

## **An overview of the problems faced by Mozambique's forests, forest-dependent peoples and forest workers**

Mozambique is a country rich in forest resources, with a total forest area of approximately 40.6 million hectares and 14.7 million hectares of other wooded areas (DNTF, 2007). Most provinces have vast areas of unspoiled, beautiful forests, from where rural communities acquire several goods for subsistence as well as for cultural and spiritual reasons. Forest diversity is however poorly documented due to several reasons such as the vastness of the country, poor transport network, the long-lasting civil war, and the general lack of human and financial resources.

Productive forests (forest areas demarcated for the production and exploitation of wood) cover about 26.9 million hectares, while 13 million hectares have been defined as areas not suitable for the production of wood, where most of the National Parks and Forest Reserves are situated. The forests that have some sort of legal protection or conservation status cover some 22% of the total forest cover of Mozambique.

The most extensive forest type – occupying approximately two thirds of the country - is the so called **Miombo Forest**, where dominant species such as *Brachystegia spiciformis* often mixed with *Jubernardia globiflora* occur, associated with a variety of other plant species.

This type of forest occupies vast areas in the central and northern regions of Mozambique. It is estimated that there are approximately 334 tree species in the Mozambican Miombo forests. Endemism and fauna diversity are low, perhaps due to the long dry period and intense fires which occur in these forests.

Some of the most important rivers in Mozambique occur in regions covered by Miombo vegetation, notably the Zambezi River, where water quantity and quality often depends on the overall state of the Miombo forests. These forests are also important for local people. Main uses include source of firewood, charcoal and medicinal plants, source of nutrients and soil fertilisers, through fires and recycling of leaf material, and as a source of food for domestic animals. Due to its generally fertile soils, Miombo forests are also used for agriculture (Moçambique, 2003).

The Miombo forest is characterised by a dense vegetation cover, with deciduous and semi-deciduous trees, often reaching between 10 and 20 metres. Fire is an important ecological component in these forests, allowing seed germination and soil nitrification. Thunderstorms at the start of the rainy season can easily set the vegetation alight, however, the green vegetation and moist soils prevent the fires from spreading.

The second most extensive forest type found in the country is the **Mopane Forest**, occurring especially in the Limpopo-Save area and upper Zambezi Valley, dominated by *Colophospermum Mopane*, as well as *Adansonia digitata* (the baobab tree), *Azelia quanzensis* (Chanfuta, a tree species categorised as a 1<sup>st</sup> class wood species<sup>1</sup> according to Forest and Wildlife Regulations of 2002) and *Sterculia rogersii*.

The Mopane vegetation is characterised predominantly by the occurrence of trees and bushes, and the most important vegetation types are the dry savannahs with deciduous

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<sup>1</sup> 1st class wood species can only be exported after being processed internally. The final product may be in the form of planks, beams and parquet.

trees and secondary savannahs of low and medium altitudes. Other important species found in the Mopani forests are *Sclerocarya birrea*, *Combretum sp.*, *Terminalia sericea*, *Strychnos sp.*, amongst others. Species richness only rarely exceeds 283 species per 625 km<sup>2</sup> and only exceeding 614 species per 625 km<sup>2</sup>. A few medicinal plants can also be found in these forests, such as the wild ginger (*Siphonochilus aethiopicus*) and *Warburgia salutaris* (Micoa, 1998).

The unsuitability of the soils and the occurrence of large numbers of fauna in the Mopane forests resulted in the conservation of large areas, such as those forming the Banhine, Zinave and Gorongosa Parks in Mozambique.

The remainder of the country is characterised by several other types of vegetation such as coastal mosaics, acacia woodland, libombos woodland, sublittoral woodland, mixed baobab woodland, moist forest woodland, littoral thicket and recent forest dunes, lowland palm savannah, afro-montane elements, dry conifer montane forests, moist evergreen forests, swamp and mangrove vegetation. Generally, the North of the country has denser and less exploited forests than southern Mozambique (Micoa, 1998).

### **People, forests and forest exploitation**

Although Mozambique has shown increasing rates of economic growth, “differentiation is also increasing, with most of the growth in GDP going to the top 20%, while the spread between the poor, the very poor and extremely poor is increasing” (Hanlon, 2007).

Mozambique remains one of the poorest countries in the world, with a population of 19.2 million (OECD, 2006) of which 54% live below the national poverty line (National Household Income Survey IAF, Mozambique National Institute of Statistics INE, 2003), with an average annual income per person of US\$ 250 (World Development Indicators 2005). The distribution of wealth is skewed rather dramatically in favour of urban dwellers and geographically in favour of the South, with the provinces of Cabo Delgado, Nampula, Niassa, Tete, and Zambézia all exhibiting the highest figures on the human poverty index (INE, 2003). Corruption in the country is also high, affecting all sectors of society.

The majority of Mozambicans live in rural areas, relying on natural resources for daily livelihoods. Subsistence agriculture is practiced by the majority of the rural poor, and commercialisation of products only takes place when there is surplus production. Approximately 7% of the population has access to electricity – the remaining makes use of firewood, charcoal, petrol and gas. The collection of firewood and the production of charcoal for cooking and heating represents 85% of the total energy consumption in the country. It is estimated that approximately 17million m<sup>3</sup> of biomass is used every year in Mozambique. In 2005 alone, 22 029 000m<sup>3</sup> of wood was removed for the production of charcoal, which represents a major form of resource depletion.

Timber and precious woods are also used by communities for the construction of houses and for arts and crafts, particularly carvings and sculptures. Non wood forest products (NWFPs) include medicinal plants, grass, bamboo, reed and veldt foods such as wild vegetables, fruit and tubers, amongst others. Most of these NWFPs are not

marketed by local communities, largely due to a lack of infrastructure and the difficulties in accessing towns and markets. The result is that mats, baskets, chairs and beds made out of grass are sold mainly along main roads.

### **Land Law and the Forest and Wildlife Law**

Two sets of laws govern and protect forest resource stakeholders: The Land Law of 1997 and the Forestry and Wildlife Law of 1999, with regulations approved only in 2002. The Land Law (1997) recognises and protects traditional rights to land, including forests. The Forest and Wildlife Law (1999) delineates the rights and benefits of forest dependent local communities, such as: subsistence level use of the resources; participation in the co-management of forest resources; community consultation and approval prior to allocation of exploitation rights to third parties; development benefits derived from timber production under a concession regime.

The Land Law of 1997 recognises community's rights to land and makes community consultation compulsory when assigning rights of use to a second party. It also has a limited recognition of customary rights as a means to defend women's rights (NO ENTIENDO...) (Negrão, 1999). Communities therefore, have the right to habitation and subsistence, as well as the option of negotiating with commercial entities certain agreements that could potentially bring benefits. Although communities can utilise any forest product for their own consumption, they are not allowed to commercialise these products without a license (Norfolk et al., 2004).

The Forest and Wildlife Law was aimed at sustainable forest resource management, and to create a more effective structure for the generation and distribution of related tax revenue. Central to this law is the concept of Community Based Natural Resource Management (CBNRM), which has been largely embraced in Southern Africa as a "*decentralisation process aimed at giving grass roots institutions the power of decision making and rights to control their resources*" (Nhantumbo et al., 2003).

One of the main drawbacks of the Forest Law is that it does not include the criteria of occupancy in relation to communities claiming resource rights. The law only offers some protection in relation to subsistence activities. Therefore, it has to be concluded that the two laws governing forest utilisation contradict each other substantially, as the Land Law enables the transfer of real rights to land, while the Forest and Wildlife Law restricts resource use to non-commercial subsistence levels only, making compulsory the application for a licence for commercial resource use (Norfolk et al., 2004). Thus, the Forest and Wildlife Law puts local communities on the same playing field as the private sector and international companies, which means they have to apply for licences and implement management plans in the same way as does the private sector, despite the fact that they lack both financial and technical resources to do so.

### **Threats to forests – illegal logging**

According to the 2007 national forest inventory, the main cause of deforestation in the country is human pressure in the form of burning forest areas to open cultivation areas, firewood collection and charcoal production. The Inventory further relates deforestation

rates with population numbers per province, stating that the most densely populated provinces show higher rates of deforestation than the less populated ones.

The annual deforestation rate in the country is estimated at about 219.000 hectares per year, equivalent to a change of 0.58% annually (DNTF, 2007).

Despite the Inventory's suggestion that deforestation rates are directly related to population numbers per province, there are several studies indicating that the main causes of deforestation are illegal and unsustainable logging, and, to a lesser extent, forest fires.

Many forest ecosystems depend on fires for germination, soil nitrification, natural succession and for balancing diversity. However, human-made fires have become widespread in the country, to the extent that they have changed the fire rotation period, timing and intensity in several miombo forests of northern Mozambique. In Cabo Delgado province, it has become a traditional practice to burn large areas of forest for agriculture, firewood collection and hunting. These actions have major impacts on the survival rates of seeds and younger plants, as the period between fires has been dramatically reduced. Furthermore, the slow growth rate of miombo forest plants makes them incapable of reaching a safe size before the next fire.

The illegal forest exploitation has been a well documented problem and, based on estimations of a study by DNFFB and FAO (2003), clandestine timber production in Mozambique may account for between 50 and 70% of the total national production. In terms of roundwood, this corresponds to 90,000 and 140,000 m<sup>3</sup> of illegal production per year. In monetary terms, this corresponds to a gross state loss of US\$1524 million.

This logging pressure is felt mainly on the most valuable commercial species, such as umbila, chanfuta, pau preto, jambirre, amongst others. Due to the low-density nature and openness of the Mozambican forests, these valuable trees are much easier to find, access and remove (Reyes, 2003). The result is that the present extraction of these valuable trees may be between two and four times its sustainable potential.

On a recent visit to Cabo Delgado province, communities complained about the extensive logging occurring around their villages, high numbers of abandoned logs in the forest (this happens when forest operators find even the smallest of defects on logs, leaving them behind to no use), the indiscriminately logging of small and large trees, nocturnal activity of forest operators (an illegal activity in Mozambique), and the number of foreign operators in the province.

The mechanism of channelling 20% of forest revenues<sup>2</sup> to local communities has been poorly implemented, with only a few communities receiving the money since its implementation. There are several constraints around this mechanism, felt by both the *Serviços Provinciais de Floresta e Fauna Bravia* (SPFFB) and local communities such as high costs involved in the process, weak dissemination of the law, excessive bureaucracy, lack of communication between different actors, rigid bank mechanisms related to the opening of accounts by local communities, weak civil society, amongst others. For those communities which eventually receive the 20%, there are also problems related to their capacity to manage the money and eventual projects that they may want to implement.

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<sup>2</sup> Decree No. 12 of 2002 stipulates that 20% of the value of access, exploitation and utilisation fees of forest products should be channelled to local communities.

Besides the lack of implementation of the 20% revenue that affected communities are legally entitled to, there are other issues affecting community members including the inhumane conditions, backlog of salaries, below minimum wage salaries and lack of contract within the forest sector. For the *olheiros* (men which walk long distances inside a forest spotting the best valuable trees for logging), the salary is about 1000 Mtn/month, while for a lumberjack is about 700 Mtn/month<sup>3</sup>.

The logging teams work in extremely precarious conditions, without access or very weak access to safety gear such as helmets, gloves, masks or boots. No first aid or medical support, which makes any basic injury a major risk and deaths are common. There is a lack of basic amenities such as water. The workers are often forced to use the dew (moisture) on the leaves and grasses early in the morning in order to get clean. This lack of amenities further increases health issues.

Government enforcement capacity is extremely weak. In 2006, there were about 33 *fiscais* (enforcement officers) for the whole Cabo Delgado province (with an area of about 77 867km<sup>2</sup>). Besides the lack of human capacity, enforcement is done mainly in fixed control points, which are often avoided by forest operators. Some districts do not have control points, enforcement being done mainly along roads and sawmills. *Fiscais* often do not have the necessary transport means to control a whole district, having often to share a bike or bicycle between two *fiscais*, and no resources to buy petrol.

Illegal logging is therefore widespread, with forest operators often cutting way above the allowed licensed volume, transporting logs without documentation, logging trees with sizes below the legal diameter, and uprooting trees for export.

Besides the lack of capacity and funds, the co-partnership of fines<sup>4</sup>, another legal mechanism implemented aiming to improve forest management and control illegal logging, is nearly inexistent. Until November 2006, the enforcement officers of Montepuez District emitted more than 100 fines (to operators cutting more than the authorised volume or logging without a license), totalling approximately 47 000 Mtn, without ever receiving the part that they are legally entitled to. The same happened in Mueda District, where, in 2005, fines totalling 200 000 Mtn were emitted but never reverted back to the district. This is in part due to the fact that fines are paid at the provincial level, meaning that in order to collect their share, the *fiscais* need to travel long and sometimes arduous distances. The process therefore gets usually archived at the Provincial level, with no feedback to the Districts.

During the field visit, communities also mentioned that they often catch previously caught illegal operators back in the field, doing the usual work. In some extreme cases, it was reported that not only did the individuals caught returned to the logging area, but threatened the community guards involved in the process. This breaks the trust of the communities in the system and questions the usefulness of placing time and resources in helping with the monitoring of forests.

In an interview with the provincial director of customs (Customs Provincial Directorate, Pemba, 21<sup>st</sup> of August 2007) he commented on the system's corruption, such as the

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<sup>3</sup> 1 Mtn equals approximately 24 USD.

<sup>4</sup> Decree no 12/2002 of 6 June establishes that 50 % of the value of fines derived from the transgression of the forest and wildlife law shall be attributed to law enforcement officials, community agents and local communities involved in the exposure.

under reporting of volumes, false registry of cargo and wood species, and illegal export of raw logs of 1<sup>st</sup> class wood species<sup>5</sup> or planks bigger than the legal size of 10 cm thick. The Asian exporters dominate the market, having a major interest in raw logs because the main destination (China) does not impose taxes (or imposes very low taxes) on raw logs, but does impose significant taxes on processed woods. Various interviewees commented that the taxes in China were the main reason for the interest in raw logs, and not the high inefficiency of the processing mills (around 50%) in Mozambique, because the losses are covered by the processing mills and not by the Asian buyers, who pay for final product's volume. The issue around high losses of processing should be addressed as it will promote over logging in order to compensate for these inefficiencies. Some countries like Burma have used bilateral agreements with China to solve some of their logging issues and this was often raised as a solution to this problem by some interviewees, but the central government has shown little interest in taking up the suggestions.

Centralisation is yet another setback in the forest sector. Many of the administrative districts do not have copies of the forest licenses or concessions which fall within their district boundaries. In practical terms, this means that it becomes quite difficult for the *fiscais* and district authorities to control licensed volumes, exporting guide, control being often done by what forest operators verbally state are they're licensed volumes.

Local governments are rarely involved in the channelling of 20% of forest revenues to local communities. Some local authorities complain about this fact, blaming the so called "ajuda de custos". This is a system whereby the forest operator pays the SPFFB or the District Authorities to follow the necessary community consultations on the field. They often do not know the communities within forest concession areas, the local languages and the forest operators in order to properly monitor the channelling of the 20%.

This is just a brief overview of the main problems facing the management of forest resources Mozambique. At the same time, the country seems to be now directing efforts towards the development of strategies for the production of agrofuels and plantations. On a recent visit throughout Mozambique, it became evident that most provinces, administrative posts and localities are eager for agrofuel projects, which are seen as a way out of poverty. There are several plans for the production of agrofuels and ethanol, mainly from jatropha and sugar cane. Depending on the scale and location of these plans, they may become one of the biggest threats to deforestation in Mozambique, as forest areas will be lost to plantations, and rural communities, dependent on agriculture and the collection of forest products will be further marginalised.

Despite Mozambique's richness in forest resources on which rural communities depend upon for the collection of both wood and non-wood forest products, the resource base is rapidly being eroded. Although several mechanisms have been introduced to manage forest resources more sustainably, illegal logging keeps on increasing and very little effort is being directed at reversing situation.

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<sup>5</sup> Article 12 of Decree 12/2002 forbids the export of logs for precious woods, first, second, third and fourth class species, allowing first class wood species to be exported after being processed in the country

It has been said that if deforestation rates continue to grow, the resource base will be depleted in 5 to 10 years time. This will force local communities to migrate do degraded land, putting at risk local livelihoods. Will alternative livelihoods be provided for the rural poor? Can Mozambican cities sustain massive immigration?

The need to protect Mozambican forests and hence local livelihoods is an urgent matter and should be a priority in the State's agenda, rather than developing reforestation plans and agrofuel projects, which will end up competing for forested land, while putting at risk forest dependent communities.

By Vera Ribeiro, email: [veruribeiro@gmail.com](mailto:veruribeiro@gmail.com)