CITES Non-Detriment Findings (NDF) for Pod Mahogany [*Afzelia quanzensis* Welw.] "Chanfuta" in Mozambique

A nine-step process to support CITES Scientific Authorities making science-based NDF for timber/tree species listed in CITES Appendix II

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ACRONYM

ANAC	Administração Nacional de Áreas de Conservação
CEAGRE	Centro de Estudos de Agricultura e Gestão de Recursos Naturais
CITES	The Convention on International Trade in Endangered Species of Wild Fauna and Flora
DINAF	Direcção Nacional de Floresta
FEDEMOMA	Federação Moçambicana de Operadores de Madeira
FNDS	Fundo Nacional de Desenvolvimento Sustentável
IEIA	Initial Environmental Impact Assessment
IIAM	Instituto de Investigação Agrária de Moçambique
IUCN	The International Union for Conservation of Nature
MA	Management Authorities
MITADER	Ministério de Terra, Ambiente e Desenvolvimento Rural
NDF	Non-Detriment Findings
PAs	Protected Areas
SA	Scientific Authorities
UEM	Universidade Eduardo Mondlane
WWF	World Wide Fund for Nature

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1. CONTEXT AND OBJECTIVES

The Government of Mozambique, through the National Fund for Sustainable Development (FNDS), is implementing the "Conservation Areas for Biodiversity and Development" Project - MozBio 2 (Mozambique Biodiversity), through financing from the World Bank, which aims to improve the management of the target landscapes of the Conservation Areas and improve the living conditions of communities within and around these areas.

The MozBio 2 project covers the Landscapes of the Clomplexo do Marromeu, Chimanimani and Costa dos Elefantes, and is divided into the following components: (i) support in the training of national conservation institutions, (ii) improvement of the management of the target Conservation Areas, and (iii) promotion of development rural area compatible with conservation.

Within the scope of the 19th the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Conference of the Parties (COP19) which took place in Panama between 14 and 25 November 2022, three proposals were presented with implications for Mozambique, namely: (i) inclusion of wood from all populations of *Afzelia* spp. (CoP19 Prop. 46 – covers Chanfuta) in Annex II with annotation N^{o}. 17 (logs, sawn wood, veneers, panels and processed wood); (ii) inclusion of African populations of the genus *Khaya* spp. (CoP19 Prop. 51- covers Umbaua) in Annex II with annotation no. 17, and (iii) inclusion of African populations of *Pterocarpus* spp. (CoP19 Prop. 50-covers *Umbila* and *Nkula*) in Annex II with annotation no. 17.

Out of concern for the long-term survival of tree species of the three genera (*Afzelia* spp., *Pterocarpus* spp. and *Khaya* spp.) threatened by over-exploitation, COP19 agreed to the listing in Annex II of wood obtained from populations of tree species of the three proposed genera which will come into force in February 2023. The adoption process assumes that affected countries must prepare and validate Non-Detriment Finding Reports (NDF) in which the sustainable quota is estimated for each species, following the nine steps recommended by CITES.

It is in the context, and the implications of this decision on the country's natural resource economy, that NDF report of CITES Appendix II species was prepared for Ministry of Land and Environment in order to be submitted to the Secretariat from CITES. The objective of this

reports is to give the decision and the necessaries advices of NDF Pod Mahogany [*Afzelia quanzensis* Welw.] “Chanfuta” in Mozambique.

1.2. EXECUTIVE SUMMARY

Afzelia quanzensis is a low growing plants species up to 4 mm a year. Occurs extensively throughout the country in all provides across of range of habitats. This is probably the main timber species historically used through the country for building furniture and house building.

In Mozambique it had never been a consisted artificial propagation of the species although being a common species within Maputo streets.

This is a first NDF carried out for this species. Globally this species is an IUCN Least Concern species, although it in past rated locally as a IUCN Near Threatened, in Mozambique. Main threats to this species: habitat conversion to cropland, exacerbated by itinerant agriculture, wildfires, habitat encroachment, firewood production an logging.

The biological risk faced this species are low survival rate for quite extensive seedlings being produced annually. Despite this, the established regeneration (of 1 meter of so seedling), might usually grow to a full tree. This is slow growing plant and usually takes over 200 years to attain a legal harvestable commercial size (50 cm). This species had an inverted J-courve however having less than 3 individuals per hectare.

This NDF attempted to cover all concessions in the country and, the AAC (Allowed Annual Harvest) varied across the concessions. Maputo is major consumer place and most of timber is cut in central and northern Mozambique. It appears that events of illegal logging may still be widespread, given recurrent information appearing in local formal media.

Positive NDF is recommend with advices on key management gapes. There is still a great need to trach back to the concession all timber marked for export.

2. METHODOLOGY

2.2. Data collection

Afzelia quanzensis, commercially known as "Umbila" in Mozambique, is part of CITES Appendix II. According to this, non-detriment findings of timber species are assessed through the guide of Nine-steps process to support CITES Scientific Authorities making science-based non-detriment findings for timber/tree species listed in CITES Appendix II, version 3 (Wolf et al., 2018). Also called NDF, this guide provides a standardized mechanism to record process information required available to a CITES Scientific Authority (SA) in order to make an adequate NDF.

The nine-steps are divided into 4 groups, namely: Review need for a detailed NDF (steps 1, 2 and 3), Severity evaluation of concerns, risks and impacts (steps 4, 5, 6 and 7), appropriate and precautionary managements (step 8) and NDF and related advice (step 9). Each step has specific(s) key(s) question(s) and indicator(s). And, depending on answer of the key questions, negative answers of each step may address to early decision (short cut to Step 9).

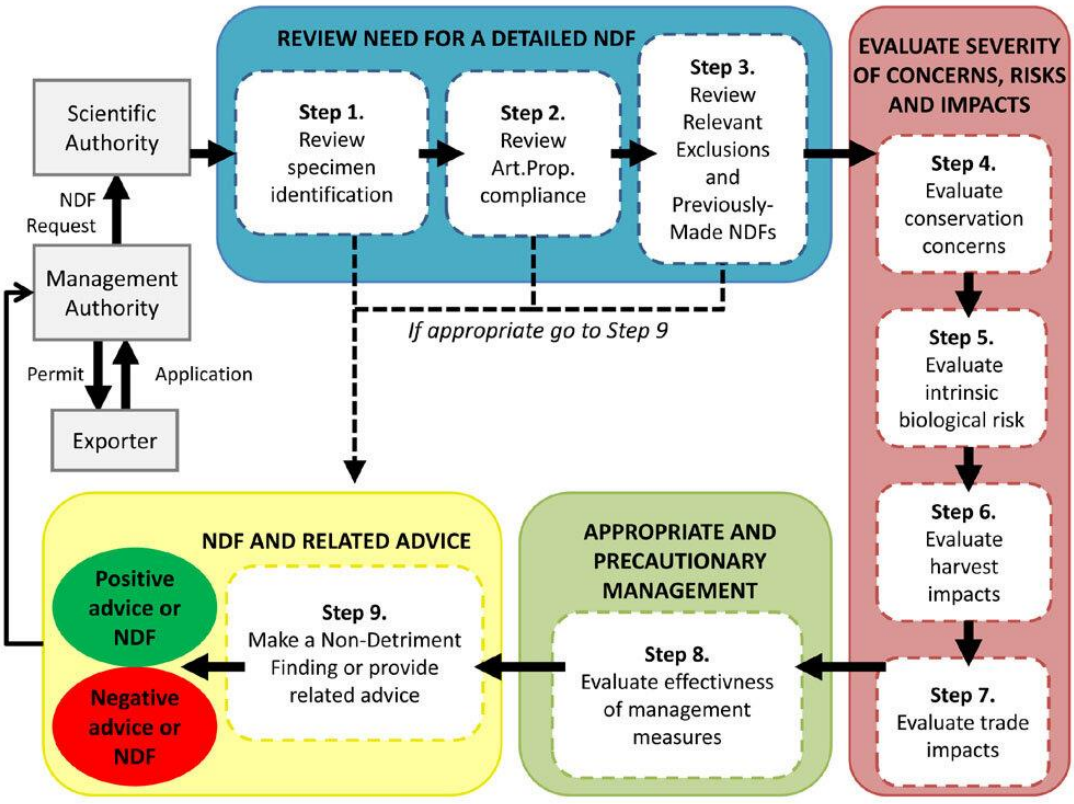

Figure 1: Nine-steps pathway for making non-detriment findings for timber/tree species listed in CITES Appendix II (source: Wolf et al., 2018).

2.2.1. Review need for a detailed NDF (steps 1, 2 and 3)

Steps 1-3 involve the evaluation of whether a detailed, science-based NDF is needed for the species concerned. The species being made the NDF should be known in order to make an adequate non-detriment finding.

2.2.1.1. Step 1: Revision of species identification

- **Key question:** Is the SA confident, the timber or timber product concerned has been correctly identified, and that the correct scientific name has been used for the timber?

2.2.1.2. Step 2: Revision of compliance with requirements for artificial propagation

- **Key question 1:** Is the permit application for artificially propagated specimens?
- **Key question 2:** Is export of the artificially propagated specimens of this species permitted by national or relevant sub-national legislation?
- **Key question 3:** If specified as artificially propagated, do timber specimens meet all requirements for artificial propagation?

2.2.1.3. Step 3: Revision of relevant exclusions and previously made NDFs

- **Key question 1:** Are the timber specimens applied for covered by CITES Appendix II?
- **Key question 2:** Is the harvest or the export of wild-harvested specimens of this species permitted by national or relevant sub-national legislation or regulation?
- **Key question 3:** Has the Scientific Authority previously made a science-based NDF for this species that is still valid and is sufficient to evaluate the specimens for the current export permit application?

Depending on answer of the key questions, negative answers of each step may address to early decision (short cut to Step 9).

2.2.2. Severity evaluation of concerns, risks and impacts (steps 4, 5, 6 and 7)

The steps 4, 5, 6 and 7 supports evaluation of conservation concerns, potential biological risks, harvest and trade impacts and their severity. These evaluations are obtained using appropriate indicators. The texts bellow presents the summary of the all key questions as well as the summary of the main indicators found relevant in order to make the steps suitable with the national NDF for the species.

2.2.2.1. Step 4: Evaluate conservation concern

This steps evaluate the conservation concerns of the target species. At all, 3 key questions were used in order to evaluate the conservation concerns, namely, global conservation status, regional conservation status and national conservation status according to IUCN and local conservation status. See the key questions bellow.

- **Key question 1:** Considering assessments of the conservation status of the species, what is the indicated severity of conservation concerns at global, regional and national levels (low, medium, high and unknown)?
- **Indicators:** Conservation status of the timber species according to IUCN Red List (e.g. Deficient Data, Least Concern, Critically Endangered, Endangered) and current population trend and threats.

2.2.2.2. Step 5: Evaluation of potential biological risks

This steps evaluate the biological risks of the target species. At all, 5 key questions were used in order to determinate the risk severity of the potential biological risks, namely: geographic distribution, national /sub-national population size and distribution, size structure of national/sub-national populations, habitat specificity and vulnerability and resilience of the tree species. The summary of indicators for each key question are presented below.

- **Key question 1:** What is the risk severity of the species according to its geographic distribution (low, medium, high and unknown)?
- **Indicator:** distribution type of species (widespread, restriction and unknown).

- **Key question 2:** What is the risk severity of the species according to national /sub-national population size and distribution (low, medium, high and unknown)?
- **Indicators:** population size (widespread, restriction to medium size or small region and unknown) and distribution (homogeneously, unevenly, scattered or unknown) type of species.

- **Key question 3:** What is the risk severity of the size structure of national/sub-national populations (low, medium, high and unknown)?
- **Indicator:** size classes distribution (reverse J-shaped curve) type of species.

- **Key question 4:** What is the risk severity of the habitat specificity and vulnerability (low, medium, high and unknown)?
- **Indicators:** adaptation of the species in relation of habitat or ecological zones and habitat quality (suitable or deteriorating) and size (increase, stable or increase).

- **Key question 5:** What is the risk severity according to resilience of the tree species (low, medium, high and unknown)?
- **Indicators:** growth rate, reproduction pattern and mortality rate of the specie.

2.2.2.3. Step 6: Evaluation of impacts of harvest

This steps evaluate the impact of harvest risks of the target species. Due to the magnitude of the NDF, 2 key questions where used (keys 2 and 3, hereafter named keys 1 and 2) as the key 1 is regarded to the harvest impact at forest concession level. Both questions were used in order to evaluate the harvest impact severity on the national and subnational population of the target species and on the ecosystems. The summary of indicators for each key question are presented below.

Key question 1: What is the harvest impact severity on national and subnational populations of the target species (low, medium, high and unknown)?

- **Indicators:** national and subnational population trend (increase, stability or decrease); effects of harvest operations on population (population interconectio), species distribution and the management principles (change or remain the same).

Key question 2: What is the harvest impact severity on the nation ecosystem (low, medium, high and unknown)?

- **Indicators:** degree of difficulty in identifying species; effect of harvest practices on non-target species, species diversity and environment and the role of management measures on the ecosystem.
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2.2.2.4. Step 7: Evaluation of impacts of trade

This steps evaluate the trade impact severity of the target species. Due to the magnitude of the NDF, 2 key questions where used (keys 2 and 3, hereafter named keys 1 and 2) as the key 1 is regarded to the trade impact severity at forest concession level. Both questions were used in

order to evaluate the trade impact severity on national legal trade and the magnitude of illegal trade. The summary of indicators for each key question are presented below.

Key question 1: What is the harvest impact severity on the trade level in relation to harvest area production (low, medium, high and unknown)?

- **Indicator:** annual and historic amount of permit quantity roundwood (high, stable or low) at the harvest area.

Key question 2: What is the magnitude and trend of national legal trade (low, medium, high and unknown)?

- **Indicators:** type of uses (less or multiple); trade volume demand in relation to abundance of the species; and market demand trend (increase, stability or decrease).

Key question 3: What is the magnitude of illegal trade (low, medium, high and unknown)?

- **Indicators:** documentation status of domestic and international trade (poor, limited or good); transparency and robustness of trade chain () concerns regarded to volume in legal trade and harvested volume.

2.2.3. Appropriate and precautionary managements (step 8)

2.2.3.1. Step 8: Evaluation of appropriate rigors of existing management measures

This steps asks if whether existing management measures in place are relevant to the identified concerns, risks, and impacts, and evaluation and adequately mitigate or reduce the severity of harvest and trade impacts identified in Steps 6 – 7. It comprises 2 main questions, with appropriate indicators as shown below.

Key question 1: What management measures are in place for the target species? The indicators of this question are presented below.

a. What is the ownership/tenure right of the harvest area (state; communal; private; logging concessions, etc.)?
b. Who manages the harvest area (e.g. international corporation; industrial concession, small-scale holder, national or local logging company; communal forest management; state agency, private person, etc.)?

c. What management measures are in place and are they documented (e.g. in a management plan), are they comprehensive and adequate to the requirements of the forestry operation?
d. Are there State checks and controls of forest operations, transport, sawmills, exports, etc.?
e. Is a credible certification system in place?
f. Is monitoring conducted to systematically assess the impact of harvesting procedures and also assess whether management objectives have been met?

Key question 2: Do existing management systems adequately mitigate harvest and trade impacts identified for the populations and sub-populations of the species concerned? The indicators of this question are presented below.

a) Management measures, to address the type and geographic scope of the identified concerns, risks, or impacts, do not exist or are unknown to exist.
b) Management measures in place address the type and geographic scope of identified concerns, risks, and impacts (but don't have the appropriate level of rigour).
c) Management measures in place have, at a minimum, the appropriate level of rigour required to reduce the severity of identified concerns, risks, and impacts (but are not implemented effectively or implementation is unknown).
d) There is evidence that the existing management measures have the appropriate level of rigour and are effectively implemented to mitigate the identified concerns, risks and impacts.

1.2.4. NDF and related advice (step 9)

Step 9 involves the making of an NDF or other advice to the Management Authority based on the outcomes of Steps 1-8. It comprises 7 decisions to support address the NDF. The list of the decisions are presented below.

a) Decision 9.1: Is the Scientific Authority not confident that the specimen concerned has been correctly identified, and that the scientific name used is compliant with the appropriate CITES Standard Reference?
b) Decision 9.2: Is the export of artificially propagated specimens of this species not permitted by national or relevant sub-national legislation?

c) Decision 9.3 Does the species covered by the export permit application clearly meet all requirements for artificial propagation?
d) Decision 9.4: Are the specimens not covered by CITES Appendix II?
e) Decision 9.5: Is the export of harvested specimens of this species is not permitted by national or relevant sub-national legislation or regulation?
f) Decision 9.6: Is the previous NDF still valid and sufficient to evaluate the current export permit application?
g) Decision 9.7: Do existing management measures (step 8) adequately mitigate harvest (step 6) and trade impacts (step 7) identified for the populations and sub-populations of the target species affected by the proposed trade?

2.3. Data collection and analysis

Data collection consisted in the consultation of bibliographic references such as books, scientific articles, digital and physical reports of relevant institutions, journal and internet sites. Confidence level of each information sources was classified as (low, medium and high). And, all data were treated in order to fit the indicators proposed on the guideline. Descriptive statistical and visual interpretation through graphic and/or table, were used to describe and/or quantify the trends or variation of numeric variables, whenever possible.

3. RESULTS

3.1. Nine-steps of non-detriment findings for *Afzelia quanzensis*

3.1.1. Steps 1, 2 and 3: Reviews of specimen identification, compliance with requirements for artificial propagation and relevant exclusions and previously made NDFs

The timber or timber product concerned has been correctly identified, and that the correct scientific name has been used for the timber. The taxonomy of the target species is found bellow (Victor and Geldenhuys, 2005; Burrows et al., 2018; Kew, 2023).

Scientific name: *Afzelia quanzensis*
Class: Magnoliopsida
Order: Fabales

Family:	Fabaceae (Leguminosae)
Subfamily:	Caesalpinioideae
Genus:	*Afzelia*
Etiology	*quanzensis:* After the Cuanza River in Angola.
Synonyms	*Afrafzelia quanzensis* (Welw.) Pierre; *Afzelia attenuata* Klotzsch; *Afzelia petersiana* Klotzsch; *Intsia quanzensis* (Welw.) Kuntze; *Pahudia quanzensis* (Welw.) Prain.
Common names:	Mozambican names: Chanfuta (Ronga); Mussacossa (Manyika, Sofala, Zambézia); Ngongomua (Tete); Mwako, M'oko (Macua); N' tama (Cabo Delgado); International names: Pod Mahogany; Lucky bean tree; Peulmahonie; Red Mahogany; Rhodesian Mahogany; Rooimahoniehout; Swart Tamboti; iNkehli; Mambakofi.

The harvest or the export of wild-harvested specimens is permitted by national or relevant sub-national under (a) forestry and wildlife law: law nº 10/99, of 7th July; (b) regulation of the forestry and wildlife law: decree 12/2002, of 6th June; (c) processed wood export tax regulation: decree 42/2017, of 10th August; (d) processed wood export tax law, law 14/2017, of 30th December; (e) annual plan for the export of processed wood: ministerial diploma 55/2018, of 12nd June; (f) forest policy and its implementation strategy: resolution 23/2020, of 27th March; and (g) enforcement of cites listed species (CM – 2002; 2017; MTADER, 2018a). The specimens can be exported as planks, sleepers, beams, parquet rules, Slats and Others (MTADER, 2018a).

3.1.2. Step 4: Evaluate conservation concern

The conservation status of *Afzelia quanzensis* was conducted considering the 3 levels of distribution, namely: worldwide, regional and national levels. Globally, the conservation status of the target species is Least Concern (LC) with decrease trend of the population and without known population size. The main threats are related to biological resource use in form of logging and wood harvesting, and are motivated by intentional use for subsistence, practiced in small scale, and trade, practiced in large scale. Although the scope and severity of the subsistence use are unknown these threats are still ongoing causing stress at both ecosystem and species levels and (Hills, 2019).

At regional level, the conservation status of the species was assessed within the countries (Hills, 2019), what suggests the lack of regional legal instrument. *Afzelia quanzensis* is Vulnerable (VU) in Malawi (Msekandiana, G. and E. Mlangeni, unknown year) and Angola (Costa et al., 2019); is Least Concern is South Africa (Victor and Geldenhuys, 2005) and Zimbabwe (Hyde et al., 2023); and is not known in Zambia and Tanzania. Meanwhile, according to the endangered species list of plants of Tanzania, the target species is not included (http://www.earthsendangered.com/search-regions3.asp), what possibly suggests low risk of threats.

In Mozambique, *Afzelia quanzensis* is near threatened – NT, under IUCN red list (Golding, 2002) and classified as first-class timber species (Conselho de Ministros, 2022). The main threats in Mozambique are descripted at the next steps. On the other hand, the disparity on distribution of the species within the provinces of the country, combined with the impacts of the uses (subsistence and trade) may suggest the necessity of subnational classification (DINAF, 2018).

Considering assessments of the conservation status of the species, the *severity of conservation concern is "Low"* since the species, population, or sub-population has been assessed and is not considered to be threatened as defined by the criteria of IUCN Red List category. However, monitory and management of the harvesting and trade processes of this species is recommended as the population size, although unknown, was reported to have a decreasing trend. (Hills, 2019).

3.1.3. Step 5: Evaluate potential biological risks

3.1.3.1. Geographic distribution

Afzelia quanzensis is a very widespread species occurring throughout most of southern and eastern Africa, from South Africa to Somalia, and west to the Democratic Republic of Congo, Angola and Namibia, with an estimated extent of occurrence (EOO) over 6 million km^2. The species is extant (resident) in Angola, Botswana, Burundi, The Democratic Republic of the Congo, The Kingdom of Eswatini, Kenya, Malawi, Mozambique, Namibia, Somalia, South Africa, The United Republic of Tanzania, Uganda, Zambia and Zimbabwe. Within the country, it occupies wide ranges in Mozambique, Tanzania and South Africa (Hills, 2019; https://www.gbif.org/species/5358281).

According to the risk severity assessment associated with geographic distribution, *Afzelia quanzensis* has a low risk severity for geographic distribution is widespread, commonly occurring throughout a large region - African one continent (see Figure 1).

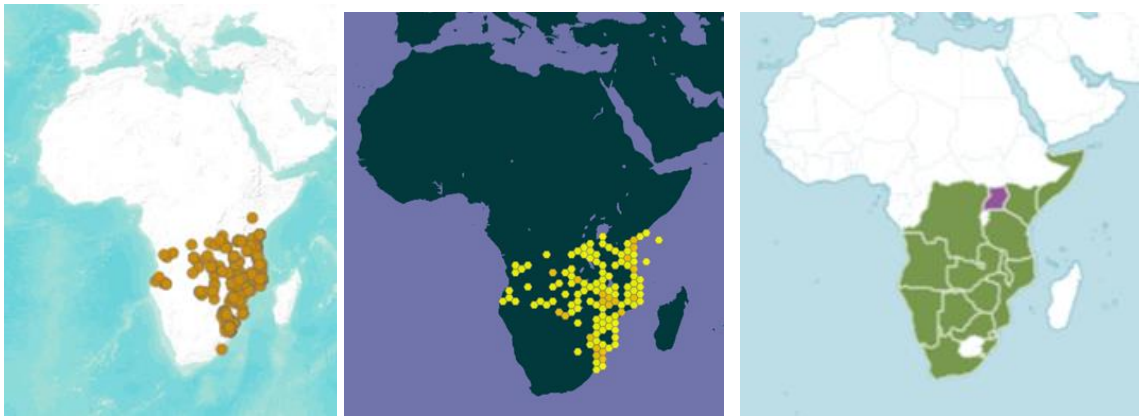

Figure 2: Geographic distribution of Chanfuta (Source: Barstow and Timberlake, 2018; GIBF, 2023; Kew, 2023).

3.1.3.2. National or sub-national population size and distribution

Information regarded to the distribution of plants species within Mozambique has been documented by many plant specialist groups (Burrows et al, 2018; Busten, 2017). Information related to mapping of the plant species, particularly tree and shrubs, have been caried by Burrow et al. (2018) and is presented at GBF database (site reference).

Following Burrows et al (2018), *Afzelia quanzensis* is distributed all over the country [see figure x (provinces of Mozambique)], although the fragmentation or isolation pattern exhibited by the species at national level, with high visibility at north, Cabo Delgado, Nampula and Niassa provinces, and south of the country, Maputo and Gaza provinces. At the center region, the population of *Afzelia quanzensis* is the largest population in Mozambique, ranging from the north bank of the Zambezi River to south bank of Save River, linking the populations of Tete, Zambézia, Manica, Sofala, Gaza and Inhambane provinces.

Clumped populations are found along the north coastal side and the confluence of Rovuma River, in Cabo Delgado province. In Niassa province, three isolated populations are mapped, with a population being recorded within the Niassa Special Reserve and the remaining population being found along the confluence of Niassa lake and Rovuma River and the

upstream of the river of Lugenda River, whereas in Nampula province, two populations are isolated from the population found in Niassa and Cabo Delgado province through Lúrio River. This isolation occurs in south region of the country, with two isolated populations being found in Gaza province, along the board with South Africa and Zimbabwe, and in Maputo province, ranging from the north to the south-west boundaries where the population are linked to the population found in South Africa and in the Kingdom of Eswatini (Burrows et al., 2018; Hills, 2019).

Although the isolation pattern exhibited by the species, it's absence at many areas within the country is related by the lack of assessment infrastructures, what restricts the carrying out of studies (DINAF, 2018). However, forest concessions are sources of the distribution of the species within the country. The amount of the individual of the target species varies according to factors such as, proximity of human settlement and cropland, drives of loss and exploitation as it plays important roles for the local communities (construction, medicine, handcraft and jewelry) (Gérard and Lapoute, 2011; CEAGRE, 2015; MITADER, 2018; Malatesta et al., 2019).

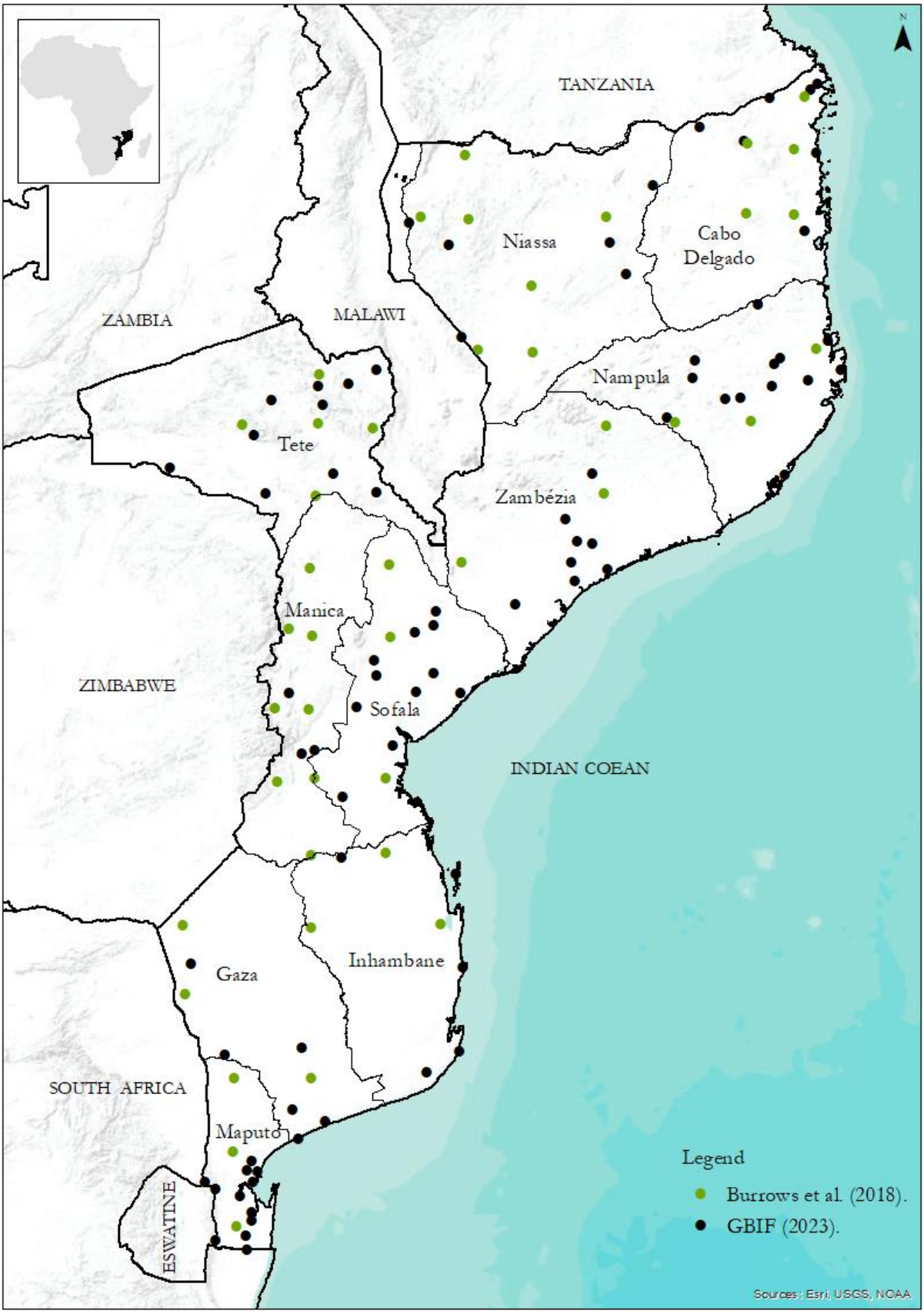

Figure 3: National distribution of Afzelia quanzensis (Source: Burrows et al., 2018; GIBF, 2023).

According to the risk severity assessment associated with national /sub-national population size and distribution *Afzelia quanzensis* has a low risk severity for national population is large, and sub-populations are spread more or less homogeneously across the country.

3.1.3.3. Size structure of national or sub-national populations

3.1.3.3.1. Size structure of national populations

At national level, the size structure of *Afzelia population* follow a reverse J-shaped curve (see graphic below). The numbers of trees at natural regeneration ([05 – 10cm[) and stablished regeneration ([10 – 15 cm[) were estimated in 1.45 and 1.2 trees per hectare (Productive Forest Area: 17 216 677 ha; National Forest Area: 31 693 872 ha). These numbers are small when compared with other timber species at the same classes such as *Millettia stuhlmannii* ([05 – 10cm[: 9.33 trees*ha^{-1} and [10 – 15 cm[: 3.75 trees*ha^{-1}) *Pterocarpus angolensis* ([05 – 10cm[: 5.76 trees*ha^{-1} and [10 – 15 cm[: 3.68 trees*ha^{-1}), *Swartzia madagascariensis* ([05 – 10cm[: 2.25 trees*ha^{-1} and [10 – 15 cm[: 1.8 trees*ha^{-1}) and is high when compared to *Guibortia conjugata* at first class ([05 – 10cm[: 0.01 trees*ha^{-1}) and to *Khaya nyassica* at both classes ([05 – 10cm[: 0.02 trees*ha^{-1} and [10 – 15 cm[: 0.01 trees*ha^{-1}) (DNAF, 2018).

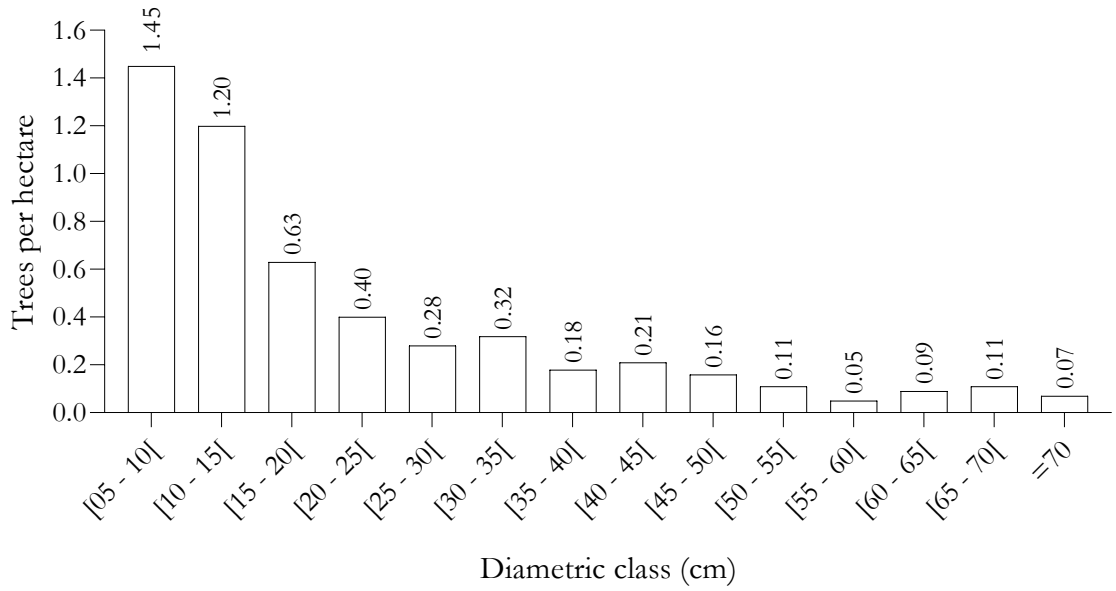

Figure 4: Size structure of national populations of *Afzelia quanzensis* (source: DIBNAF, 2018).

Comparing the first two classes of the target species with the remaining diametric classes of the same species, they are relatively high, suggesting the security of sustentation natural capacity of the species for the future harvest. Meanwhile, suspecting of overexploitation of individuals with commercial diameter (≥50 cm) is likely as the number of trees at such diameter class is less than 1 unity (see figure 3). The same trends (<1 unity of classes for commercial importance) is similar to the other species when compared using the commercial dimeter class for each species (DNAF, 2018).

This size structure of national population only includes productive forest area (PFA), and does not include the population found within the conservation areas of the country as part of the methodology applied during the fourth national forest inventory. National PFA, in which *Afzelia quanzensis* occurs is estimated in 17 216 677 ha, about 54% of national forest areas (31 693 872 ha) and 18.9% high than non-productive areas (14 477 195 ha) (DINAF, 2018). Assuming the PFA, the population size of the target species in Mozambique is estimated in 45 624 194 trees for the regeneration, 7 403 171 trees attained commercial diameter (≥50 cm) and almost 2 754 668 trees are close to the commercial dimeter class. This values may increase when considering the limitation of the national forest inventory (DINAF, 2018).

The risk severity of the target species associated with its size structure of sub-national populations is medium as it is ideally presented in a reverse J-shaped curve. However, the low number of trees (less than 3 trees/ha) at the first two classes [5 – 15 cm[may indicate a decrease trend on the national populations.

3.1.3.4. Habitat specificity and vulnerability

Overlapping the distribution map of *Afzelia quanzensis* within the country (Burrow et al., 2021) and the ecoregion maps (IUCN, 2021), the species occupies a range of habitat and ecoregions. A long the coastal line, the species occurs in two ecoregions, namely, the Maputo and Inhambane coastal forest mosaics and the Inhambane coastal forest mosaics, almost a continued forest spot between Gaza and Cabo Delgado province, separated by spots of Eastern Africa Mangrove ecoregion in Sofala and Zambézia province, and the flooded savannah of costal Zambézia, where the species is absent. Inland, the species occurs in zambiezian forest and mopane, an almost continued ecoregion between Tete and Gaza provinces, and southern miombo forest, which connect the population in Manica province.

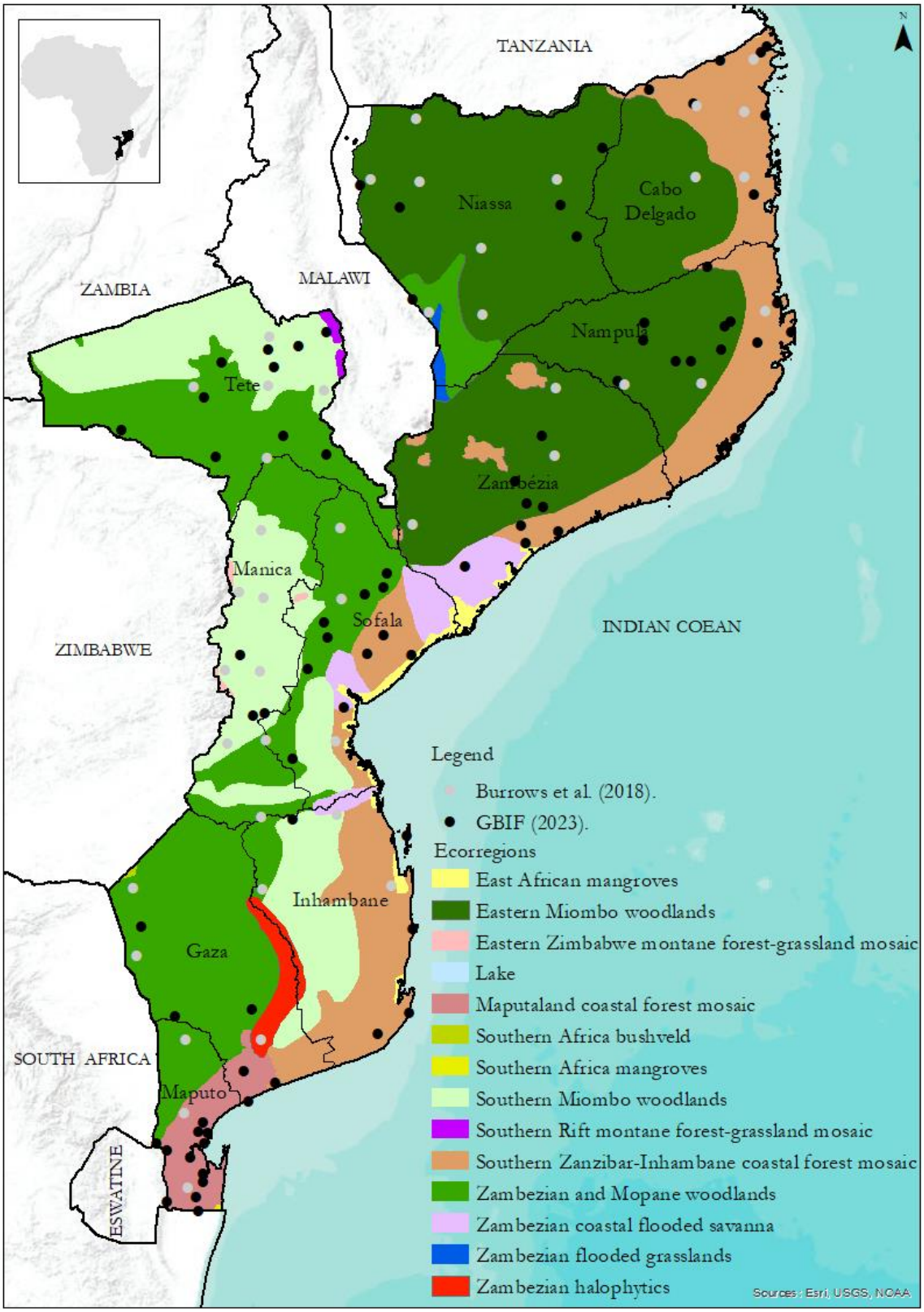

Figure 5: Distribution of Afzelia quanzensis in ecoregions of Mozambique.

Also, the species occurs in the den se forest of southern Africa, an ecoregion with characterized by the presence of afromontane habitats; within the mosaic of mountainous forest pastures at east of Zimbabwe; and forest mosaic and pastures mountains of southern of Rift valley.

According to the last forest inventory, although there was registered an increase of forest areas between 2013 and 2016, the AAC of the target species observed a reduction estimated in 10% between 2007 and 2018.

Related to other ecoregions, the threats are conversion of forest and grassland/savannah due to cropland, fires and settlements. According to Malatesta et al. (2019), whose land use categories was defined according to IPCC (Intergovernmental Panel on Climate Change) criteria (forest use: 0.5 ha with ≥ 20% of tree canopy cover with < 20% of other uses (crops, settlement, wetland and other lands)), Mozambique has gone to a change on its land use between 2001 and 2016. More than 3 million hectares of the original forests, mainly miombo and mopane forests and Inhambane coastal forest mosaic, was lost due to cropland (84.7%) and settlement (1.9%), respectively. However, more than 1 million of forest was gain from other uses, with the exception of settlement use.

Currently, about 4 million hectares of natural forest were estimated to be subjected to different types of disturbances. Fire (49.2%) and shifting cultivation (32.1%) are the main disturbance factors observed, covering altogether about 81.3% of the disturbed forest area, followed by logging (9.2%). Conversely, constructions (4.3%), charcoal production (2.5%), grazing (2.4%), pols for construction (0.2%) and mining (0.1%) are the less incident disturbance factors, affecting altogether about 9.5% of the disturbed forest area. Since the fires are characteristics to the miombo forest, the crops are restricted to the presence of settlements, and the forest low tends to protect forest areas toward sustainability, the rate of which these causes impact on forest dynamic seems to be low in long term.

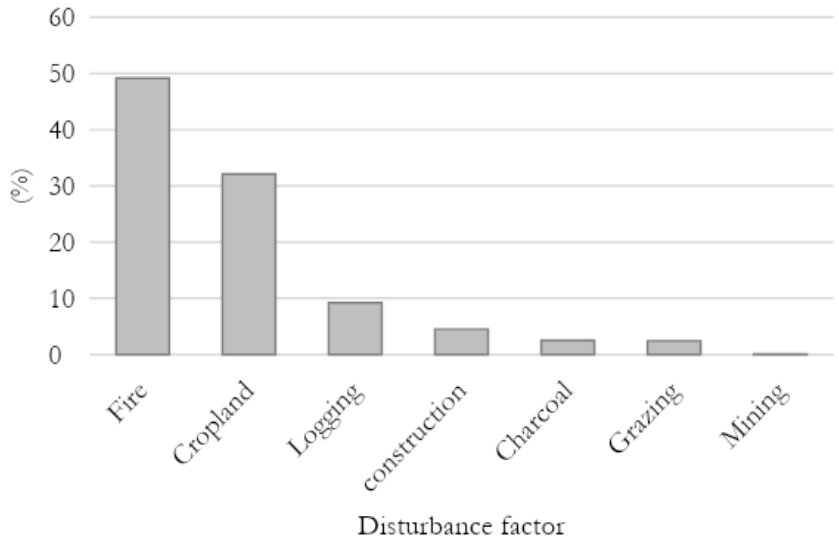

Figure 6: Disturbing factors for the survival of Afzelia quanzensis.

The risk severity in relation to habitat specificity and vulnerability for *Afzelias quanzensis* medium due to its widespread occurrence on various habitat types across its range and ecological zones, although some habitats are declining in size. Annually, the country loses more than 267 000 ha (MITADER, 2018).

3.1.3.5. Resilience of tree species

Seeds germination index is estimated in 80%. Meanwhile, natural regeneration of *Afzelia quanzensis* is often poor. Mortality of seedlings is reportedly high, more than 65% as they are susceptible to drought and browsing animals (Gérard and Louppe, 2011). Meanwhile, planting enrichment using natural regeneration plants indicated to be great contribution of restoration process. Conducting a restoration experience of 1 ha in cleared areas of forest concession in Dere district, Zambézia province, analyzing 200 plants of *Afzelia quanzensis* taken from natural regeneration, divided into 4 classes of plant height [Class I (up to 10 cm), Class II (11 to 20 cm), Class III (21 to 30 cm) and Class IV (31 to 40 cm)] over the same number of periods [90 days, 180 days, 270 days and 360 days), Hofiço et al (2017?) observed high rate (>94%) of surviving of the target species at the end of 360 days of assessment (see Figure 5), suggesting easy adaptation of local natural conditions and micro clime.

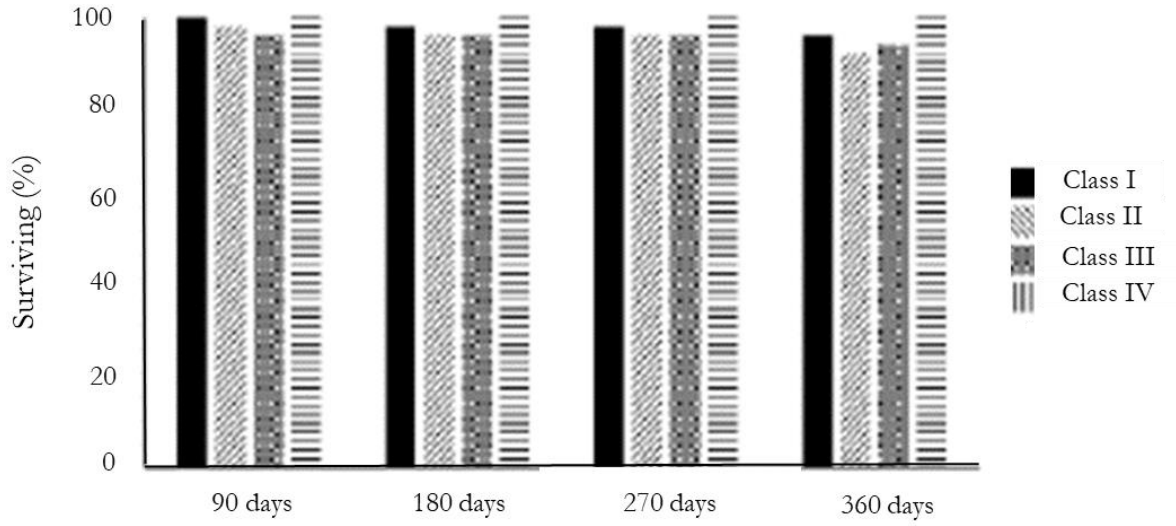

Figure 7: Surviving rate (%) of small plants of Afzelia quanzensis Welw in planting enrichment in cleared área on 12 months of age, after timber harvest, in Derre district, Zambézia province [Class I (≤ 10 cm), Class II (11 - 20 cm), Class III (21 – 30 cm) and Class IV (31 – 40 cm)]. Source: Hofiço et al., 2017?).

In addition, they observed that the thickness growth of the target species, although showed a sharp decline in Class II (0.333 cm*ýear^{-1}), shows a linear increase with the increase of the eight of the plants (Class I: 0.342 cm*ýear^{-1}, Class III: 0.345 cm*ýear^{-1}; and Class IV: 0.414 cm*ýear^{-1}). This annual thickness growth is high when compared with annual thickness growth present by Gérard and Louppe (2011), estimated in 0.3 cm*ýear^{-1}, suggesting that natural conditions plays important role on the growth of the plant.

The heartwood is durable, with an excellent resistance to fungal, termite and borer attacks, and it has also been reported resistant to marine borers. The sapwood is susceptible to *Lyctus* attack. The heartwood is resistant to impregnation with preservatives. Saw dust may cause inflammation of the eyes. Logs may have crevices filled with a yellowish powdery substance originating from the wood vessels (Gerárd and Louppe, 2011).

The seed oil contains considerable amounts of crepenynic acid and dehydrocrepenynic acid. Crepenynic acid is a potential inhibitor of essential fatty acid metabolism, and proved toxic to sheep. Dehydrocrepenynic acid acts as

inhibitor of conjugation in gram-negative bacteria, which may provide a means to control the spread of antibiotic resistance. Oleic acid and linoleic acid are also present in the oil. Aqueous bark extracts showed antifungal activity against *Candida albicans*. The roots have been associated with cases of fatal poisoning (Gerárd and Louppe, 2011).

3.1.4. Step 6: Evaluate impacts of harvest

3.1.4.1. Impact of harvest on national and sub-national populations of target species

Afzelia quanzensis showed a short decrease (± 10%) of its AAC between 2007 and 2018, with high impacted in Zambézia province where the AAC was estimated in 0 m^3 (DINAF, 2018). Observing the AAC proposed in 2018, timber harvesting was not allowed in Niassa and Zambézia provinces (AAC = 0 m^3) and the proposed quota within 2021 and 2022 was high than the mean and the extreme values of 95% Confidence Interval in most of the provinces, with exception of Cabo Delgado, Inhambane and Gaza provinces.

This is associated with the limitation on the data collection during the national forest inventory. According to the national report (DINAF, 2018), the estimation of the inventory was addressed to forest types (Mopane, Mecrusse, Semi-deciduous forest including Miombo and Semi-evergreen forest including gallery forest) rather than provincial estimation, for which localized and well detailed inventories are recommended. Also, financial and logistic limitations contributed to the assessment lack of coastal forest, where *Afzelia quanzensis* occurs (see Figure 3).

Although the decrease presented by the population of the target species, its distribution within the country and the region is evenly (see Figure 3). Nevertheless, management principles carried in many concessions areas, although have been applied for one cutting cycle or more, harvest regulation through AAC, as well as the constant changes on national regulations of timber product harvesting and the innumerous memorandum of understanding in order to strengthen institutional collaboration may play important role in reduction of harvest impact severity. Furthermore, harvesting effect for the target species seems to have low impact when compared to agricultures and uncontrolled fires (CEAGRE, 2015; MITADER, 2018; Malatesta et al., 2019).

Table 1 Allowable Annual Cut of Afzelia quanzensis in Mozambique (DINAF, 2018; 2023).

	Allowable Annual Cut (m^3)			AAC 2021 - 2023		
Province	**-95% IC**	**Mean**	**+95% IC**	**2021**	**2022**	**2023**
Cabo Delgado	11 182	14 517	17 851	923	1 623	2 000
Niassa	0	0	0	15 134	15 134	18 000
Nampula	1 175	2 018	2 864	6 174	6 174	12 000
Zambézia	0	0	0	4 000	4 000	8 000
Tete	1 618	2 034	2 449	3 000	3 000	6 000
Manica	430	1 282	2 133	5 579	5 579	10 000
Sofala	1 974	2 522	3 071	6 142	6 142	12 000
Inhambane	3 287	4 055	4 824	1 460	1 460	3 000
Gaza	758	1 023	1 288	535	535	2 000
Maputo	0	0	0	0	0	0
Total	**20 424**	**27 451**	**34 480**	42 947	43 647	73 000

Therefore, harvest impact severity on national and subnational populations is medium. It is recommended the integration of annual report of timber harvesting together with the management extension request together with the national authority. It can help us to understand the domestic and exportation volume at local, regional and national levels.

3.1.4.2. Harvest impact on the ecosystem

Harvest impact severity on the ecosystem is hard to grasp and remain unknown as many of the indicators are not available. Information is needed on number and density of seed-trees; enrichment planting; damaged volume of the target species compared to its growth volume; logging selectivity; quantity or spatial coverage is not known if they have influence on seed production of remnant stand. Spatial coverage of regeneration, mainly natural. basically none of the management plans have such information. However, indirect evidence, such as the reduction of simple license logging and the revocation of some areas, due to the lack of transparency or sustainability, points to the commitment of national authority to reduce the impact of harvest on the target species.

3.1.5. Step 7: Evaluate impacts of trade

3.1.5.1. Trade level and magnitude and trend of national trade

According to reports from the National Directorate of Forests (DINAF), *Afzelia quanzensis* has low commercial impact as not part of the most licensed timber species in Mozambique between 2017 and 2022. Meanwhile, consulting the licensed volumes of the 173 management plans, the AAC was estimated in 11 988 m^3 between 2015 and 2022, with the amplitudes values ranging from 50 to 1 866 m3. Documents of harvested volume are not available.

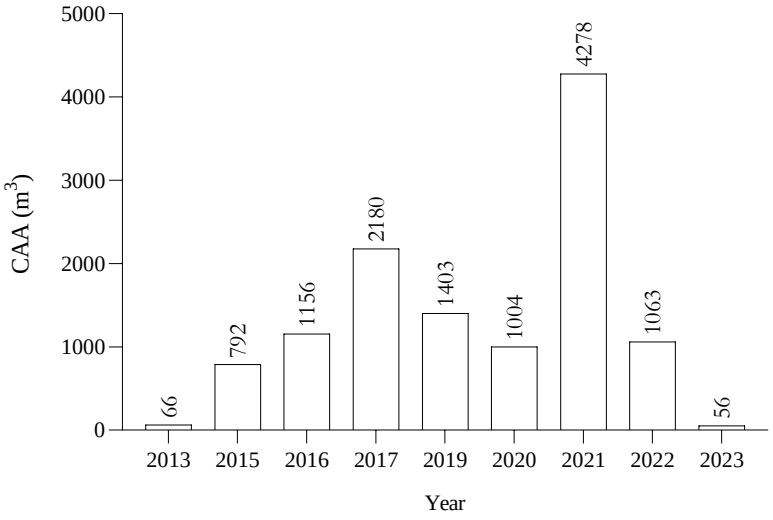

Figure 8: The variation of licensed volumes on 173 consulted forest concessions in Mozambique between 2013 and 2023.

3.1.5.2. Magnitude of illegal trade

Given projection of population increase in Mozambique it is forecasted an increase in consumption in this timber for various purposes, namely furniture focus to school desks and chairs and export (Falcão 2019). At national level there is poor documentation of national and international illegal trade however the government has recognized having an annual loss of $US 200 000 000 due to illegal trade of timber (MTA, 2023). There are also reported discrepancies in the volume reported in the place of departure and countries of arrival. As an example, volume reported by China can be traced before and after "Operação Tronco that occurred in 2016. For the period 2007-2012 (EIA 2013) and period 2014-2016 were timber reported form Mozambique was 530 000 m3 opposite to 680 000 thousand by China (REF:)

Reports on illegal trade within national media are not uncommon; an indication of possible increase of low enforcement. This increase of reports might also indicate existing fragilities. There has been a practice of legalizing confiscated timber (Stakeholders horkshop of 11 March 2024). But confiscated, then legalized CITES Appendix II timber species cannot be exported given absence of traceability.

Considering the importance of the species (top 5 of the most annual licensed timber), illegal trade of the timber within the national and international markets is unrefuted (DINAF, 2022) The decrease of timber produces in near future may play important role, showing projection of increase on consumption of wood, coal and firewood and consumption of wood for school desks whereas legal (exported wood) and reduction of illegal (see table below) the existence of this species depends on the plant enrichment activities within the concessions and the involvement of local communities, capacity them to observe the practice of ecological agriculture, the main pressure factor of the areas where the species occurs (MITADER, 2018).

Tabela 2: Projection trends of timber and forestry resources between 2018 and 2030 (Falcão, 2019).

	Volume (m^3)				
Year	**CWCF**	**VCWD**	**EW**	**IW**	**Total**
2018	26 807 596	21 764	494 615	247 307	***27 571 282***
2019	27 495 082	26 607	494 615	4 946	***28 021 250***
2020	28 214 627	26 607	350 000	3 500	***28 594 735***
2021	28 938 142	26 607	350 000	3 500	***29 318 250***
2022	29 672 214	26 607	350 000	3 500	***30 052 321***
2023	30 335 560	26 607	350 000	3 500	***30 691 733***
2024	31 171 142	26 607	350 000	3 500	***31 546 405***
2025	31 935 898	26 607	350 000	3 500	***32 316 005***
2026	29 903 188	27 607	350 000	3 500	***30 284 295***
2027	33 493 955	28 607	350 000	3 500	***33 876 063***
2028	34 286 206	29 607	350 000	3 500	***34 669 313***
2029	35 087 114	30 607	350 000	3 500	***35 471 222***
2030	35 895 995	31 607	350 000	3 500	***36 281 103***
Total	***403 236 720***	***327 273***	***4 839 229***	***290 753***	**408 693 976**

Where: CWCF - Consumption of wood, coal and firewood; CWD – Consumption of wood for school desks; EW - Exported wood; and IW - Volume of illegal wood

The severity of illegal trade is medium. It could also be unknown There is a low volume sold in relation to the proposed exploration quota; species with multiple uses; consumption projection with a decreasing trend.

3.1.6. Step 8: Evaluation of appropriate rigor of existing management measures

3.1.6.1. Management measures of harvest and trade impacts

In Mozambique the management measures are regulated by the National Forest Directorate (DINAF), and are included in the management plans during the submission of application for which they are generalized for all species, including the *Afzelia quanzensis* harvested by the logging companies. The harvest areas are owned by different entities, such as local communities and private and singular logging concessions. In a sum of 34 management plans randomly chosen, 5% are owned by local communities, 38% are owned by singular and the 57% are owned by private. These areas managed as Simple License modality has been banned as part of sustainability management (DINAF, 2023).

Generalized, the management measures in Mozambique are uniform and their implementation is strongly recommended to all sorts of concessions widespread within the country. As mentioned at step 6.3, the main management measures in place are: zonation of the concession in forest formations, forestry operations, forest production, protection activities, promotion of secondary species, involvement of the local communities and research.

3.1.6.1.1. Zonation of the concession in forest formations

The *zonation of the concession in forest formations*, although referring to the division of forest into forest types, also refers to the division of the entire concession into three main categories: productive area (logging area), non-productive area and conservation area. The productive area comprises the areas where the harvest of the timber is allowed, and this is divided according to the forest types available at the area, such as dense forest, gallery forest and savannah. This area is divided into blocks or forestry management units whose number is, generally, the same as the harvest cycle (Sitoe and Bila, 2006). They are established to facilitate annual planning and harvesting for a period corresponding to 1 year (Langa, 2021), whereas the non-productive area is reserved to (i) community area, for the settlement, social and economic infrastructures, cropland and livestock areas, and (ii) forestry industry, for installation of the equipment,

buildings, agriculture, roads and other human land uses subcategories, including wooden and non-wooded grassland (Sitoe and Bila, 2006).

The conservation area is intended to protect the area, not allowing either harvesting or hunting of the local fauna. It represents, at least, 10% of the total area of the concession, and consists of riverine areas, wetlands, slopes of mountains, historical and cultural value areas, degraded and fragile areas, areas with near threatened or endangered species and threatened micro ecosystems. The extension area for conservation activities varies according to the natural conditions of the areas, with some areas protecting less than 10% of the areas (Langa, 2021).

3.1.6.1.2. Forestry operations

Forestry operations consist of pre-harvesting operations, operations during the harvest and post-harvesting operations (Serrote, 2017; SC, 2020; Langa, 2021). Operations before harvesting are short-term exploration plans. They establish procedures and delimiting the operation plans in order to guarantee efficiency during the exploration processes. It gathers information related to the identification and marking of the trees with recommended DBH, collecting of topographic, hydrologic and access ways, division of the productive areas into management units (blocks), identification of camping and storage areas, drag mapping and operation planning. This activity is mainly carried during the dry season, when the access conditions are assured.

Before starting the harvesting operations, all management plans include carrying out pre-inventory. Trees of *Afzelia quanzensis* with 50 cm of DBH are expected to be marked and registered together with other non-potential plants. It also includes registration of commercial height, falling direction, the shape of log, shape and illumination of the tree cover. The harvesting of trees whose log value is less than 50% due to natural formation (rot and curvature log) or an over opened or broken tree cover, which may indicate unsuitability of the log parts, are expected to be avoided.

Operations during the harvest consists in selection and marking, at least 75%, of trees with >50 cm of DBH, with the remaining 25% acting as seed bank and natural plant propagation, according to the established AAC of the areas. During this process, harvesting preparation activity is expected to occur observing the falling direction and the security of the operators. Harvest process considers the prevention of damaging of the surrounding trees as well as the

dragging direction, seeking to guarantee the minimum damages. In addition to harvesting logs, branches with a diameter estimated in 20 cm belonging to the same tree are addressed in order to maximize the use. Log dragging carried by tractor machines is planned to cause minimum damage to the ecosystem, mainly erosion, through the opening of short trails linked to the secondary roads before reaching the storage for the last loading for transformation. Logs are locally measured in a prepared database to address the diameter and marked with a unique identification number for harvesting control and carrying of internal and external audits.

Post-harvest operations are related to the management of the blocks after the harvesting process. Sprouting is expected to take in count leaving 5 to 20 cm of the main stem from the base before logging and is monitored according to stems growth. The competitor sprouts are expected to be removed during growth monitoring in order to leave the healthy one, and protection is given to the sprout against fires and other competitors' plants. Enrichment planting is expected to be carried using seeds of marked trees or even part of the plants (e.g. stems or branches) during the harvesting process in productive, cleared or disturbed areas after previous analysis of seed germination success.

3.1.6.1.3. Protection activities and research

Protection as part of management measures and consists mainly in entrance access, fires, plagues and diseases and illegal harvesting. Entrance access isis done basically by secondary roads opened by the concessionaires and charged to rangers, mainly composed of members of the local communities, and is related to the monitoring of unsustainable activities within the concession such as illegal logging, uncontrolled fires, plant harvesting, hunting and cropland (Sitoe and Bila, 2006; Serrote, 2017; Chauque, 2020; Langa, 2021).

Uncontrolled fires are the main threat to the entire ecosystem and affect the dynamic of forest. It also affects the distribution and structure of the target species (CEAGRE, 2015; Malatesta et al., 2019). Part of illegal activities and are motivated by illegal hunting or land clearing for development of agriculture. Protection measures due to this threat are awareness raising of local communities, opening of firebreaks surrounding the edges of the blocks, clearance of fuel biomass

Research in Forest Concessions or area exploited in system of Simple Licenses. Research thematics are (a) inventory programs, (b) growth and forest dynamic, (c) artificial enrichment

and (d) effects of harvest mandatory (Sitoe and Bila, 2006; Serrote, 2017; Chaúque, 2020). Concessions forest studies are scarce. Many areas are limited to present management plans as requests for licensing, one of the most important information to present to the national authority (Sitoe and Bila, 2006).

3.1.6.2. Management measures effectivity on mitigation of harvest and trade impacts

3.1.6.2.1. Inspection of forestry activities: from forestry concessions to trade

The effectivity of management measures on mitigation of harvest and trade impacts have been investigated. DINAF (2022) assessed the forest concessions in 2021 using different criteria. Assessing forest exploitation using (a) the proper delimitation of the area and forestry exploration blocks are (b) the appropriation of forestry exploration license (c) the equability of equipment to carry out forestry exploration, (d) the observation of minimum cutting diameter, codding the stumps and logs at the exploration site, and extraction of all the felled wood, and (e) the recording of all wood harvested and transported in log books for this purpose. These informations are grouped into (i) Zonation of the concession in forest formations and (ii) Forestry operations. The results indicated that there is a persistence of operators with non-compliance of management measures.

Regarded to environmental sustainability of native wood production, Egas and Falcão (2018) reported that the exploitation of native forests both under Forestry Concessions and as a Simple License, in most cases, is not carried out in accordance with the management plans proposed by Sitoe and Bila (2006) due to the lack of formal annual exploitation plan, without complying with the exploration blocks. The situation is worsened by exploitation carried out by illegal loggers, including some members of local communities that cut down trees in other people's concessions, transgressing the most basic recommendations for environmentally sustainable exploration.

3.1.6.2.2. Protection activities and research

Protection activities are crucial to maintain the sustainability of timber exploitation. Non-well protected areas are vulnerable to fires and illegal harvest. Fires effects are the reduction of effort of forest enrichment, as small plants are less tolerant of fires what causes changes on population structure of the species (Sitoe and Bila, 2006; CEAGRE, 2015; DINAF, 2018,

MITADER, 2018). Fires still one of the most threat for forest areas. As stated before, fires have 49.2% of weight over the sum of forest threats (Malatesta et al., 2019). Meanwhile, the trend of fire effects on forest loss is decreasing due to intensification of environmental education campaigns by national authority and its partners have been aimed to reduce uncontrolled fires, such campaigns have shown results encouraging in recent years. Therefore, the effectivity of this measure is medium

Related to reforms, national authorities and non-governmental organization carried a lot of researches in order to follow the dynamic and impact of the timber harvest, trade and consumption in Mozambique. several changes and recommendations have been addressed to the national authority and logging companies aimed at enforcing better forest management plans. Forest inventories (MITADER, 2018), forest dynamic and drives of forest loss (CEAGRE, 2015; DINAF, 2018; Malatesta et al., 2019); annual reports of timber products trade (DINAF, 2017, 2018, 2019, 2020, 2021), forest inspection strategy 2020 – 2024 (AQUA, 2019; DINAF, 2021b), forest and governance in Mozambique: Vision 2035 (Pereira and Taquidir, 2019), Native forest wood value chain: Diagnosis of the Current Situation (Egas and Falcão, 2018).

These investigations contributed and still contributing positively for the changes of the forest sector toward sustainability and transparency in short, medium and long term (Egas and Falcão, 2018; Pereira and Taquidir, 2019; DINAF, 2022). To illustrate, the number of forest operator and timber exporter observed a reduction, with most of the operators loosing licenses due to the unprecedented practices, such as unclear management plans documentation and illegal harvest practices.

Meanwhile, problems with researches are related to limitation due to financial resources, research completion time, poor diversity of bibliography, lack of information data on quantifying the volumes illegally harvest and trade, the lack of data on forest growth and forest types. Other problems are related with the lack of scientific information on Non-Timber Forest Products (reeds, bamboo, tree bark and others), in addition to the lack of information on the levels of consumption of stakes, poles, and others, has led to these products not included in the study (Falcão, 2019).

3.1.7. Step 9: Non-detriment finding and related advice

3.1.7.1. Non-Detriment finding

a) Decision 9.1: The plant has been correctly identified, and, the scientific name used is compliant with the appropriate CITES Standards.
b) Decision 9.2: The permit application is not for artificial propagation plants.
c) Decision 9.4 and 9.5: There is no science-based NDF made for this species, meanwhile, (a) the timber species is covered by CITES Appendixes and (b) the harvest or export of wild-harvested specimens of the species is permitted by national or relevant-subnational legislation or regulation;
d) Decision 9.7: Positive NDF is recommend with advices on key management gapes.

3.1.7.2. Advices

In order to make the harvest and trade of *Afzelia quanzensis* non-detriment the national forestry authority must consider the following advices:

3.1.7.2.1. Legal and institutional aspects

- The trade status of the species needs to be updated, advancing it the Precious timber species.
- Further operationalize AQUA by strengthen its inspection role. Additional financial, human and material resources are needed to make it more autonomous and capable to fulfil its role as biodiversity/timber controller.
- There have been suggestions for some level of moratoria on export. May be in forms of exclusion of territories or concessions that have proven not having timber.
- Improve methods for measuring volumes of wood products across timber value chain, including inspections.
- Quotas must be commented by SA.
- Eliminate authorization to remove uncollected or abandoned wood (cut apparently outside legal procedures)
- Seized illegal wood should never be exported should not be exported. Reason: its concessions or harvested areas cannot be traced.
- There is a need to guarantee that the Simple Licence (now forbidden by forest low, of 2023) is no longer active in any concessions and free areas in the country.

- Forest concessions with negative historic located near protected areas must be suspended.
- There is need to document concessions having bad reputations (re-incidence of report of malpractices). Exemplar punishment should be considered for those, especially if located in vicinity of protected areas (national parks and reserves).
- Primary surveillance is paramount in concessions with no legal wood or very low AAC.

3.1.7.2.1. Research

- There is a need to do advocacy and sensitization about CITES procedures for species included on Appendix II.
- Encourage forestry and ecological researches on the following topics across the country: growth and mortality rates across the country
- Improve management plans
- The documents must guarantee the screening timber specimens across the chain custody.
- The existing forestry information system must be detailed and near all information made available. Specifics: need to add crucial information such as operator database containing location, extent, wood species, cutting cycle, productive area, conservation area, CAA; threats, etc.).

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ANNEX

Consulted Forest Concessions and the Allowable Annual Cut (courtesy of DINAF, 2024)

Provincia	Nome	Distrito	Ano	CAA
Zambézia	Cimunitaria de Mundzo	Maganja da costa e Mocuba	2022	0
Inhambane	Anastacio Pascoal Palege Macucule	Inhassoro	2015	0
Cabo Delgado	Associação Makhala Honthudji	Balama	2019	1.158
Cabo Delgado	WOOD EXPORT LIMITADA	Mueda	2021	1.371
Cabo Delgado	Wood export, Limitada	Mueda	2015	1.595
Cabo Delgado	KAM WANG Moçambique, Limitada.	Balama	2019	2.048
Tete	Vitoria Paulo Maia	Zumbo	2015	7.5949
Cabo Delgado	Associação Esperança de ancuabe	Ancuabe	2020	11.075
Zambézia	Shung Lin	Pabane	2019	17.1
Zambézia	Florestal Comunitaria de Nipiode	Mocuba, Mulecala e Macubela	2019	19
Zambezia	Floresta comunitaria de Nipiode	MOcuba, Mulevala e Mucubela	2019	19
Sofala	Marino Denjo	Chemba	2021	23.8
Tete	Hélder Manuel Agostinho P. Macaringue	Zumbo	2016	23.8
Tete	Hélder Manuel Agostinho P. Macaringue	Zumbo	2015	23.8
Tete	Solistino Alfalinho Marques	Zumbu	2015	23.8117
Tete	SoFlora	Zumbo	2023	24
Zambézia	Madeiras Alman, Lda.	Lugela	2016	28
Tete	Pereira Alissone Cheiro	Zumbo	2015	33.8
Zambezia	CREST, LDA	Pebane	2021	45
Zambézia	Madeiras NLC	Mocuba	2017	48
Zambézia	Madeiras de Zambézia.	Morrumbala	2017	50
Cabo Delgado	Axu Internacional investimentos corporation mozambique, LDA	Montepuez	2018	51.84

Cabo Delgado	Arlindo Afonso		2021	60
Zambezia	Industrias Sotomane	Mocuba, Mulevala e Mucubela	2021	65
Cabo Delgado	Arlindo Afonso	Meluco	2018	67.5
Zambézia	Madeiras Alman, Lda.	Mocubela	2016	70
Zambezia	Today wood in products, lda	Mucubela	2023	70
Zambezia	Madeiras Amos, lda	Lugela	2019	72
Zambezia	Madeira Amas lda	Lugela	2019	72
Zambezia	Tom yin	Milange	2019	80
Zambezia	Fernando Mario	Mopeia	2021	80
Zambezia	Concessao de Coromana	Mulange	2019	80
Zambézia	BASSAM JIHAD MADEIRAS SETE LDA	Mocuba	2022	88
Zambézia	Cobua	Lago	2017	90
Zambezia	Somon, lda	Chire	2021	97
Cabo Delgado	King's Way Lda	Namuno	2017	99
Tete	abdul Sacoor Mussa Valy Ossman	Changara	2015	100
Zambézia	Madeiras Alman, Lda.	Lugela	2016	100
Zambezia	CREST, LDA	Pebane	2021	101
Tete	Interbeira, Lda	Cahora Bassa	2016	102.4293
Manica	Madeiras e Transporte Ataide	Sussundenga	2018	104.93
Tete	Isabel Gonsaves Barco Dias	Zumbo	2015	107.163
Tete	Isabel Gonsaves Barco Dias	Zumbo	2016	112.455
Zambezia	Francisco Duarte	Gile	2019	114
Zambezia	Carlos alberto Simiao Inacio	Mopeia	2021	119
Zambézia	Madeiras Alman, Lda.	Lugela	2016	120
Nampula	Florestal, LDA	Angoche	2015	120.29
Sofala	Madeiras Preciosas de Mocambique, lda	Chiringoma	2023	121
Tete	Isabel Goncalves Barcos Dias	Zumbu	2020	128

Tete	Inchope Madeira	Macanga	2015	128.395
Zambezia	Amade Ali Saide	Mulevala	2021	130
Zambezia	CREST, LDA	Pebane	2021	134
Tete	Natercia Pedro Charmar Droblene	Chifunde	2016	136
Zambezia	Nelson Lopes Cardoso	Mocuba	2019	138
Zambézia	Nelson Lopes Cardoso	Mocuba	2020	138.467
Sofala	MAFER	Cheringoma	2021	151
Manica	Oliveira Arao Oliveira	Sussundenga	2021	152.32
Zambézia	Amade Ali Saide	Mopeia, Mulevale	2019	152.9
Zambezia	Amade Ali Saide	Mopeia	2019	152.9
Zambézia	Chumpimg Wu.	Morrumbala e Milange	2020	157
Zambézia	JM7- Jihas Madeiras Sete, Lda	Mopeia	2017	160
Zambézia	BASSAM JIHAD MADEIRAS SETE LDA	Mopeia	2022	160
Inhambane	Amade Ismail Abdul Sultane	Funhalouro	2018	160
Cabo Delgado	Pacific international Lda	Chiúre	2017	164.49
Tete	Abdul Sacoor Mussa Valy Ossman	Moatize	2015	170
Tete	Abdul Sacoor Mussa Valy Ossman	Moatize	2015	170
Sofala	LevasFlor		2017	171
Tete	MC, Limitada.	Marávia	2016	175.98
Tete	Salafo Investimentos, Limitada	Marávia	2016	177.07
Cabo Delgado	Yafei Comercio Internacional Limitada	Montepuez	2021	178
Tete	Interbeira, Lda	Cahora Bassa	2013	180.05
Zambézia	Carlos Alberto Simiao Inacio	Gilé	2020	182
Cabo Delgado	Suzana Valente	Macomia	2018	182.18
Cabo Delgado	Alexandre Loureiro-Madeiras Lda	Montepuez	2017	183
Cabo Delgado	Mpingo Madeiras	Montepuez	2020	183

Zambézia	Madeiras Wamusse	Morrumbala	2018	187.5
Zambezia	Sociedade Moveis Licungo, Lda.	MOcuba, Mulevala e Mucubela	2021	200
Sofala	CENO, LDA	Caia	2021	210
Zambézia	Madeiras Jorge Bing, Lda	Lugela	2020	210.96
Zambézia	Carvalho Representações	Morrumbala	2017	220
Sofala	Gloria Virginia Ricardo	Buzi	2021	222
Sofala	Lavasflor, limitada	Muanza e Cheringoma	2020	228
Cabo Delgado	Madeiras Alman, lda	Mueda	2020	230
Cabo Delgado	Madeiras Alman, Limitad	Mueda	2017	230
Cabo Delgado	Madeiras Alman, Limitad	Mueda	2020	230
Zambezia	Inovation Import 7 Export, Lda	Lugela	2019	247.95
Sofala	Sonia Joaquim Raposa	Chemba	2021	253
Cabo Delgado	Suzana Valente	Macomia	2021	264
Cabo Delgado	Suzana Valente	Macomia	2022	264
Zambézia	African Timber, Limitada	Lugela	2016	275.5
Sofala	M & B, lda	Muaza	2021	279
Zambezia	Francisco Duarte	Gilé	2022	280
Cabo Delgado	Nkutema Namoto Alberto Chipande	Mueda	2021	285.2
Zambezia	Sun Flower	Morrumbala	2021	305
Tete	Feriado Damião Alferes	Mancungue	2015	305.68
Tete	Cristiano da Coiceicao Daniel Nardela	Zumbu	2020	309
Zambézia	WOODEN WORLD,LDA	Mocuba	2017	311
Zambézia	Ossapa	Lugela	2016	313
Manica	Simbire Madeiras	Machaze	2017	321
Tete	EDN, Limitada	Marávia	2016	322.06
Cabo Delgado	Amina Ibraimo	Balama	2021	328
Zambezia	Cuacua Madeiras, Lda	Mopeia	2021	340

Zambézia	UAPE	Gile	2022	342
Tete	Feriado Damiao Alferes	Zumbu	2020	346
Niassa	Madeiras David	Nipepe	2021	347.11
Sofala	Chiramba, lda	Chemba	2021	348
Gaza	Neves Fernando Nhanengue	Massangena	2023	351
Cabo Delgado	Amina Ibraimo	Balama	2018	362.79
Cabo Delgado	Isabel Manuel Nkavadeka	Muidumbe	2019	369.861
Cabo Delgado	Isabel Manuel Nkavadeka	Muindumbe	2019	370
Tete	Jonas Dumana Apulai	Zumbo	2023	385.28
Cabo Delgado	SAWERS CAP LDA	Montepuez	2021	396
Cabo Delgado	Miti International, LDA	Mueda	2018	411
Zambezia	Somon, lda	Derre	2021	413
Cabo Delgado	Guo Mao, Limitada	Namuno	2017	415.614
Cabo Delgado	Success Investiment, limitada	Mueda	2021	416
Cabo Delgado	Success Investiment, Limitada	Mueda	2018	417
Zambezia	Woodenworld	Mulevala	2017	420
Tete	Feriado Damião Alferes	Mancungue	2016	427.96
Zambézia	WOODEN WORLD,LDA	Milange	2017	429
Tete	Mauricio Pinto Patricio	Zumbo	2015	446.24
Tete	Cristiano da Conceição Damião Nardela	Zumbo	2016	471.07
Tete	Cristiano da Conceição Damião Nardela	Zumbo	2015	471.07
Tete	Maurício Pinto Patrício	Zumbo	2016	489.91
Zambezia	J.C.TRADING,LDA	Gilé	2021	503
Tete	Benedita Francisco A. J. Baptista.	Zumbo	2016	533.95
Tete	Bendita Francisco A. J. Baptista	Zumbu	2015	533.95
Cabo Delgado	African Timber, Limitada	Chiúre	2018	537

Zambézia	East African Forest Products, Lda	Lugela	2016	585
Cabo Delgado	King's Way Lda	Montepuez	2017	640
Cabo Delgado	Mozambique first international development, Limitada.	Mueda	2018	700
Cabo Delgado	SAWERS CAP LDA	Montepuez	2021	707
Zambezia	Baia Branca	Alto-Molocue	2020	710
Zambézia	NIS, Lda	Lugela	2017	720
Zambézia	Abdul Amid Alimamad	Gilé	2017	768
Zambezia	Madeira de Mocuba lda	Mocuba, Ile e Maganja da Costa	2021	797
Cabo Delgado	SAWERS CAP LDA	Montepuez	2018	824
Cabo Delgado	Aniceto Maria Antonio Tiago	Namuno	2023	825
Cabo Delgado	Panga, lda	Montepuez	2021	870
Cabo Delgado	Axu Internacional investimentos corporation mozambique, LDA	Montepuez	2018	911.34
Sofala	Madeira cheringoma	Cheringoma	2021	1647
Cabo Delgado	SOCIPALM, S.A.R.L.	Mueda	2021	3200
Sofala	Euromoz, lda	Maringue	2020	3796
Zambezia	Baia Branca	Alto-Molocue	2020	0.00
Cabo Delgado	Associação esperança de Ancuabe	Ancuabe	2020	11.075
Tete	Francisca Diogo Jaqueta	Mutarara	2020	158.27
Cabo Delgado	Pacific International Lda	Chiure	2021	180.7
Tete	Vuca's Moz sociedade unipessoal, lda	Zumbu	2020	229.05
Sofala	Lofe Construcoes, LDA	Cheringoma	2021	252.17
Zambezia	Bafina e Filhos	Gilé	2022	302.56
Cabo Delgado	Guo Mao, Limitada	Namuno	2021	316.50
Zambezia	Momed Icbal Issuf Daud, Lda	Guile	2021	317.36
Zambezia	Ligonha timber products, lda	Alto-Molocue	2021	412.32
Cabo Delgado	Paemacc lda	Montepuez	2021	470.38

Cabo Delgado	Faustino Rafique	Chiure	2021	471.08
Zambezia	Raimundo Julio	Maganja da costa	2021	48.3
Zambezia	Unflower.lda		2022	550
Sofala	Empresa EDN, Limitad	Gorongosa	2021	
Zambezia	CREST, LDA	Maganja da costa	2021	
Zambezia	Ligonha timber products, lda	Alto-Molocue	2020	
Tete	Empresa UTA	Zumbo	2015	
Zambézia	Florestal Comunitaria de Uapé	Gilé	2019	
Niassa	HJR		2020	
Zambezia	Floresta comunitaria do UAP	Gile	2019	
Sofala	EDN, Limitada	Gorongosa-Maringue		
Tete	Mamani Bunga Vale	Doa	2021	
Sofala	Sinohanson	Dondo	2018	

List of exporters for 2024

Exports are expected to have the capacity for process timber so that compliance for export of processed wood is attained.

Ord.	Nome do Exportador	Contacto (+258)	Província
1	Safi Timber Importação & Exportação E.I	848888809	Sofala
2	Forest Resources Mozambique, S.A	864030201	Maputo
3	Kussunga S.A	877847682	Sofala
4	Eco Village	823027804	Cabo delgado
5	Tct Indústrias Florestais, lda	823027804	Sofala
6	Mpingo Madeiras, Lda	840343870	Cabo delgado
7	Grupo Chantel Trading	878806039	Maputo
8	Asfa Sociedade Unipessoal, Lda	868220000	Inhambane
9	Filipe Filipe Chibale	847335862	Inhambane
10	Levasflor, Lda	868778287/849377941	Sofala
11	Juwa Timber	861087016/842719034	Nampula
12	Success Investment, Lda	867778888	Cabo delgado
13	Soflora, Lda	876242966	Sofala
14	Yafei Comércio Internacional, Lda	845550056/862882222	Cabo delgado
15	Projecto Chacate E.I	873594264/847659786	Maputo
16	Madeiras Bajone	864003266	Zambézia