zambia's trade in wood-based products (by volume, RWE)

Source: based on UN Comtrade, 2012

Figure 6 illustrates the trade flows of Zambia's wood-based products (by RWE) in 2010, indicating that South Africa is Zambia's main trading partner and that more sawn wood is exported to DRC than to China.

The FD reported data on the import and export of timber is presented in Table 13. The figures are dramatically below those reported in the Comtrade data. For instance, according to Comtrade 34,000 m3 of sawn timber was exported in 2009, along with 11,000 m3 of logs, but the FD reports only 8,354 m3 in total. There is no information on species, and figures are typically broken down into used railway sleepers and sawn timber. Most years, no data or incomplete data are reported. Data are not presented in a standard format to permit comparisons between years, and are often internally inconsistent.

Table 13 Forest Department Data on Zambia's import and export of timber (m^3)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Import	?	1437	?		r/n/a	?	?		r/n/a	
Export – unspecified	5,327	449	6,963	5,237		?	?			8,354
indigenous								40,171		
plantation								2,029		

Source: FD Annual Reports

9.1 Exports

Zambia's export of wood based products is shaped by its geographic position as a land-locked country. Although many of its species are in demand on Asian markets, much of Zambia's valuable hardwood timber is traded on regional markets. For export to Asia, ports and border crossings used include Walvis Bay (Namibia) via Sesheke, Dar es Salaam (Tanzania) via Nakonde, Beira and Nacala (Mozambique) via Chipata or Chirundu and Durban (South Africa) via Livingstone. Most timber gets cleared for export through Lusaka, so the routes to Beira and Durban are the most used. Although there is a rail link between Lusaka and Dar es Salaam, timber is usually taken by road, because it is much quicker.

Table 14 presents FD data on the export of hardwoods from Zambia, according to species and country of destination, illustrating the growing importance of China as an importer since 2007, and their focus on rosewood and mopane. However, the figures for total volume are an order of magnitude lower than those available through Comtrade (see Figure in Annex 1) and trade with DRC does not appear at all.

The Comtrade data on the volume, value and country of destination of Zambia's export of core VPA products (logs, sawn timber, veneer and plywood) over the last 11 years is shown in Figure 8. This illustrates the steady sustained trade with South Africa and the advent of DRC and China as export partners from 2005 and 2007 respectively. These countries account for most of the increased trade since 2006. Export to the 27 EU countries has been negligible.

There is a small volume of trade to EU-27 countries in carvings and curios, which are almost certainly made of illegal timber.

Annex 1 illustrates a dramatic spike in the export of sawn timber and logs to South Africa and DRC in 2004 and 2005. FD staff was not able to explain which species were involved or the end use, but other observers suggested that this export coincided with the opening of new mines in southern DRC, and might actually reflect the re-export of products from South Africa or Malawi, although the

figures in Annexes do not support this theory. Despite the ban on the export of logs, some 19,000 m^3 was exported in the three years to 2010, nearly all to DRC. China's counterpart data indicate that about 1,000 m^3 of logs have been imported annually from Zambia since 2005.

Table 14 Forestry Department Data on Export of Hardwoods 2010-2011 (m3), by species and country of destination

Year/Destination	Guibourtia (rosewood)	Pterocarpus (mukwa)	Afzelia (mupapa)	Baikiaea (teak)	Colophospermum (Mopane)	Combretum (mubimba)	Assorted Timber	Totals
2010								
China	1102	20			621		500	2243
RSA	740							740
Taiwan	270							270
Total 2010	*2112*	*20*			*621*		*500*	*3253*
2011								
China	3706				329	27		4062
India	17	9		14				40
Kenya		10	10					20
RSA	437	23		13				473
Taiwan	843	5						848
Total 2011	*5003*	*47*			*329*			*5443*
TOTAL 2010+2011	**7115**	**67**	**10**	**27**	**950**	**27**	**500**	**8696**

Source: Forest Department (year: unpublished)

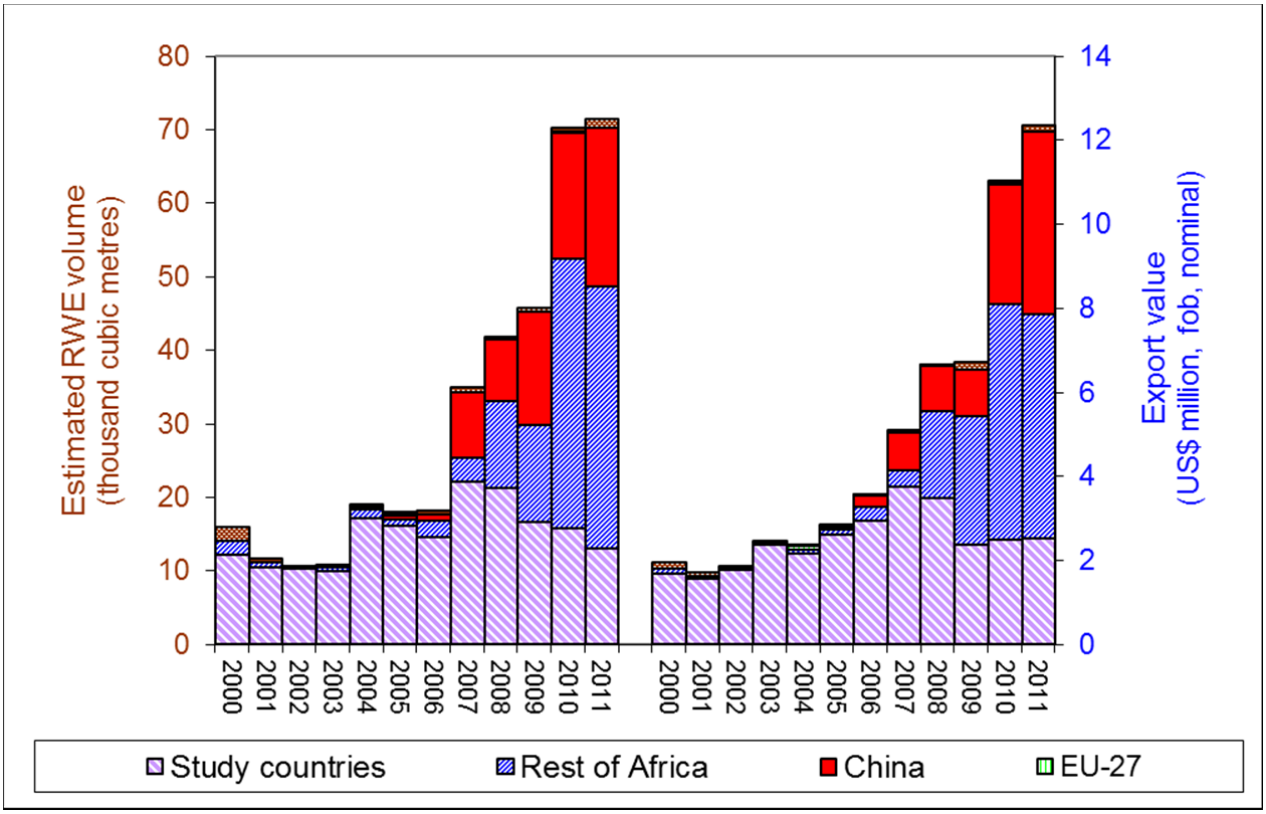


Figure 8 Zambia's export of core VPA products 2000-2011 by destination country/region

Source: UN Comtrade, 2012

9.2 Imports

Zambia's imports of wood-based products are dominated by coniferous sawn timber from Malawi, and paper products from South Africa, both of which have increased dramatically in volume and value over the last decade. Wood-based furniture, mainly from China, South Africa and the UAE, and logs almost all in the form of treated coniferous wood, probably poles, from South Africa and Zimbabwe, are also important.

10. Trends and Key Issues

There are insufficient data to identify and analyse trends in Zambia's forest sector, but it is very clear that forest degradation is continuing, exploitation of valuable hardwoods is on the increase and that forest governance continues to be extremely weak. There are many important issues, bulleted here and discussed above.

10.1 Legal and Policy Framework

- Failure to implement the Forest Act 1999, and retrograde aspects of the new Draft Forests Act
- Lack of legal basis for community participation and joint forest management
- Short-term, unrealistic and centralised licensing
- Centralised decision-making
- Fees and fines last updated in 2003
- FD focus on revenue not sustainability
- Lack of strategic support for SME's and value addition

10.2 Administrative Issues

- Lack of competent and strategic leadership in the FD
- Inadequate central government funding for forestry, especially indigenous forest management
- Lack of awareness or acknowledgement of the forest governance crisis by senior forestry officials
- Issuing licences in excess of the number the FD is capable of supervising
- Capacity issues, particularly lack of forest guards
- Poor information management and reporting, including on forest industry
- Interference and commercial involvement of politicians and government officials in the sector
- Lack of political will to reform the forestry sector (eg create the Forestry Commission)
- Lack of coordination and cooperation amongst the different agencies involved in NRM.

10.3 Technical Issues

- Lack of management plans and spatial and volume controls on harvesting
- Lack of Harvesting Inventory
- Failure to establish annual allowable cuts
- Lack of reporting, management and analysis of data for law enforcement, strategic planning and improved forest management

10.4 Law Enforcement

- Logging without appropriate operational (casual, pitsaw, concession) or production licence
- Use of chainsaws under pit-sawing licences
- Harvesting in excess of licensed volumes or species
- Unidentified people participating in group pitsawing licences
- Export of raw logs
- Export of undeclared timber
- On-going deforestation and forest degradation – shifting cultivation, charcoal production, land clearance and conversion, highest in Africa
- Bribery of government officials at all levels.

11. Anecdotal information on volumes of undocumented and illegal harvesting and trade, major types of illegal logging cases

11.1 Previous studies and media reports

A CIFOR study (German et al, 2011) examined exploitation of Miombo forests in Zambia and reported several instances of dubious practice:

- Concession companies in Western Province reported logging only 4101 m3 in 2010, below the minimum legal requirement of 6600 m3, under Chapter 19 of the Forest Act (see also Section 6.1).
- Several Chinese companies were found to be purchasing timber wholly or in part from unlicensed pit-sawyers, sponsoring pit-sawyers, or even harvesting timber using pit-sawing licences.
- At a border point, cants (roughly squared off logs) were found hidden under sawn timber in containers of the Chinese company Fly Dragon. Export of logs, both indigenous and softwood, is prohibited under the 1997 Forest (Timber Export) Regulations. Poorly remunerated and easily bribed officers of the responsible agencies at border points are behind this kind of traffic.

The study concluded that more research was needed to substantiate and quantify these cases, since, as yet, insufficient evidence is available to draw clear conclusions.

The UN-REDD National Project document reports that there are serious accountability problems in the forest sector, and that under 10% of revenues are collected, concessions are abused, and illegal logging is rife. (UN-REDD NPD 2010)

A recent study summarised the situation appropriately:

"There is an absence of forest management planning at all levels in Zambia and participatory forest management is not supported by legislation. Most forests are managed either without any management plans or under out-dated plans. There is no strategic planning at national, district or provincial level by the government. Joint forest management can only be piloted but not implemented because there is no legal foundation for such planning. The 1999 Forest Act and its revised version have still not been approved by Cabinet and Parliament, the Forest Department continues to operate under the 1973 policy and legal framework. The only management tool apparently utilized by the Forest Department in local and national forests has been licensing" (anonymous, personal communication).

Licensing, in turn, has been criticized for its low fees, and more recently, its illicit practices.

A Lusaka Times article reports on illegal loggers from Tanzania, operating over the border in the Eastern Province[20]. Timber was being cut from the three chiefdoms and being transported back into Tanzania via Isoka and Nakonde on a daily basis. Volumes are not mentioned. A District Forest crack team was said to have been formed specifically to monitor and curb illegal timber dealers but nothing had happened because of a lack of funds and transport. This transboundary illegal logging by Tanzanians mirrors what is happening in northern Mozambique.

The internet has numerous stories of corruption relating to the import of eucalyptus trees as transmission poles, when supplies are supposedly available in Zambia. People speculate that the plantation sector has been run down over the years to facilitate scams on the import of plantation timber from Malawi, Zimbabwe and RSA.

[20] http://www.illegal-logging.info/item_single.php?it_id=3466&it=news

Another recent study by a Zambian forester summarise the situation thus:

"Contrary to the Forestry Department's mantra that inadequate financial outlays and field personnel have been the major factors contribution to forest degradation, this study has found that the problem is managerial incompetence, manifested in lack of visionary leadership, the practice of cronyism and clientelism, the breakdown in social capital support, including support by local Chief and the poor quality of political connection between department managers and the larger political system." (Makano 2008).

11.2 Legislation

The purpose of the National Forestry Policy of 1998 was largely to address illegal activities in the forest sector, although the extent of the problem was never quantified. The Timber Export Regulations of 1997 were introduced primarily to combat illegal logging for the export market, which was denying the government much needed revenues and constraining the capitalisation of forest industry (GRZ 1998).

The Draft Forestry Act will make it an offence to mixing hammer-marked and unmarked wood products in single consignments, indicating that this practice is common.

11.3 Statistics

There are big discrepancies between FD and Comtrade data on timber export, pointing to lack of capacity or deception (see above Section 8). "Mirror statistics" also show discrepancies. China reports the importation of logs from Zambia (although only 1-2000 m3/yr), but Zambia reports no export of logs to China.

11.4 Observation

A visit to the Buseko Market – the largest market for domestic timber products – revealed the overwhelming majority of logs and timber did not bear any hammer marks, suggesting the domestic trade is largely illegal.

11.5 Anecdotes from stakeholders

In Sesheke District (Western Province) South African traders based in Namibia, the Permanent Secretary of the MTENR under the previous government was fired following her attempt to crack down on corrupt junior staff at provincial level. The implications were that the Vice President, who had his own forestry enterprise, was involved in these illegal operations.

Local forest guards fired in 1997, faced unemployment and many went into logging.

It is rumoured that Chinese timber dealers have sponsored the illegal logging of Mopane in the Lower Zambezi National Park, resulting in the near elimination of this species. It is said to be trucked over the border at into Mozambique out to China through the port of Beira. This may account for the high volumes of timber in log parks near Beira, reported in the Mozambique country study.

The requirements to obtain different letters of consent gives considerable power to local chiefs, councils and provincial forestry staff, and it is apparently common practice for fees or bribes to be paid at all these levels, and particularly to the chiefs. It is said that few chiefs share the revenues thus obtained with their communities.

Zambia Wildlife Authority staff in Kafue National Park operates roadblocks along the Great West Road (M9) which transects the park between Lusaka and Mongu.

In summary, the main types of illegal activity include:

- Officials, chiefs and others demanding bribes from forest operators wanting to obtain licences, or exporters wanting to export timber, or people who have committed violations of forest law

- Harvesting without an operational licence or harvesting licence, in excess of licence, outside designated areas, beyond the time-limit, or for species not on a licence.
- Foreigners obtaining pit-sawing licences.
- Un-identified individuals operating under group pit-sawing licences
- Transporting timber without a conveyance licence, or reuse of conveyance licences
- Exporting of logs (especially mixed amongst sawn timber in containers)
- Unauthorised export of timber
- Unauthorised use of FD marking hammers

12. Stakeholder perceptions of illegal logging, challenges and the way forward

The forest governance crisis in Zambia has been well-known by most stakeholders for decades, but remains essentially unaddressed. Most people interviewed cited corruption, and the lack of capacity, leadership and commitment at senior levels in the FD and Ministries as the fundamental reason for this.

The lack of monitoring and transparency in the sector is widely criticised. Nowhere is up-to-date and accurate information available on the forest sector, on which medium-long term enterprise planning or donor assistance can be based. This creates the impression that illegal activities are being disguised.

Stakeholders in forest industry call for the reform of the forestry sector, to combat complacency and centralisation and establish efficient and sustainable management of the resource, for the benefit of Zambian people, rather than foreign investors. It is particularly important to develop strong leadership and commitment to sustainability and value addition at the National level, and hands-on technical supervision of operations at the Province and District levels.

Industrial operators complain that the government has changed regulations to benefit foreign investors. For instance, investors lobbied the government to permit sawmills without having a concession – enabling them simply to buy logs. This has stimulated villagers to cut logs anywhere – both open and forest reserves. The District Forest Office staff are said to facilitate this. Several junior officers have been arrested and either lost jobs or gone to jail. The local operators want the regulations reinstated.

Independent monitoring of customs procedures border points was mentioned as one way to overcome bribery of responsible officials, which facilitates illegal export of timber.

Some Chinese and South African operators were broadly criticised for their bad practices – ranging from ignorance of basic forest operations, to poaching trained personnel of other companies, and only experienced foresters should be given concession licences.

Several forest officers interviewed for this study decried the lack of volume control, and thought there should be a complete moratorium on logging until the resource has adequately assessed, and annual allowable cuts established for the main commercial species. A return to local licensing was also advocated, and the establishment of local committees to issue licences and control harvest. A German project in the Northwest Province did this back in the 1970s, and it worked very well.

Government policy sets limits on the number of concession licences that should be issued in any one province at two, reflecting FD capacity to monitor activities. Forest officers also mentioned that enforcing this regulation would be very helpful in the short-term.

The FAO funded Forest Governance Monitoring project (see above 4.12) surveyed stakeholder perceptions of corrupt and bad practices in the forest sector and the responses are summarised in Table 15.

Table 15 Stakeholder Perceptions of Corruption and Bad Practice in the Forest Sector

Level	Details of Corruption and Bad Practice
National	• Bribes to politicians and public officers to facilitate issuance of licences and export of timber products – due to poor conditions for public workers and kick-backs for politicians. • Bribes to public officers responsive for forest protection, to ignore violations of forest laws • Political pressure, patronage and bribing public officials to recommend de-gazetting of a forest reserve to pave the way for industrial and housing schemes (Multi-Facility Economic Zone in Lusaka South)
Provincial and District	• Bribes to public officers for issuance of conveyance licence, or its extension. • Bribes to public and district council officers to ignore violation of forest laws and levies imposed on harvesting and conveyance of natural resources.
Local community	• Bribes to councillors, chiefs, headmen to obtain recommendations for licences and ignore violation of forest laws • Local people clear forests for charcoal production, purporting they are opening land for agricultural production • Charcoal traders and transporters bribe village headmen to clear forests for the production of charcoal for the market.

Source: Sekeleti 2011

13. Conclusions and Recommendations

13.1 Conclusions

In Zambia, the three pillars of forest governance: the legislative and regulatory framework; planning and decision-making processes; and law enforcement are all very weak, and have been so for well over a decade. Although ultimately, this is results from the lack of political will, corruption and collusion, more immediately, there is a very serious a lack of the fundamental information and forest management systems and practices needed to manage Zambia's forests legally and sustainably for the benefit of the nation and a lack of management commitment to obtain it. This is in spite of the many competent and committed people staffing the FD at different levels, and international donors willing to support the capacity building process. Root and branch internal reforms of the FD are urgently needed.

A FLEGT VPA, however, is probably not the appropriate instrument to accelerate this reform. Although the civil society platform that VPA negotiation requires could promote greater transparency and public participation and scrutiny, ultimately, the EU has negligible direct trade in wood-based products with Zambia, so there would be no real leverage for any proposed reforms. Furthermore, as in Mozambique, the forestry administration and other government departments would not be credible guardians of a national timber legality assurance system. Finally, as very little (if any) of the timber which Zambia exports to countries other than the EU (notably to China) is likely to reach the EU from those other countries, the EU Timber Regulation will also not have much traction.

The EU and other international donors could help promote reforms in other ways. The forest governance and illegal logging situation in Zambia remains poorly understood, as the enormous gaps and inconsistencies in the data presented in this report indicate. It is very unclear how much revenue the GRZ is losing through the current practices. Donors could support a more detailed and independent collation, audit and analysis of existing FD data, from districts to headquarters and the development of more effective and transparent data management systems. A mandate from Central Government would be needed to legitimise the exercise, and ensure access to data from the FD and other government departments, notably Zambia Revenue Authority, Customs, PACRA and the local authorities. There are some indications that the new Government may cooperate, particularly if the losses to the government's revenue from the legacy of poor forest governance inherited from the previous government can be documented.

The key problems of forest governance need to be addressed head on when preparing development assistance programmes for the forest sector, and not masked by technical interventions. Attention should be focused on the key indigenous timber producing provinces and districts; internationally-staffed independent forest monitoring should be instituted, and local NGOs trained up to take over. The sustainability issues urgently need to be addressed, through timber inventories and management plans, and through policy revision to extend the commercial licensing periods and concession areas to provide operators and communities with incentives for long-term sustainable management. Continued funding for any forest sector support should be conditional on demonstrable improvements to forest governance.

Zambia is a land-locked country and its timber trade, both legal and illegal, depends on accessing ports in neighbouring countries. The roles of Mozambique, Tanzania and South Africa as conduits and/or markets for Zambia's illegal timber, and the customs processes at the different border points also merit examination, to better understand and address this regional dimension of the problem.

13.2 Recommendations:

To GRZ:

- Build on the Minister's forest policy initiatives of November 2012 (see 5.1.2) to institute thorough reform of the forest sector.
- Commission and publish a detailed and forensic independent review of the forest sector, through the whole supply chain, addressing issues raised in Section 9 above.
- Work to assemble and collate all available forestry information from the districts for the last 15 years to try to understand what has been happening in the sector, and to establish a proper information management system.
- Examine appropriate funding of the FD, including revision of fees and fines, and capacity problems, especially the lack of forest guards
- Hold a public consultation on the Draft Forests Act.
- Treat illegal logging and timber trade and corruption as criminal offences.
- Implement the legislation fully enacting community-based forestry and joint forest management
- Support work to establish annual allowable cuts for each timber species in every forest district and ensure that annual licensing does not exceed it.
- Commission study of the domestic timber market with objective of legalising it and making it sustainable.
- Prohibit involvement of government officers and politicians in the forest sector.
- Establish an FD website where all information on annual allowable cuts, forest areas, licensed operators, harvesting rates, processing and export is made publically available
- Insist the FD produces full and publically available reports on an annual basis.
- Commission independent forest monitoring, by reputable international organisation including monitoring of key customs check points.

To EU and other donors:

- Support real reforms and essential tasks in the forest sector (including above) on a results basis.
- Support study of the role of Mozambique, South Africa, Kenya and Tanzania as consumers or conduits of illegal timber from Zambia.
- Support NGOs and civil society in independent forest monitoring

To NGOs, academia and civil society:

- Strengthen advocacy against illegal logging and for improved forest governance, demanding transparency and accountability from the FD and GRZ.
- Study of the domestic timber market

To the Government of China:

- Establish preferential tariffs (no tariffs) on fully-processed and semi-manufactured timber products from Zambia (and other countries) that have been struggling with illegal export to China.
- Prohibit the import of illegal timber, starting with state-owned forestry enterprises and their subsidiaries, including forest product importers to prohibit illegal trade and import of illegal timber.

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Annexes

Annex 1 Zambia's trade in selected groups of wood-based product (Source: UNComtrade 2012, by partner country)

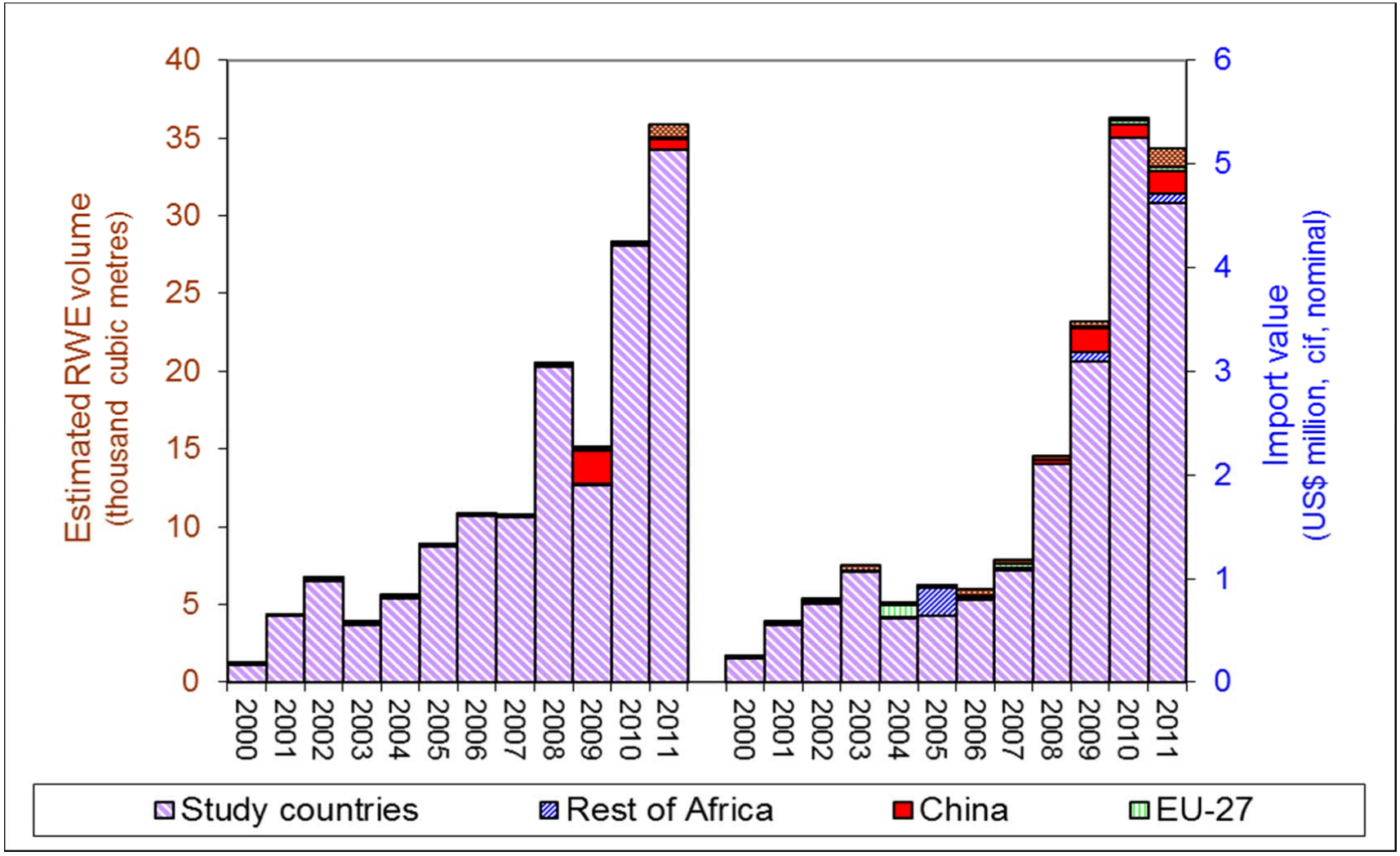

Figure 9 Zambia's imports of VPA core products (roundwood, sawnwood, plywood & venner)

Source: UN Comrade, 2012

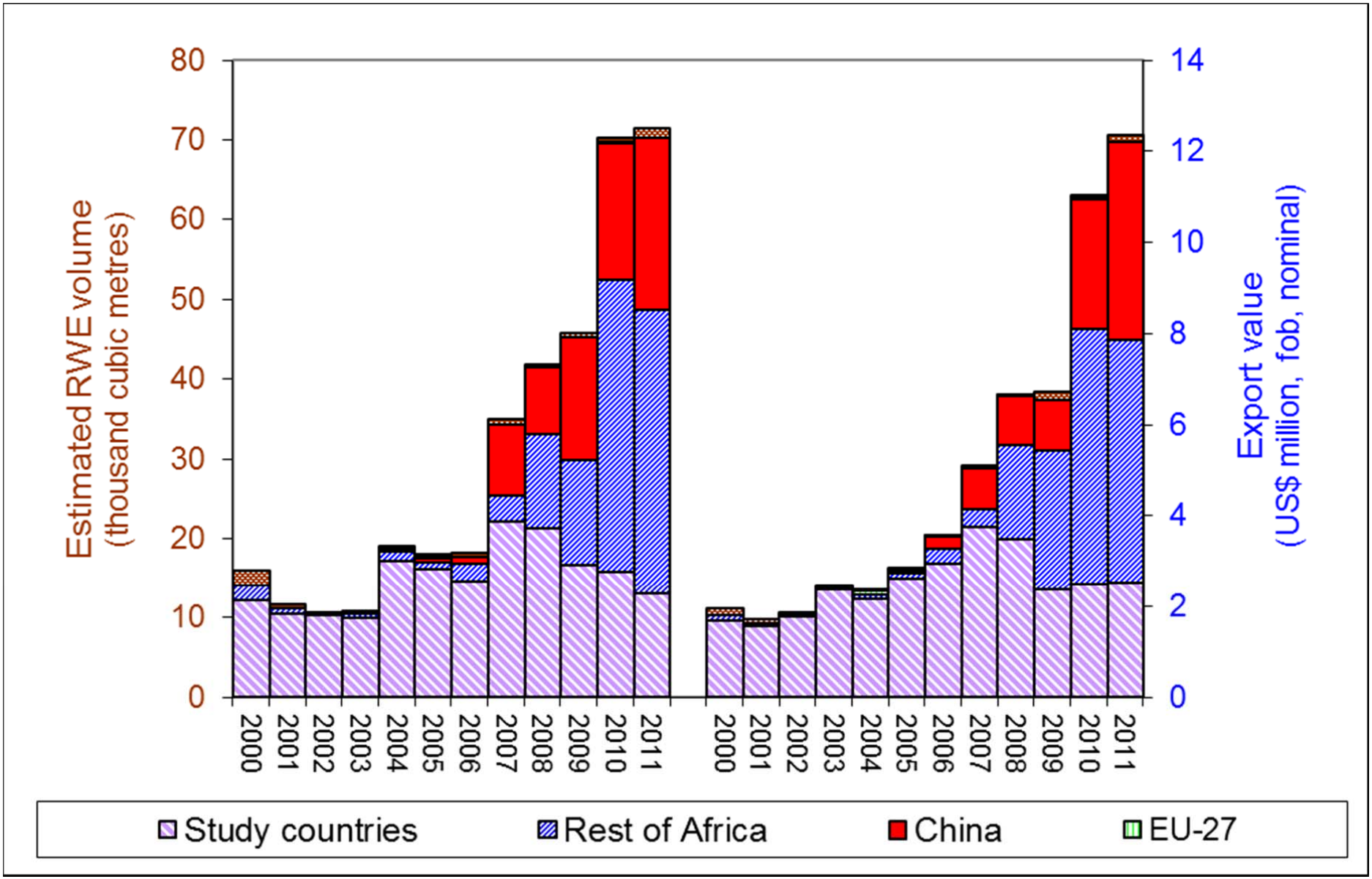

Figure 10 Zambia's exports of VPA core products (roundwood, sawnwood, plywood & venner)

Source: UN Comrade, 2012

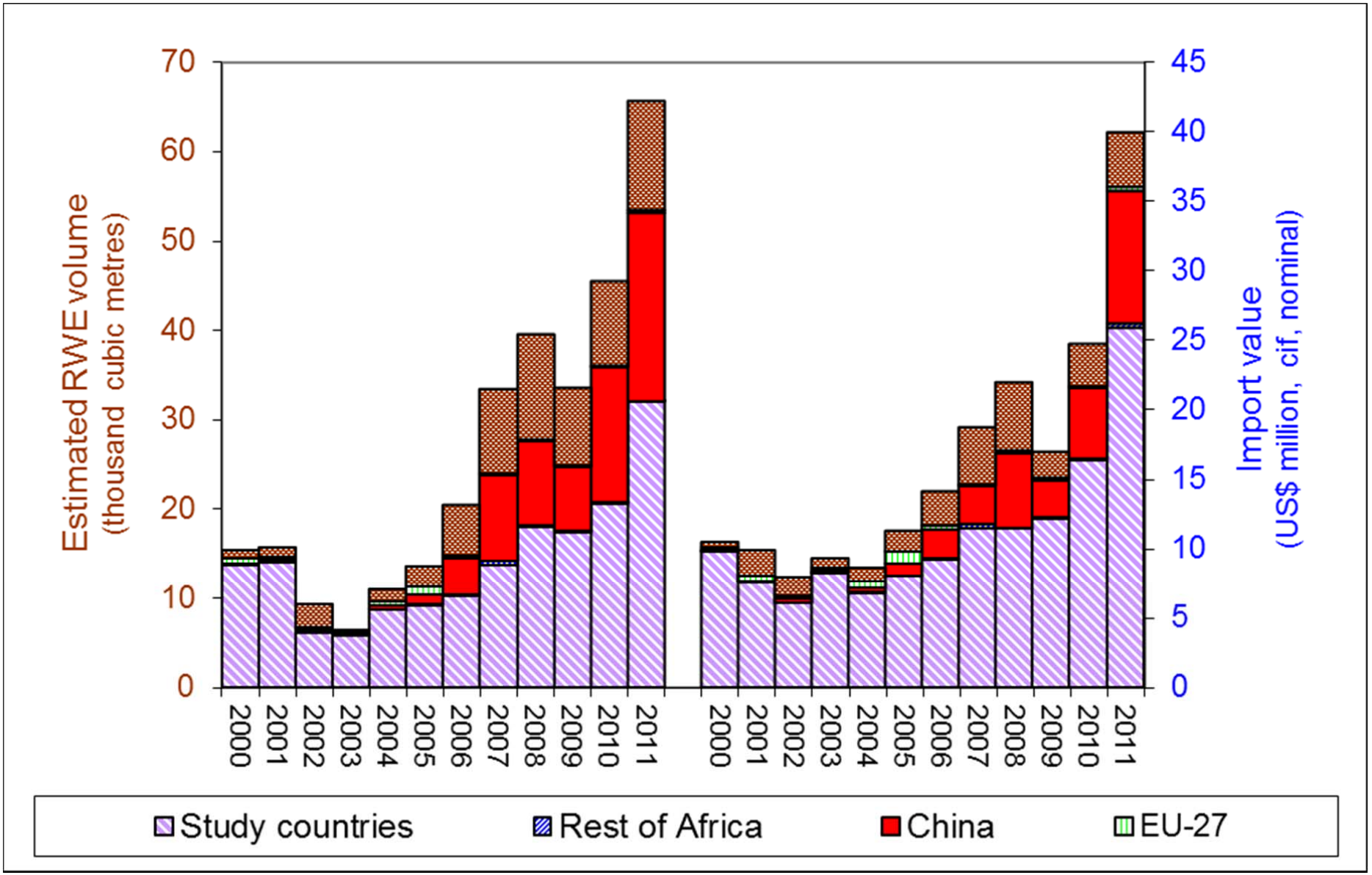

Figure 11 Zambia's imports of other Timber Sector products

Source: UN Comrade, 2012

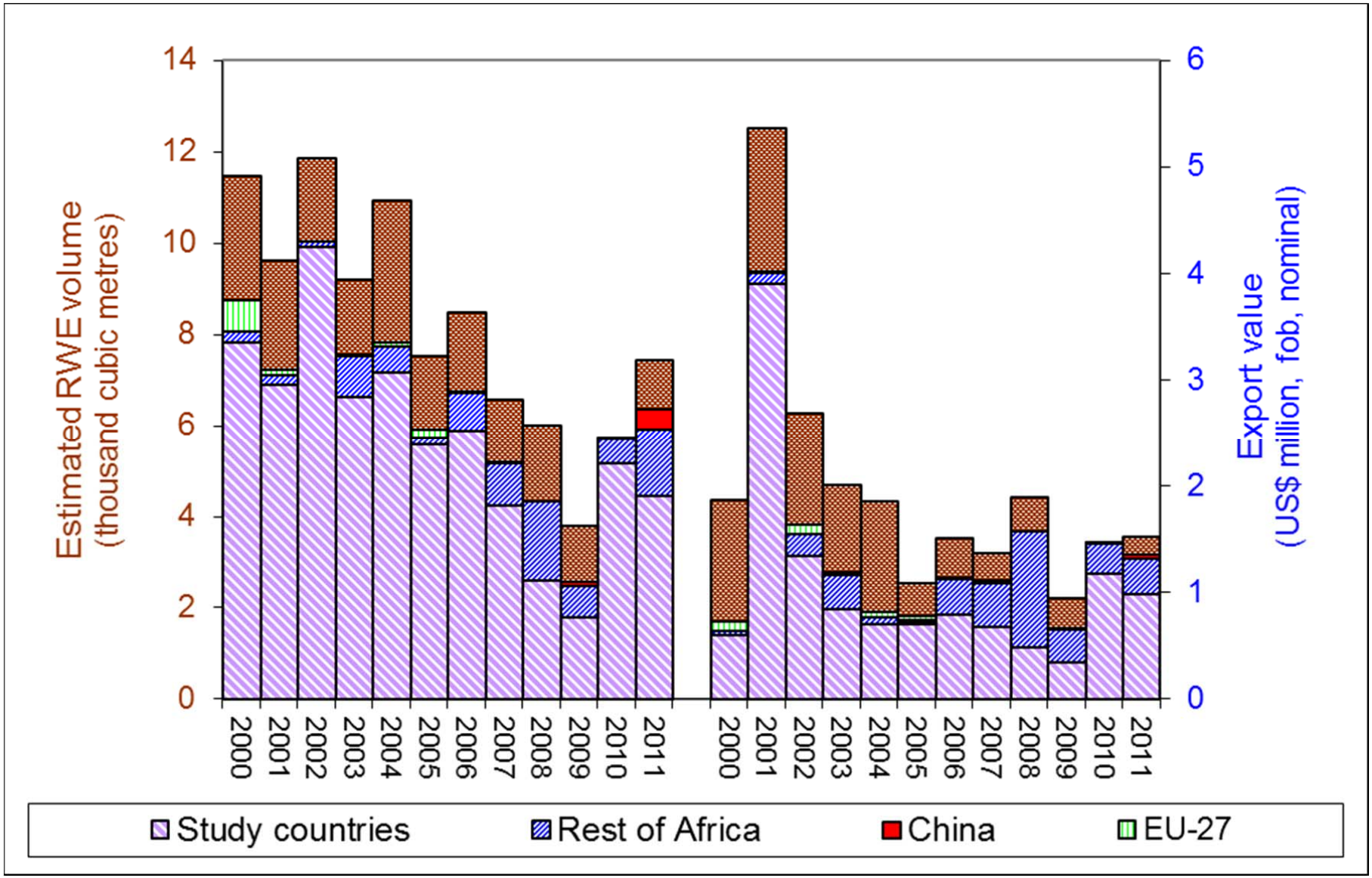

Figure 12 Zambia's exports of other Timber Sector products

Source: UN Comrade, 2012

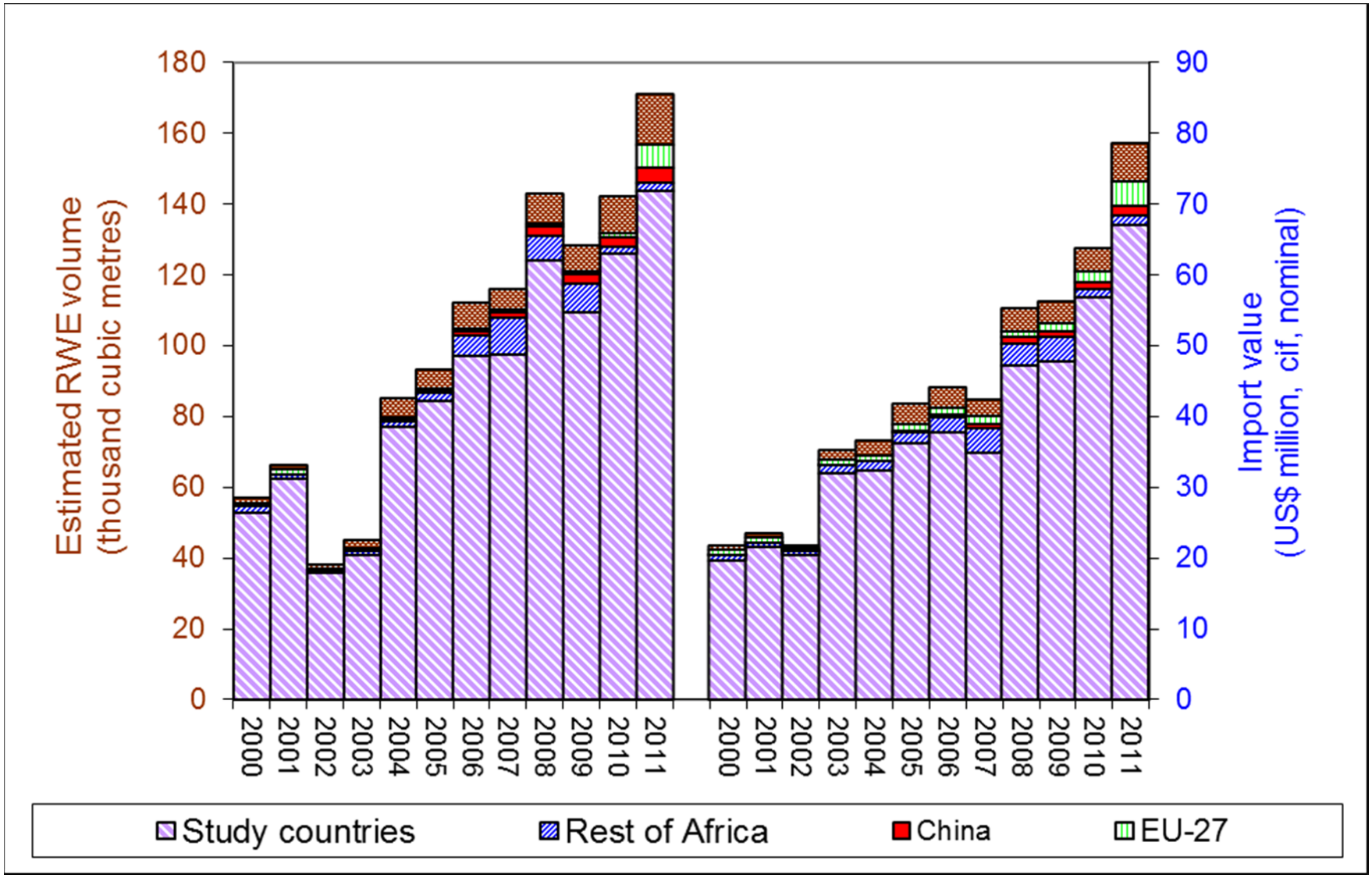

Figure 13 Zambia's imports of Paper Sector products

Source: UN Comrade, 2012

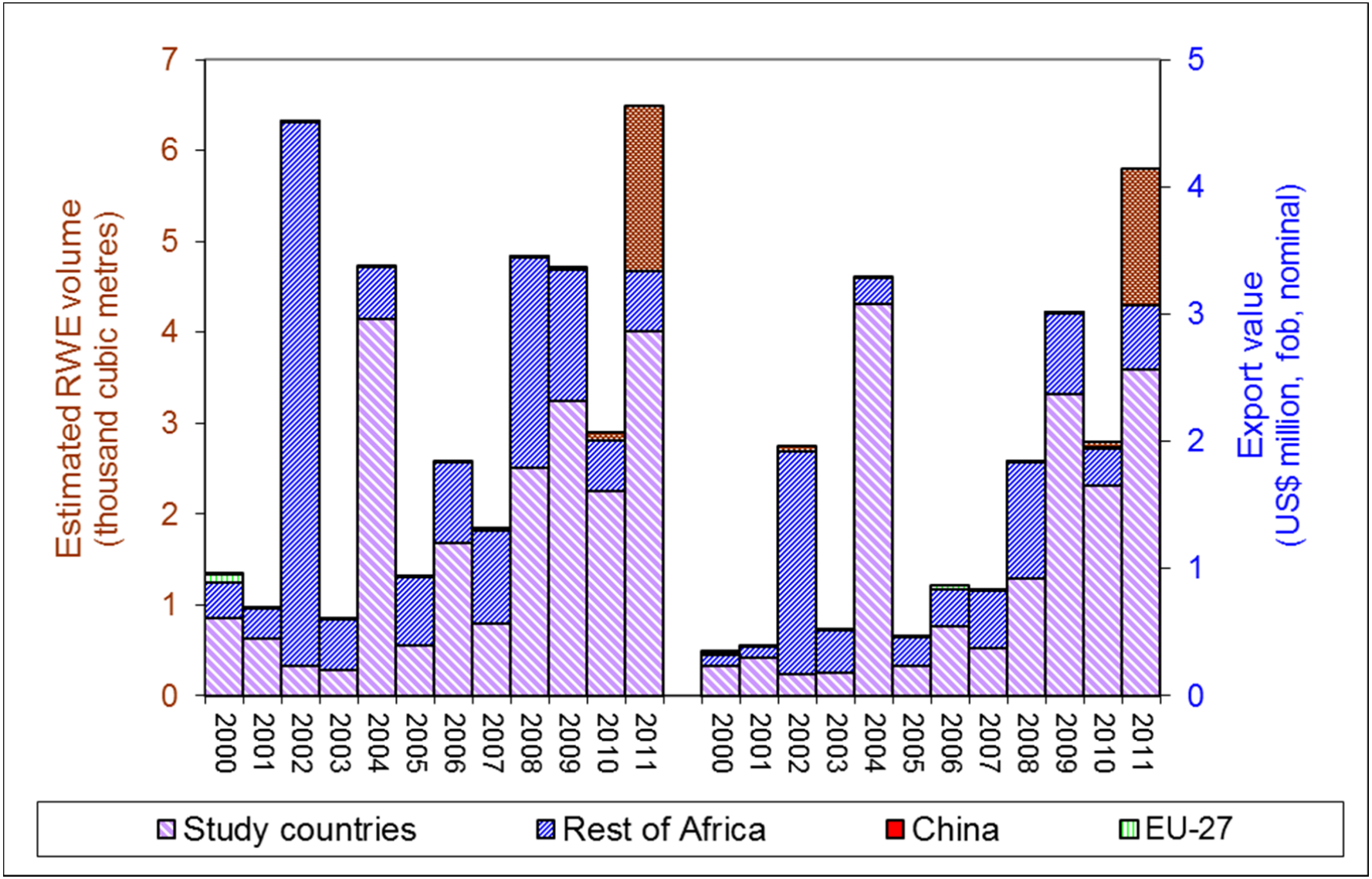

Figure 14 Zambia's exports of Paper Sector products

Source: UN Comrade, 2012

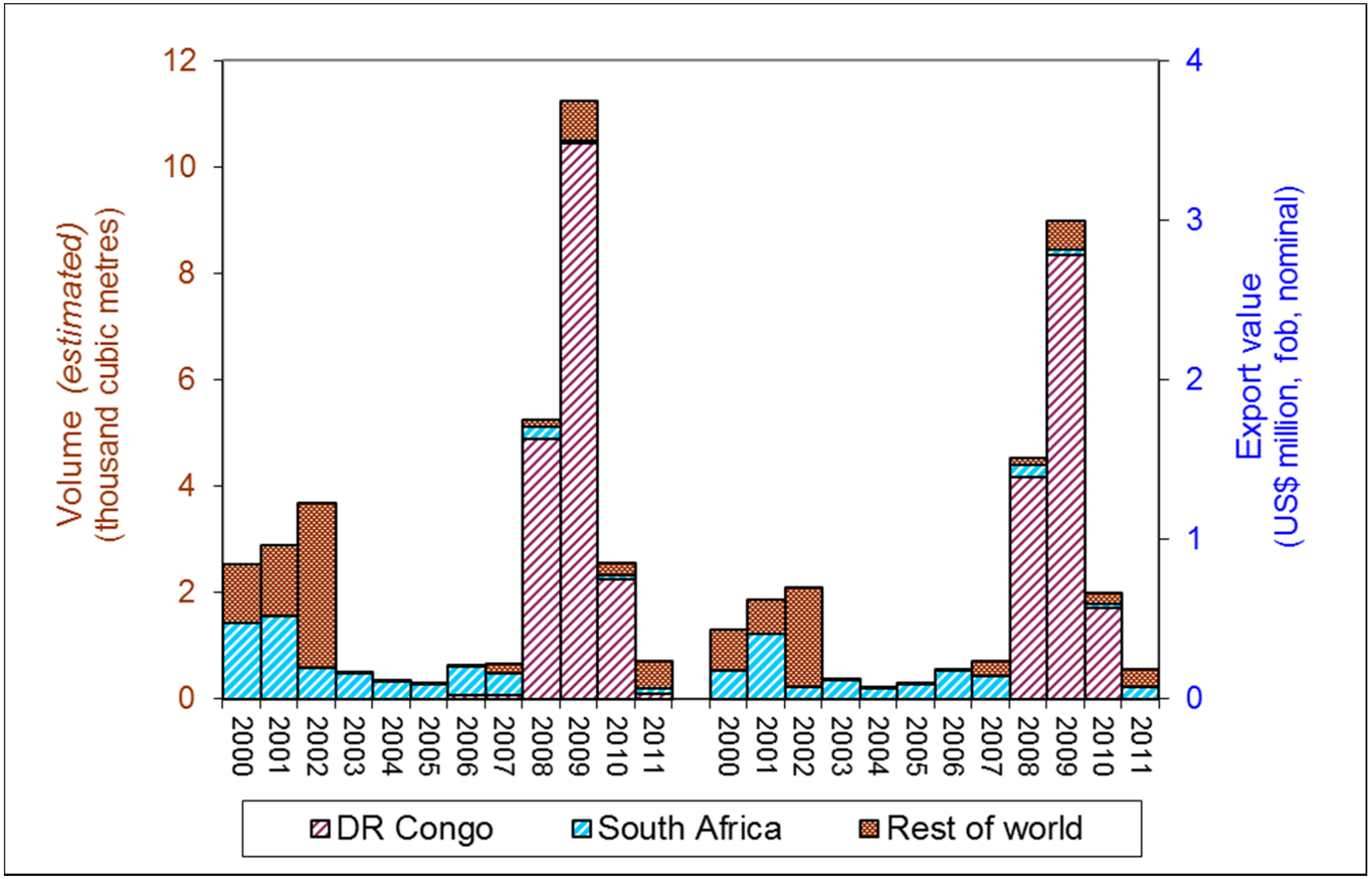

Figure 15 Zambia's exports of logs

Source: UN Comrade, 2012

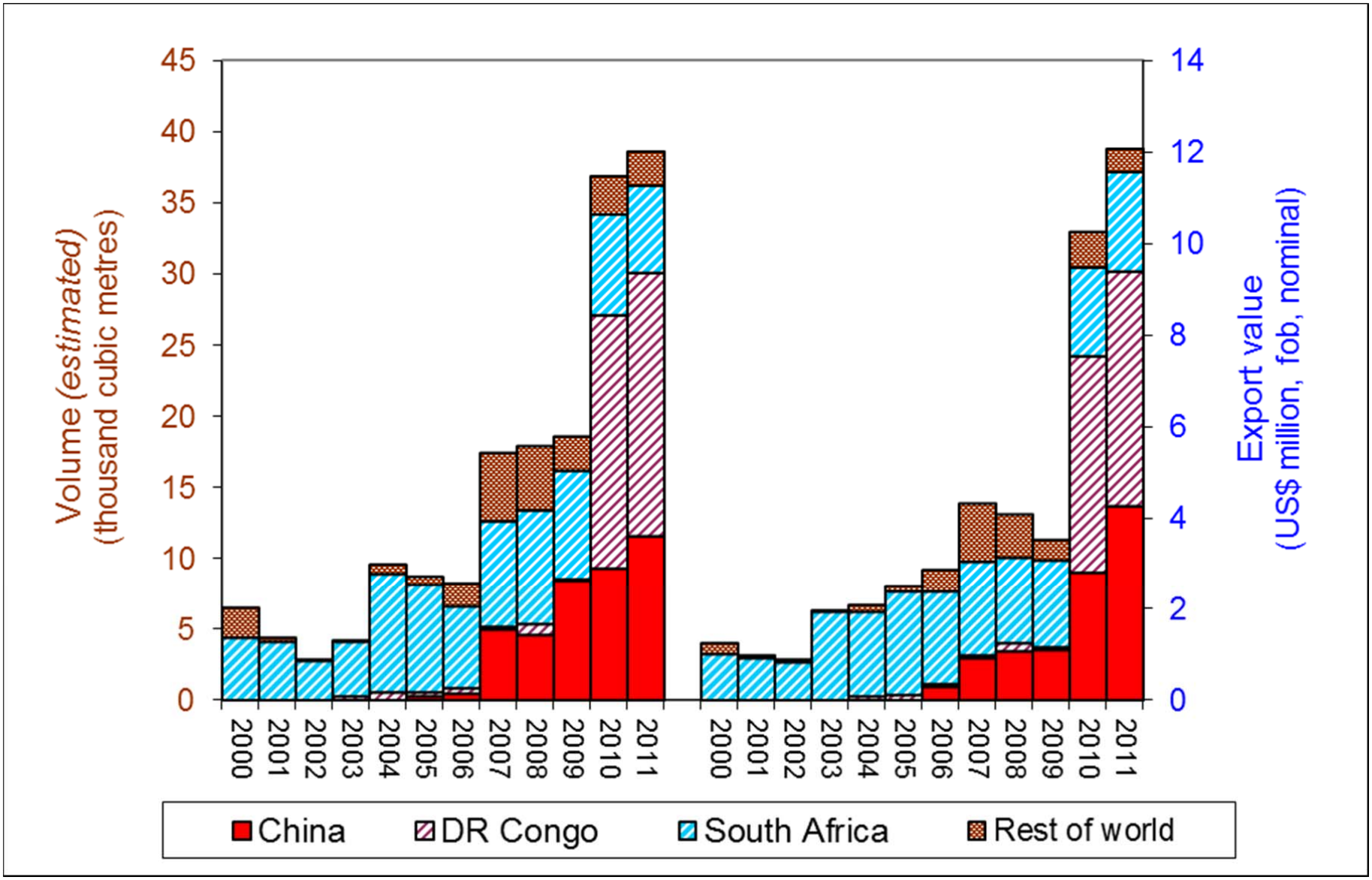

Figure 16 Zambia's exports of sawn wood

Source: UN Comrade, 2012

Annex 2 Value and uses of important target species in Zambia

Name of species	Value code	Present, future or potential use											
		ti	po	wo	nw	pu	fo	fd	sh	ag	co	am	others
1. Afzelia quanzensis	1	X							X				
2. Baikiaea plurijuga	1	X			X								flooring
3. Berchemia discolor	2	X			X								
4. Brachystegia species	1	X	X	X	X								
5.Dalbergia melanoxylon	1												Turnery, carving
6. Brachstegia spiciformis	1	X		X	X								
7. Brachystegia utilis	1	X			X								
8. Diospyros mespiliformis	1	X			X		X						
9. Eucalyptus species	1	X	X	X	X								
10. Encepharlatos goetzi	1						X						
11. Faurea saligna	2	X			X								
12. Faldherbia albida	1		X	X			X	X	X				
13. Guibortia coleosperma	1	X			X								
14. Isoberlinia angolensis	1	X			X								
15. Julbernardia paniculata	1	X	X	X	X			X					
16. Julbernardia globiflora	2				X								
17. Khaya anthotheca	1	X			X			X	X			X	
18. Parinari curatellifolia	1			X			X						
19. Pine species	1	X		X	X	X							
20. Podocarpus milanjianus	1												mortars, canoes
22. Pterocarpus angolensis	1	X			X								
23. Strychnos cocculoides	1						X						
24. Sesbania sesban	1							X		X			
25. Swartzia madagascariensis	2				X			X					
26. Tamarindus indica	1	X			X		X				X		
27. Uapaca kirkiana	1						X						

Utilization

ag agroforestry systems

am amenity, aesthetic, ethical values

co soil and water conservation

nw non wood products (gums, resins, medicines, dyes, tannins, etc.)

fo food

fd fodder

po posts, poles, roundwood

pu pulp and paper

sh shade, shelter

ti timber production

wo fuelwood, charcoal

xx other