

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

PROJECT DOCUMENT

TITLE:	IMPROVE FOREST GOVERNANCE IN MOZAMBIQUE
SERIAL NUMBER:	PD 732/14 Rev.2 (M)
COMMITTEE:	ECONOMICS, STATISTICS AND MARKETS
SUBMITTED BY:	GOVERNMENT OF MOZAMBIQUE
ORIGINAL LANGUAGE:	ENGLISH

SUMMARY:

This project proposal aims to implement a monitoring and control system to prevent illegal logging in Mozambique. Estimations of illegal logging figures around 50% are a strong warning sign indicating that the current paper-based control and information system is not working properly. Impacts of illegal logging affect the forest sector progress and discourage initiatives for forest management. Non-payment of harvesting fees creates an unfair business environment and leads to unsustainable resources extraction. The increasing scale of illegal harvesting makes it useless to invest in improved logging practices and resource management costs by forest operators. The future of Mozambican forest resources is endangered and the situation has to be reversed. This project will be implemented in phases (of which this project is the pilot phase) and by regions and is based on stakeholder's involvement and the introduction of tools and equipment to improve monitoring capabilities.

Expected main results are:

1. Current timber flow and monitoring mechanism improved by introducing better timber tracking methods.
2. Equip checkpoints installed in ports and major roads.
3. Stakeholders involved in forest governance through their participation in the revision of:
 - a) Forest harvesting permit quotas;
 - b) Harvesting procedures;
 - c) Information flow and access.
4. Illegal logging law enforcement enabling environment improved.

IMPLEMENTING AGENCY: NATIONAL DIRECTORATE OF LAND AND FOREST (DNTF)

DURATION: **15** MONTHS

BUDGET AND PROPOSED SOURCES OF FINANCING:

SOURCE	CONTRIBUTION IN US\$
ITTO	<u>321,138</u>
DNTF/DPTF	<u>85,100</u>
TOTAL	<u>406,238</u>

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Acronyms

AFLEG	-	African Forest Law Enforcement Declaration
DNTF	-	National directorate of Land and Forestry
DPTF	-	Provincial Directorate of Land and Forestry
e-....	-	electronic
EIA	-	Environmental Investigation Agency
FAEF/UEM	-	Faculty of Agriculture and Forest Engineering – Eduardo Mondlane University
GPS	-	global position system (latitude and longitude coordinates)
IUCN	-	International Union for Conservation of Nature
IT	-	Information technology
ITTO	-	International Tropical Timber Organization
MICOA	-	Ministry of environment
ONG's	-	Non Governmental organizations
SPFFB- Sofala	-	Provincial services of forest and wildlife – sofala province
WWF	-	World Wildlife Fund

1. PROJECT CONTEXT

1.1 Origin

The project proposal hereby submitted to ITTO stems from the increasing concerns regarding the unlawful logging of forest resources and estimations of illegal logging in Mozambican forests. Despite of the last decade governmental efforts to approve several laws regarding the forest sector, such as favoring concessions, requesting management plans, adjusting taxes and timber species re-classifications, setting standards of processing forest species and harvesting quotas, recognizing the role of communities and establishing the 20% share of revenues from logging licenses to communities living within forest logging areas, illegal harvesting of forest resources predominates in the forest sector and showed an increasing average rate trend of 17%/year for the last 5 years , that is, 88% increase of unlicensed wood from 2007 to 2012 (FAEF/UEM, 2013).

The country has no previous experiences in using electronic timber tracking systems and current forest information and monitoring system has been adapted/adjusted from the inherited system established during colonial period.

In Mozambique, the current system of harvesting records is based on paperwork and log identification by (a) painting a log number and (b) logging company name. This task is not done immediately after tree felling but at roadside log yards where the procedures of diameter and length measurements, classification of stem or branch, are made in order to process the tree list document. The system presents innumerous flaws: misclassification (branches pay less taxes than logs), numbering sequence adulterations, dimensions and volumes dishonest registration and harvesting location is not verifiable since GPS coordinates data is not recorded at harvesting sites.

Consequently, governmental officers have a rough estimation of extraction and traded data that is compiled at national level by jointly adding statistics provided by provincial forest branches. This process takes time and statistical figures are aggregated and in many cases do not allow further analysis. Lack of spatial information of harvested trees creates a gap in harvesting location trend analysis, species shifts and confrontation with forest inventory data. Therefore, forest resource degradation is difficult to estimate and is mostly perceived by the logging crews who frequently complain that favorite commercial trees are becoming scarce, undersized, located in remote and inaccessible areas.

Lack of compliance of forest legislation has been widely reported in Mozambique. Following the approval of Forest and Wildlife Law in 1999 and its guidelines in 2002, as well as the signature of AFLEG declaration, In 2003, a FAO/TCP project "Support for the Implementation of the Forest and Wildlife Legislation in Mozambique" elaborated an overview of forest law enforcement in Mozambique. Already in 2003, Del Gatto estimated that illegal logging ranges between 50-70% of the licensed volumes and envisioned a set of actions to tackle illegal logging, namely: strengthening effective field monitoring, log tracking system, partnerships with stakeholders, control exports, community involvement in law enforcement, training, forest certification and support legal charcoal production. Recently, increasing China demand for timber has raised concerns about illegal extraction of forest resources and the most recent two studies (FAEF/UEM, 2013 and EIA, 2013) managed to translate in figures, the public perception of the ongoing unsustainable harvesting.

Due to the illicit nature of the actions it is difficult to quantify the magnitude of the problem. Estimations done by these recent studies (FAEF/UEM, 2013; EIA, 2013) converged that illegal logging volume represents more than half of the licensed harvest with figures ranging between 52-65% of the national production.

Significant revenue losses are reported and when the licensed and registered official Mozambican figures of exports to Chinese market, which represents 90% of Mozambican timber destination, were compared with the official figures registered in China for imports from Mozambique, a difference of 154 030 m³ (48%) was not licensed and registered, indicating a revenue loss for Mozambique of approximately USD 6 million attributed uniquely to the export timber trade with China in 2012 (EIA, 2013). The most recent study carried out by FAEF/UEM considering all export countries and domestic consumption estimated a total annual loss of licensing taxes revenues within a range of 6 to 11 million USD/year. When considering additional timber VAT taxes (20 % of f.o.b prices for logs exports and 15% for sawn timber) which are not collected on illegal trade, figures scale up to 30 million USD uncollected, derived solely to the timber exports to China in 2012 (EIA, 2013). A significant contribution to funding forest monitoring and law enforcement strengthening activities is lost.

The studies also pointed out that when estimations of illegal logging are added to authorized logging, the current harvesting of forest resources for timber purposes, at least in the last 2 years, has exceeded sustainable levels.

These recent studies have accomplished the estimation of the extent of the illegal logging, the setting up of a methodology to estimate illegal logging and raising awareness for the unsustainable use of forest resources in Mozambique. It is now needed to complement these findings, with field actions to tackle illegal logging motivating factors and its roots. Participants of a workshop conducted in 2013 by FAEF/UEM within the scope of illegal logging assessment, pointed out a series of actions to halt illegal logging. This project proposal is aligned with the participant's recommendation of "*establishing mechanisms to strengthen law enforcement in logging areas and set effective connection of information along the wood sector chain.*"

1.2 Relevance

1.2.1 Conformity with ITTO's objectives and priorities

The hereby project proposal is directly related to the International Tropical Timber Agreement core objective which is to promote the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests and to promote the sustainable management of tropical timber producing forests by:

- (d) *Enhancing the capacity of members to implement strategies for achieving exports of tropical timber and timber products from sustainably managed sources;*

The project output is to strengthen law enforcement capacity in order to reduce illegal logging. This capacity building will be complemented with participative formulation of a strategy for prevention and control of illegal logging, and ultimately will enhance Mozambican capacity to export timber products from sustainable and legal forest harvesting, which is directly linked to objective (d).

Information sharing and dissemination through workshops, articles will broadcast project results and activities. Timber tracking methods and tools, data collected and discrepancies recorded will be discussed and shared with stakeholders, in order to assess the economic feasibility and sector's acceptance of proposed reforms. The improvement of forest information system based on semi-electronic system will provide more reliable, updated and accurate data to all stakeholders. On the other hand, formulation of a participative strategy to prevent illegal logging will contribute for promoting consumer awareness on illegal trade and unsustainable logging. This is consistent with ITTO's objectives (h) and (k):

- (h) *Improving market intelligence and encouraging information sharing on the international timber market with a view to ensuring greater transparency and better information on markets and market trends, including the gathering, compilation and dissemination of trade related data, including data related to species being traded;*
- (k) *Improving marketing and distribution of tropical timber and timber product exports from sustainably managed and legally harvested sources and which are legally traded, including promoting consumer awareness;*

Project will evaluate and improve the ongoing forest information system (harvesting, licensing and transit of tropical timber and timber products data flows) and will reinforce the checkpoints capacity for law enforcement and data checking, so that timber tracking system is implemented. Therefore the project results are directly linked to ITTO objectives (i) and (n), namely:

- (i) *Strengthening the capacity of members for the collection, processing and dissemination of statistics on their trade in timber and information on the sustainable management of their tropical forests;*
- (n) *Strengthening the capacity of members to improve forest law enforcement and governance, and address illegal logging and related trade in tropical timber;*

The project proposal is also relevant to The ITTO's action plan for 2013-2018, with close links to Strategic Priority 1. *Promote good governance and enabling policy frameworks for strengthening SFM and related trade and enhancing SFM financing and investment* and to Strategic Priority 5. *Improve the quality and availability of information on tropical forests, forest product markets and trade.*

1.2.2 Relevance to the submitting country policy

In 1997 a national policy for forest and wildlife was approved as the guidelines for sector's development. This project proposal is relevant to the National Policy of Forest and Wildlife Sector immediate objectives, specifically in the area of institutional reinforcement. The "institutional strengthening immediate objective" refers to the support and reforms needed to achieve the overall objective of sustainable use of forest and wildlife resources. The strengthening of the institution to allow a better policy formulation, forest resources administration, technical advice, monitoring and evaluation capabilities were identified as means to achieve better institutional performance.

In 2003, Government of Mozambique 2003 signed the African Forest Law Enforcement Declaration (AFLEG) committing itself to develop mechanisms to support law enforcement and combat illegal logging, which inevitably lead to forest degradation and unsustainable harvest of forests and wildlife. The Declaration calls for action on multiple areas (legislation and policy reforms, capacity building, information, law enforcement and monitoring, wildlife resources and forest management practices, financing reforms, market and trade mechanism) to strengthen law enforcement and governance.

The AFLEG declaration signing States reaffirm and declare the intention to "explore the ways and means of demonstrating legality and sustainability of forest products to encourage consumer market confidence and thereby enhance legitimate trade for a greater financial return to producing countries".

The project hereby submitted to ITTO is closely linked to the above-described intention.

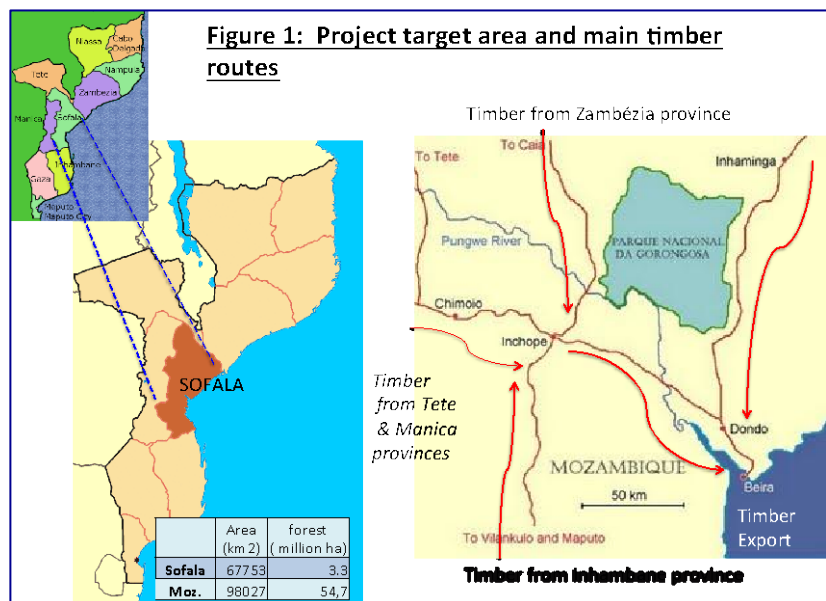
1.3 Target area

1.3.1 Geographic location

Mozambique, located in eastern coast of southern Africa with an area of 799 380 sq.km, borders with Tanzania, Malawi, Zambia, Zimbabwe, Swaziland and south Africa. The country is divided into 10 provinces with the capital city – Maputo, situated in the south.

The project will cover selected forest operators in Sofala province and its road-control posts (figure 1).

Sofala province, located in the central region of Mozambique, borders with Tete and Zambézia to the north, Inhambane to the south, Manica to the west and the Indian ocean to the east.



Sofala province comprises 12 districts (Machanga, Buzi, Chibabava, Nhamatanda, Dondo, Gorongosa, Maringue, Caia, Cheringoma, Marromeu, Muanza and Chemba.). The capital city – Beira, is situated on the coast at the estuary of the Pungué River due to the presence of the second largest port in Mozambique.

Sofala is an economically strategic province, with the Beira Corridor which provides transport links to the landlocked neighboring countries of Zimbabwe, Zambia and Malawi and as a main transportation timber route to achieve the Beira harbor and export markets. The Port of Beira has 12 quays and a capacity of 7.5 million tonners.

Sofala province has been selected due to timber resources and abundance of forest operators, as well as due to the fact of being a major timber transit route from 4 neighboring provinces (Manica, Tete, Zambézia, Inhambane) and the presence of a major port for timber and logs exports (Beira harbor). Its central geographical location also facilitates travelling, communication and information dissemination.

1.3.2 Social, cultural, economic and environmental aspects

Mozambique is rich in forest resources with 51% of the national territory (40 million hectares) covered by forests, of which 26.9 million hectares are classified as production forests, that is, vegetation formations of timber volume greater than 32 cu.m/ha. Half of production forests (13.2 million ha) are located in conservation areas, natural reserves and national parks and with restricted potential for timber production (table 1).

Table 1 – Vegetation cover in Mozambique

Vegetation type	Area (million ha)	Percentage
Forests	40	51
Woody formations	14.7	19
Other (agriculture, grassland...)	23.2	30

Source: Marzoli, 2007

Forest resources are not evenly distributed over the territory. Northern and central provinces are considered the most favorable areas for timber production. Sofala, Zambézia and Cabo Delgado provinces contributed with 70% of total log production licensed in 2007. In 2013, the increasing demand for *Colophospermum mopane* has generated a sharply increase of licenses in Tete province, but the previous mentioned provinces of Sofala, Zambézia and Cabo Delgado are still leading as timber production provinces (figure 2).

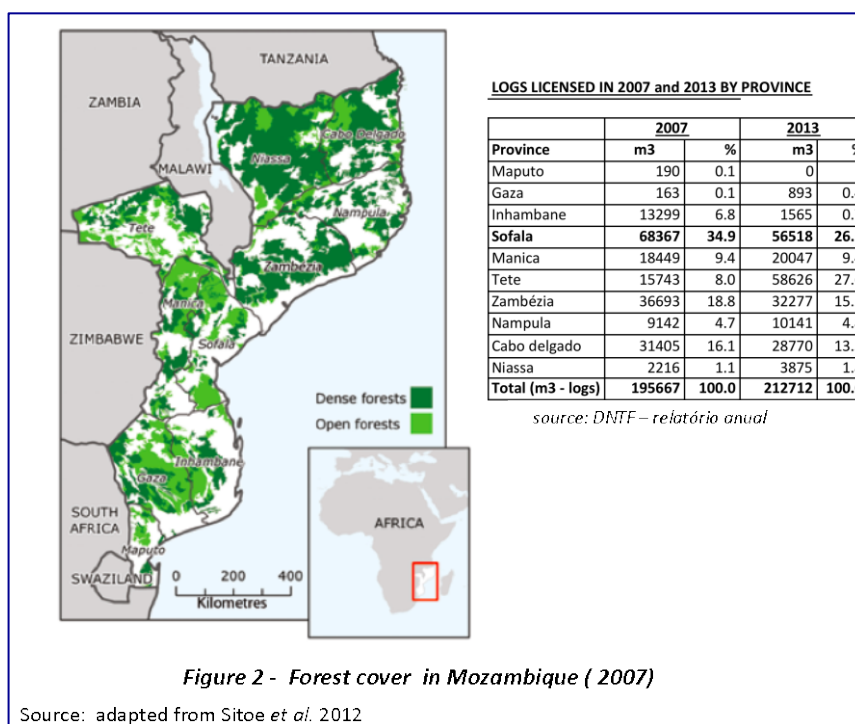


Figure 2 - Forest cover in Mozambique (2007)

Source: adapted from Sitoe et al. 2012

Sofala province comprises five major rivers basins (Zambeze, Pungué, Buzi, Save and lake Urema) and with exception of the fertile fluvial soils the most part of sofala soils have low fertility and sandy red soils are predominant. Average rainfall is around 1.000 mm/year concentrated during the warm and humid season from November to April, and seasonal flooded plains and coastal mangroves provide habitats for a range of wildlife being the plains of Marromeu complex in the lower Zambezi the largest buffalo reserve in Mozambique. Sofala province houses 2 important country conservation areas: Gorongosa National Park (3770 km2) and Buffalo reserve in Marromeu (2500 km2).

Sofala province forest covers an area of 3.3 million hectares of which 1.4 million are classified as productive forests. Out of 118 tree species in the country classified as having commercial value, considering uses, quality and demand, only 31 native species are valued for timber production. According to this parameters, they are further classified in classes: precious, first, second, third and fourth classes of use, each of which has a different harvesting tax and export restrictions. Forest harvesting is selective and concentrated in few species, namely Chanfuta (*Azelia quanzensis*), Umbila (*Pterocarpus angolensis*), Jambire (*Milletia stuhlmannii*), Pau-preto (*Dalbergia melanoxylon*), Pau-ferro (*Swartzia madagascariensis*),

Mecruse (*Androstachys johnsonii*), Pau-rosa (*Berchemia zeyheri*), Monzo (*Combretum imberbe*), Umbaua (*Khaya nyasica*) and Tule (*Milicia excelsa*).

Forest management in Mozambique is characterized by two regimes of harvesting license:

- (i) Simple license loggers, exclusive to national operators and maximum harvesting amount of 500 cum/year. Since 2011 the early licenses were extended for a period of 5 years in order to introduce a less extractive attitude and more involvement with forest resources and its dependent communities in areas of 10.000 hectares maximum.
- (ii) Forest concessions are meant to supply raw material to forest industries, with a demarcated area and a 50 years renewable contract. Applicants can be nationals and international citizens. Annual harvesting is not specified and must be calculated based on a forest inventory and an approved management plan.

Forest law favors forest concessions over simple license management regime. In 2006, a total of 127 concessions approved covered an area of 5.2 million hectares and in 2013, nearly 8.4 million hectares are forest concessions. These efforts complemented with increased harvesting taxes and demand for logs primary processing in the country, has discouraged simple loggers and significantly reduce its licensing (600 simple loggers versus 179 forest concessions in 2010 have reduced to 497 simple loggers versus 211 forest concessionaires in 2013).

In 2013, Sofala provinces had 28 timber processing units for a universe of 32 forest concessions and 61 simple licensed loggers (table 2). Timber primary processing units vary from a portable saw mounted in the forest logging site or a permanent sawmill site located near harvesting area. Some operators have their primary and/ or secondary processing unit in town or even at the provincial capital. Forest operators without processing units, or those who are unable to process themselves the fully harvested amount supply their logs to those with higher processing unit capacity. Usually these units have already contracts with the export market. This diversity will be considered on selecting pilot areas:

- 2 Single forest operator with portable sawmill near forest site
- 2 Single forest operator without primary processing unit
- 1 Forest concession with primary processing unit within forest concession and export market
- 1 Forest concession with primary processing unit outside forest concession area and export market

Table 2 - Number of forest operators by province - 2013

Provinces	Nr. Operators (simple license)	Nr. of forest concessions	Area under forest concession (000ha)	% of forest under concession
Sofala	61	32	1.07	32%
Total	497	211	8.37	

Source: DNTF, 2013

In reality, with some exceptions, there are not much differences regarding management and harvesting between forest concessions and simple licensed loggers. Most concessionaires do not follow annual harvest planning in blocks, and timber harvesting is based on the ability of field workers (*“olheiros,” pisteiros*) to spot the most valuable trees. Management plans are complex documents based in field data collection that incorporates boundaries definition and conflicts, forest data, infrastructure and accessibility assessment, population and communities assessments, wildlife information as the basic bundle of information to be addressed. They are expensive and mostly descriptive and therefore considered a bureaucratic document by the forest concessionaires rather than a business tool and an operative instrument.

Simple license logging is the preferred system because is cheaper, less bureaucratic, easier and faster to obtain. Often the simple loggers have capital to invest only in license fees and chainsaws, and rely on intermediaries for transport and processing. Intermediaries supply transport (40US\$/cu.m) and guarantee the market. The most common and powerful intermediaries are the Chinese nationals, which connect to the export market in China. When the Chinese nationals enter in the business as forest concessionaires the entire wood supply chain is fully implemented by them.

Management plans should be an instrument to discourage illegal logging. The strategic management plans are not complemented with operational harvesting plans with more accurate planning and mapping of harvesting trees, in order to obtain a better recording of the extracted volumes, locations, species and annual harvesting quotas. To advance to a more detailed level is a fundamental requirement for reducing illegal

logging and offenses, and requires strong willingness from governmental officers and acceptance from forest operators. As a consequence, the current harvesting regimes are still far from sustainable and forest degradation occurs.

Forest contributed to 3.3% of the total GDP in 2010 according to a World Bank report and on the past few years Mozambique has experience average economic growth rates exceeding 7%. With the last decades of economic growth, a network of roads has improved access to most rural areas in the country. Deforestation rate from 1970-1994, during the civil war period was contained as 0.21 % due to the inaccessibility of forest resources. From 1994 to 2004 deforestation rate estimated increased to 0.58%, representing approximately 200 000 hectares/ year. Illegal logging is one major driver but other factors such as, shifting cultivation and permanent agriculture, bushfires, fuelwood harvesting, charcoal manufacturing and large-scale mining.

Despite of many efforts to increase forest law enforcement agents, checkpoints creation and co-enforcement with community agents, law and regulations adjustments to improve law enforcement, and yet weak monitoring and control capacities are largely documented and acknowledged. Currently 676 agents are responsible to cover the all country and multiple entry-exit points to avoid smuggling, equipped with motorbikes and vehicles. **Sofala province has 64 forest law enforcement agents and 8 fixed road-blocks points. (Table 3).**

Table 3 – Forest law enforcement agents and vehicles by province and region

Provinces	Nr. Forest Law Enforcement Agents	Nr. fixed control points	Nr of motorbikes	Nr of vehicles	
				Operational *	Non operat.**
Sofala	64	8	4	3	0

* Operational vehicles are in good and reasonable state.

** Non-operational vehicle are those considered in bad mechanical shape

Source: adapted from "Mecanismos para operacionalização da Fiscalização Florestal e Faunística em Moçambique"- Apresentação à reunião nacional de terras, florestas e fauna bravia , Namaacha, August, 2013.

If a rate of 15.000 ha per law enforcement agent is considered, the country needs 2773 agents to supervise 26.9 million of productive forests (DNTF, 2013). Deforestation and illegal logging poses a threat to Mozambican livelihood since forests are the fundamentals for 64% of the Mozambican population that lives in rural areas and is depend on forests for daily necessities (fuel wood, fruits, building material, medicines, meat, and spiritual/cultural guidance).

1.3.3 Timber tracking and forest monitoring

Timber tracking refers to the capacity for tracing timber along supply chain. Electronic timber tracking is a relatively new development in forest sector (Seidel *et al.*, 2012). Timber tracking system based on paper has been used in Mozambique, but increasing illegal logging trend brings to evidence that the ongoing monitoring and tracking system has numerous flaws and is influenced by corruption.

Increasing timber demand for domestic and international supply coupled with increasing illegal logging is rising the pressure for the forest sector to move from paper-based systems towards electronic systems. The forest sector has been slow to incorporate the advantages of growing mobile phone and internet connectivity in Mozambique, while illegal loggers and poachers are adopting such modern technologies to by-pass governmental control.

Table 4 shows that timber tracking system foundations are based on electronic data management at each control point in the supply chain. Therefore, complex supply chains and a multitude of forest operators and products represent a challenge in terms of funding and results, demanding for innovative approaches to handle such cases (Seidel *et al.*, 2012). This project proposes a gradual introduction of new technology and information system based on the improvement of the ongoing system.

Table 4 – Core elements of an electronic timber tracking system

Core elements		Timber tracking options	Mozambique
Data collection (forest areas)	Physical product identification	Paint, tags, barcodes, RFID...	Log-paint and paper based records done at log-yards.
	Spatial location of trees to be harvested;	GPS coordinates	Used in areas under certification schemes; Most cases based on visual identification (“pisteiros/olheiros”) without registration of geoinformation.
	Tree measurements	Electronic or manual instruments;	Only done at log yards
	Species identification and selection	Recorded at forest area; Done by pisteiros and cross-checked with tree measurements;	Done by Olheiros/ pisteiros; recorded at log-yard
Data input record	Files, documentation	Hand-held devices (online /offline)	Paper (log lists)
Data transfer	Data is transferred to a database using web-based timber tracking software;	Web-based software; web browser;	Harvest leader handles records to forest operator & administrative staff. At law enforcement control points data is compiled by hand & personally handled to provincial office;
Data storage	Data is stored in a database to compile and generate reports	Computer database; online accessible database .	Data is transferred to a computer datacenter at provincial office
Data analysis	Non-discrepancies are detected during compilation phase.	Safeguards established. Real-time data cross checking.	Inaccuracies are difficult to correct.

Source: adapted from Seidel *et al.*, 2012.

The introduction of electronic technologies in timber tracking to strengthen forest law enforcement and improve forest governance will be complemented by training of users, establishment of safeguards rules (volumes cannot increase along chain of supply), data cross-check and reconciliation aspects (conversion factors and reduction of inconsistencies), data privacy and levels of public disclosure, backup and safety of data, verification methods and long term sustainability considerations of the proposed system.

This project will start with the study the ongoing tracking system to understand the traceability core fragilities and will test possible electronic solutions and improvements at pilot scale and will assess the economic feasibility and acceptance of the proposed reforms by the forest operators, law enforcement agents and other stakeholders.

Complementary actions, such as

- a) The formulation of an illegal logging prevention strategy to enable the adoption of an e-governance agenda for the forest sector to improve transparency and the quality of forest administration is needed, to harmonize legal aspects and to ensure adequate funding of technological upgrade of the existing monitoring system.
- b) The involvement of stakeholders and community members to actively participate on forest monitoring through the use of open platform operating via SMS and geotag messages will enhance the public participation on forest law enforcement.

1.4 Expected outcomes at project completion

The project aims to reduce illegal logging and forest degradation by strengthening forest governance in Sofala Province, through:

- a) Adoption of a provincial strategy for prevention and control of illegal logging based on provincial assessments;
- b) Strengthen law enforcement and forest management with the help of technological support (timber cruising and timber tracking methods and tools) and equipment;
- c) Improve illegal logging law enforcement enabling environment and stakeholders involvement;

It is expected that illegal logging will be reduced to **40% of timber** licensed in the country at project completion.

The expected outcomes of project (15 months duration) are:

1. The project will have achieved increased levels of good governance by identifying the main legal, institutional and technical gaps that encourage illegal logging, through the adjustment of rules and regulations at all levels of provincial forest management and administration (province, district and forest sites) in accordance with the size of forest management units, in Sofala Province which comprises 26% of volume licensed in the country.
 - *Sofala* Province and regional flows for national / regional and international market supply, assessed
 - *Legally-produced timber defined.*
 - *Major infractions and drivers assessed.*
 - *Current patterns of forest offenses assessed.*
2. The project will have achieved an increased monitoring capacity through the improved knowledge of timber tracking and cruising at pilot level with 6 forest operators;
 - 6 operators and variables selected for pilot testing.
 - 18 logging field workers selected for implement pilot test.
 - Timber cruise and tracking implemented in pilot areas.
 - Data collection and transmission & handling developed.
 - 6 pilot areas/ operators selected and system tested.
 - Timber tracking system designed and geo-reference of harvested trees introduced;
 - Economic advantages and disadvantages, benefits and constraints of proposed reforms assessed.
 - Training needs assessed.
3. The project will have achieved better law enforcement by increasing the control capacity of agents with the introduction of technological tools (databases, label readers, mobile applications for data transmission) in 8 fixed roadblocks.
 - 8 road checkpoints equipped with electronic tools.
4. The project will reduce register and information discrepancies between institutions by achieving a better coordination between institutions (DPTF and port authorities) and the harmonization of measurement units and procedures and the installation of a database center at Beira port.
 - Illegal logging prevention Strategy elaborated and approved
 - 1 check point at Beira port established
 - Provincial database center established.
5. The project will achieve an improve institutional capacities through training of 64 law enforcement agents on the use of new technologies, improved procedures and registration methods, as well as 18 forest workers and 48 community members;
6. The project will strengthen the capacity of community members and general public to monitor logging activities by the introduction of geo-referencing and user-friendly applications on mobile devices.
 - Applications for mobile devices developed and used by community members.
 - Applications are well known and user-friendly.
7. The project will have achieved increased levels of participation by involving the stakeholders on the processing of illegal logging reduction through the creation of illegal logging control forum and groups discussion on illegal logging, harvesting quotas and law enforcement.
 - Illegal logging combat forum in Sofala province established.
 - 2 general forum meetings /year.
 - Forum actively promotes discussions on illegal logging and forest management improvements.

8. The project will achieve better transparency and information dissemination by webpage publication of results and promotion of blogs and internet social networks.
- 1 Workshop for project results discussion and analysis implemented.
 - 1 Article published.
 - Web page/ blog created.
 - Up scaling e-tracking system proposal analyzed.
 - Information of forest quotas, harvesting areas and monitoring reports available to the public.
 - Operation & training manual available for public consultation.

By project completion, illegal logging will be reduced to 40% of licensed production and a provincial strategy for illegal logging control will be designed. Baseline studies and pilot implementation of timber cruise and tracking in order to improve all chain of custody control will establish the basis for gradual implementation at national level.

2. PROJECT RATIONALE AND OBJECTIVES

2.1 Rational

Mozambique government has promoted actions to improve forest management: forest concessions were re-activated, management plans demanded, forest operators involved in forest law and respective regulation discussions and formulation, communities benefits were approved (20% tax of stumps fee collected) and yet illegal logging is a common practice showing that there is a need to engage a more efficient strategy to combat and prevent illegal logging in the country. Forest operator's by-pass the rules and shift the business models to adapt to different governmental demands. The shift of Chinese timber traders in partnership with Mozambican simple license holders to forest operators with concessions shows the adaptability of the operators to fulfill the official policy for preferring concessions to simple license logging (German & Wertz-Kanounnikof, 2012). Dishonest loggers avoid taxes and pre and post harvest management activities promoting an environment for an extractive and destructive posture within forest sector and discourage the application of good practices by others.

There is a need to understand the dynamic of illegal logging, actors, drivers, institutions and impacts at different levels (forest management units, provincial and national level) in order to design strategies to reverse the ongoing current situation of mismanagement of forest resources. Modern technologies and better control systems are important supporting tools but need to be tested and experimented before national dissemination. Introduction of timber tracking technologies (labeling devices, data protocols, documentation processes, communication systems, computer software and hardware for data storage and analyses) starting with improvement of field registration at harvesting sites offers an excellent opportunity to improve the overall forest administration.

2.1.1 Institutional set-up

The project implementation requires the collaboration of three partners: government, private forest operators and community members. NGOS's and donor institutions will collaborate on project supervision and guidance.

Project will be implemented by the National directorate of Land and Forestry (DNTF), **which will coordinate the overall project implementation and monitoring while at provincial level, the SPFFB- Sofala will be responsible for daily implementation of projects activities through the law enforcement agents involvement in pilot project activities and training programmes**

Private operators are key project stakeholders since pilot activities will be tested at concession level and harvesting compartments; community members employed by private operators are important stakeholders on the adoption of modifications and register system.

2.1.2 Stakeholders analysis

Stakeholder analysis revealed that project beneficiaries will be community members and forest operators.

Primary beneficiaries of the project are:

- Local communities that will benefit at long term from better forest governance. The project aim to introduce tree origin coordinates that will allow the verification of timber origin. This contributes to reduce conflicts and will promote legal harvesting at local level. Community members are forest private logging companies workers and will receive training on timber cruise and tracking devices. On the other side, one of the factors for insufficient law enforcement is derived by lack of support by local communities to prevent and halt illegal activities. The existence of complicated and slow mechanisms to transfer harvesting fees benefits to local communities is compensated by profits from illicit logging. To raise awareness and improving the existing mechanisms for benefits transfer is fundamental to obtain community support on legal logging.
- Forest operators will benefit directly from project activities since logging registration procedures may be more efficient and less cumbersome.
- Forest law enforcement agents will be better empowered to forest monitoring and control and working environment will be improved. They are the main beneficiaries of the project and will be trained to adapt to new technologies and devices.
- Provincial Directorate of Agriculture – Forest and Wildlife Service are the ultimately responsible for forest law enforcement at their jurisdiction. They will benefit directly with the introduction of provincial database centers linked to forest checkpoints and to harbor.

Supporters of the project are represented by the advocacy NGO's. These institutions will participate on project supervision and monitoring through the steering committee and represent collaborative partners.

Table 5 - Summary of stakeholders analysis

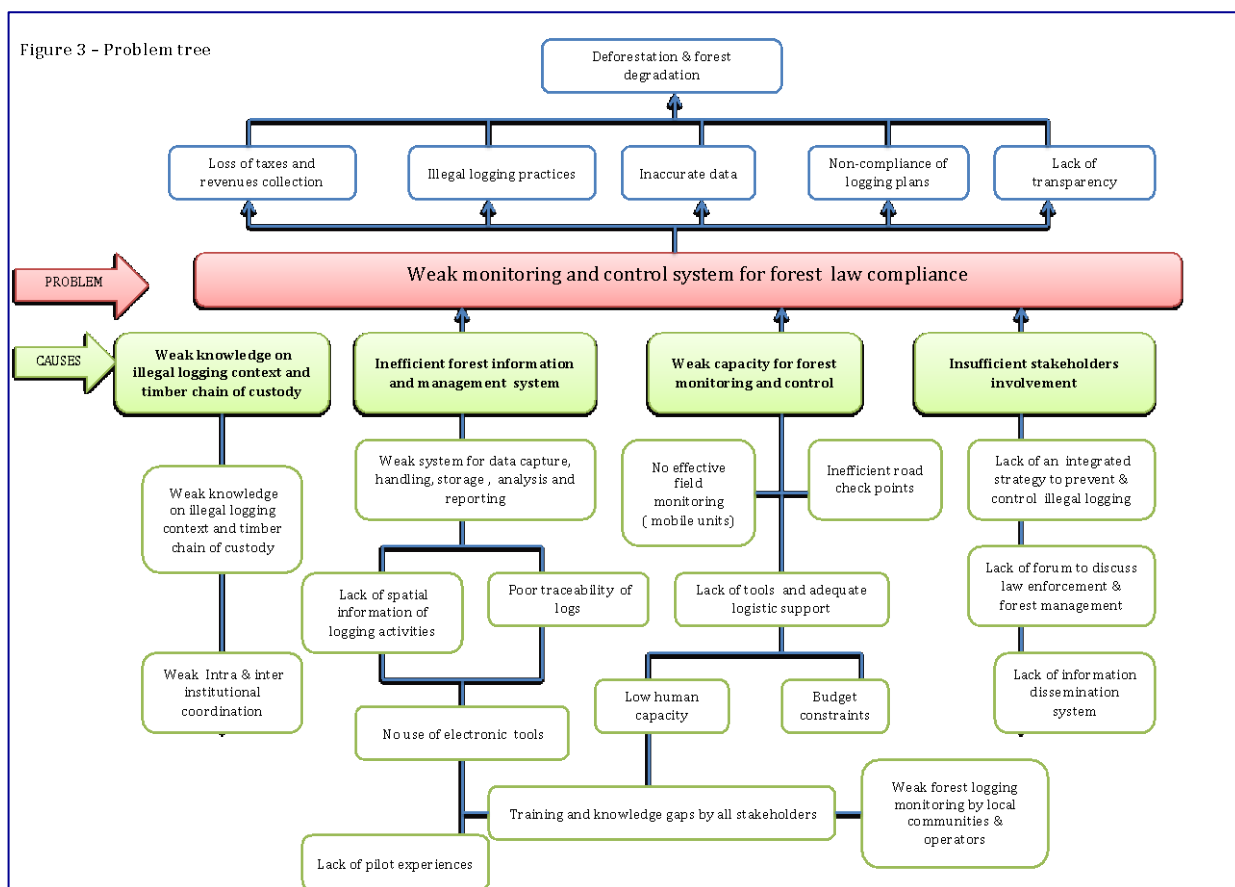
Group of stakeholders	Characteristics	Problems/needs/interests	Potential	Involvement in the project
<i>Primary stakeholders</i>				
Communities members on pilot areas	Forest resources degradation affects all Mozambicans and more specifically those living in forest areas.	Need to be more involved with forest management and receive benefits for forest harvesting; Lack of origin control of forest logging promotes conflicts and dishonest behavior; Lack of knowledge for using computer based information system; <u>Benefit form illegal activities and not interested in improving legal logging;</u>	Primary guardians and users of forest products; Excellent knowledge of resources;	<u>Beneficiaries.</u> May present some resistance to a better control of forest harvesting since are also involved in unauthorized activities;
Forest operators	Responsible for implementing forest management and rules	Main problems reflect the needs to: . Transform management plans into workable and useful documents; . Reduce costs and improve efficiency of bureaucracy; . Reduce conflicts among operators and communities; . Improve attitude towards forest resources sustainability	Directly involved in field operations and business oriented mind. <u>Verification of legal origin opens access to international markets and the establishment of voluntary agreements.</u>	<u>Partners and beneficiaries</u> May present some resistance to change procedures. Their involvement is crucial since project results and impact affects their business. They will be directly involved in pilot implementation;

Forest Law Enforcement Agents	Are responsible for forest law enforcement;	Main needs reflect: . Shortage of personnel; . Shortage of equipment for communication, transportation and combat illegalities; . Lack of coordination with different entities; . Low salaries; . Lack of motivation and carrier development; Have been involved with bribes and documents forgeries	Direct knowledge of forest operators, transporters, routes and gaps on forest information and registration system	<u>Beneficiaries</u> May present some resistance to control improvement due to their involvement in frauds.
<u>SPFFB- Sofala</u>	Provincial branches are responsible to <u>supervise</u> the implementation of forest law and regulations; Are responsible for: . Logging license issuing; .Management plan control; . Forest law enforcement	All provinces are confronted with similar main problems: . lack of means for law enforcement (personnel and equipment) . lack of coordination with port authorities and timber operators; . lack of reliable statistics and information system	Reasonable knowledge of forest sector, operators, roads, timber routes, laws, licensing and fine of contraventions procedures;	<u>Beneficiaries</u> Directly involved in project implementation and main beneficiaries.
<i>Secondary stakeholders</i>				
DNTF (National Directorate of Land and Forests)	Ultimate responsible for forestry law enforcement in Mozambique	Limited human and equipment resources capacities to control logging. Paper based registration and monitoring process encourages forgeries and dishonest registration.	Major interest in improve forest administration	Directly involved in project <u>implementation and administration.</u>
NGO's	Responsible to support and encourage good governance and transparency in forest sector	In general there is a need to improve Ngo's involvement in solutions finding rather than campaigning against the sector; Need to improve relations between governmental institutions and NGO's	Strong interest in promoting good governance and transparency Can become independent and impartial verification agents of law enforcement;	<u>Partners</u> Project objectives are directly related to their mission. They are main supporters of project results and should participate on project supervision and included on project steering committee and forums
Society at large	Society is a key promoter of pro-active sustainable forest management;	Need to have better access to information on forest sector. Loss of forest revenues due to illegal logging affects all society.	Major actors as opinion sources.	<u>Partners</u> Involved in supervision and results dissemination

2.1.3 Problem analysis

German & Wertz-Kanounnikof (2012) expressed that in 2010, the difference between Mozambican export figures bound to China and the Chinese import figures showed a discrepancy of US\$ 85 million. The study pointed systematic problems country wise related to poor administration, registration and monitoring system, such as: (i) Reporting discrepancies between different government agencies; (ii) Lack of correspondence between licensed volumes and harvested amounts, based on official statistics, with licensing covering only 54% of the extracted amounts in 2009 (excluding illegal exports); (iii) The volumes of wood needed by industrial production are more than the volumes of raw material reported in the DNTF reports; and (iv) Variable quality of systems for registering revenue among provinces;

The analysis of the weak registration and monitoring system for forest law enforcement is shown on the problem tree below (figure 3), that identified 4 major causes related to the problem:



1) Weak knowledge on illegal logging context and timber chain of custody

The problem is founded on knowledge gaps on the illegal logging drivers, impacts to individual business and overall forest industry sector and insufficient understanding of timber tracking and chain of custody. Lack of coordination within the forest sector administration and among several entities (customs, shipping agencies, police and prosecutors) creates discrepancies on requirements that often are unrealistic, unclear, unfair or excessive and promote lack of law compliance. Stakeholder's inherent differences (forest operators, communities, NGO's and civil society) imply a greater need for coordination and an integrated strategy for to prevent and control illegal logging based on a better understanding of the current situation and context and the participation of major stakeholders.

2) Inefficient forest information and management system

Forests are located in remote areas with deficient infrastructures, that when combined with poor law enforcement capacity result in insufficient ability to prevent unlawful actions. If forest record and report system along chain of custody is deficient, inaccurate, cumbersome and subjected to flaws, the overall administration system is inadequate. Most forest operators in Mozambique, and more specifically, the logging team members and leaders, lack the technical capacity to develop and implement logging maps, plans and control systems that are coherent with legal timber trade demands. The inner causes are the several requirements related to legal origin verification, complemented with weak understanding of timber tracking methods, tools and timber chain of custody, low adoption of electronic tools and knowledge gaps. The description studies of chain of custody and major illegalities will provide the basis for improving the ongoing paper-based forest information and management system. The non- use of electronic or semi-electronic systems wastes the advantages of existing network coverage and the growing use of portable devices for communication in rural areas. Therefore, lack of development and utilization of user-friendly and customized applications for forest monitoring and control do not allow the fully use of network coverage and mobile devices to improve data flow and prevent illegal logging at forest sites with the participation of community members and civil society as the main guardians of forest resources.

At forest sites, management plans are not complemented with harvesting plans and tree maps. Without coordinates of trees to be harvested the origin of trees is always uncertain. Therefore, poor log traceability and lack of spatial information on logging activities contributes to the major law infraction by simple forest operators In Mozambique: logging outside authorized areas (FAEF/UEM, 2013).

Knowledge gap on use of electronic devices for improving the existing information and monitoring system is also derived by the lack of demonstrative pilot experiences for gradual expertise building and system refining.

3) Weak capacity for forest monitoring and control

The inadequate capacity for forest law enforcement is centered on the lack of equipment and trained human resources. These factors restrict the capacity of forest law enforcement officers to carry on-the-ground verification/ surveillance, road checks and harbor verification to track illegal logging.

Sofala province forests cover an area of approximately 3,3 million hectares which are under the supervision of 64 forest law enforcement officers with 4 motorbikes and 3 operational vehicles. A rate of 52000 ha for each officer to control is just indicative, since not all forest law enforcement agents are posted in the field and forests are scattered and non-continuous. Knowledge gaps on the use of electronic devices are also a reason for a weak law enforcement capacity derived by the lack of pilot programs and on-the-job training to gradually shift from the on-going paper based monitoring system to an semi-electronic timber tracking system.

4) Insufficient involvement of stakeholders

A myriad of actors and institutions participate on timber chain of custody information flow. Forest law enforcement encompasses inconsistencies in policies and regulatory framework, excessive bureaucracy, coordination within the forest institution at horizontal and vertical level of hierarchy and between institutions along chain of custody.

Mozambique lacks a strategy on forest law enforcement, governance and timber trade to better respond to increasing pressure demands for timber products without threatening the forest resources sustainability and the national industry development.

Forest data reports, are not available at website and forest operators, communities and NGO's have restrained participation on decision processes that affects their life, such as harvesting quotas, logging practices and information procedures. Inconsistencies on legal aspects reflect on forest users especially at communities. Aspects of participatory management are vague, particularly those related to the extent of community rights, powers and benefits. The mechanisms and regulations for the communities to effectively benefit from the commercialization of forest resources are not adequate (Salomão & Matose, 2007). As a result of the implementation of the Ministerial Act 93/2005 that allows the transference of 20% of stumpage fees to communities residents within areas of forest logging, a universe of 1.089 beneficiary communities were identified in 2013, but only 262 communities and 129 committees received a total of 861.000 US\$ (DNTEF, 2013). On the other hand, the mechanisms for distributing 50 percent of the fines collected from illegal acts to the community members who participated in reporting the misuse has the same slowness. Communities become skeptical that economic benefits will be received and collaborate with illicit business to gain immediate profits. Governmental forest law enforcement agents are also entitled to 50% of the fines collected, but the advantages of bribe collection overcome the uncertainties and slowness of the administrative process.

These aspects enhance the need to involve the various stakeholders on the process for developing a monitoring system to improve forest law compliance in Sofala Province.

2.1.4 Logical framework matrix

Table 6 – Logical framework matrix (LFM)

Strategy of intervention	Measurable indicators	Means of verification	Key assumptions
<p>Development objective To reduce illegal logging & forest degradation by strengthening forest governance.</p>	<p>3 years after project completion:</p> <ul style="list-style-type: none"> - <u>Traceability of legality of timber products in main Provinces established (Sofala, Zambézia, Cabo Delgado).</u> - Verification of origin and timber tracking approved for up-scaling to nationwide. - <u>Illegal logging reduced to 30% of licensed harvesting</u> 	<p>Reports on Traceability systems.</p>	<p>Stakeholders are willing to adopt modifications to monitoring and control improvement;</p>
<p>Specific objective To improve monitoring and control systems for forest law compliance in Mozambique by developing and test the use of e-tracking systems.</p>	<p>At project completion:</p> <ul style="list-style-type: none"> - Electronic Timber tracking system developed and approved for up-scaling at national level. - Introduction of geo-referencing of trees and improved records/ harvesting plan. - <u>70 forest law enforcement agents trained</u> - <u>48 community members trained</u> - <u>18 forest workers trained</u> - <u>illegal logging prevention strategy approved</u> - <u>illegal logging control forum established</u> 	<p>Semi-electronic Timber tracking system in operation.</p> <p>Data and forest statistics reports.</p> <p>Spatial data of harvested trees.</p>	<p>System designed is stronger and better than the on-going paper-based system.</p>
<p>Output 1: Knowledge on illegal logging context and timber chain of custody improved</p>	<p>Illegal logging acts defined and agreed. Legally-produced timber defined <u>and agreed.</u></p> <p>Current patterns of forest offenses assessed. Major infractions and drivers assessed.</p> <p>Chain of custody control inconsistencies and lack of coordination detected.</p> <p><u>Province and regional flows for national / regional and international market supply, assessed for Sofala province.</u></p>	<p>Strategy document.</p> <p>Reports and consultancy studies</p>	<p>Operators and community members <u>are involved</u> and act as a reliable source of information</p>

<p><u>Output 2:</u> The design of a pilot scheme and electronic traceability options for forest monitoring & management improvement.</p>	<p>Timber cruise and tracking system designed & implemented <u>on 6 pilot testing areas;</u></p> <p>Data collection and transmission & handling developed; Origin and legality of timber from pilot logging areas verifiable.</p> <p>Training needs assessed;</p> <p><u>18 logging field workers trained for implement pilot test;</u> <u>48 community members trained</u></p> <p><u>70 forest law agents trained</u> Applications for mobile devices developed and used by community members. Economic advantages and disadvantages, benefits and constraints assessed <u>on different timber tracking options.</u> 1 Workshop implemented for results discussion 1 Article published. Web page/ blog created. Up scaling e-tracking system proposal analyzed.</p>	<p>Labeling system <u>reports;</u></p> <p>Geo location of trees</p> <p><u>Chain of custody database</u></p> <p><u>Training reports</u></p> <p><u>Article</u></p>	<p>System designed improves the current system and costs are acceptable. Applications are simple and user-friendly. Field work <u>and training</u> has to be done during dry season.</p>
<p><u>Output 3</u> Capacity for forest monitoring and control improved.</p>	<p>8 road checkpoints equipped with electronic tools. 1 check point at Beira port established. Provincial database center established.</p>	<p><u>Field & checkpoints inspection database</u></p>	<p>Approval from forest operators and port authorities; Forest operators passing through checkpoints</p>
<p><u>Output 4:</u> Stakeholders involvement improved.</p>	<p>Strategy for forest law enforcement elaborated with stakeholders active participation; Forum for forest law enforcement established and 2 meetings performed during project implementation period. Project webpage created and active. Project blogs created.</p>	<p><u>Webpage data</u></p> <p><u>Training guidelines</u></p> <p><u>Forum reports</u></p> <p><u>Strategy on forest law enforcement.</u></p>	<p>All interests (governmental, business and environmental) balanced with stakeholders actively participating.</p>

2.2 Objectives

2.2.1 Development objectives and impact indicators:

Project development objective is:

To reduce illegal logging and forest degradation by strengthening forest governance.

Impacts indicators are (**3 years after project completion**):

- **Traceability of legality of timber products in main timber production Provinces established (Sofala, Zambézia, Cabo Delgado).**
- Verification of origin and timber tracking approved for up-scaling to nationwide.
- **Illegal logging reduced to 30% of licensed harvesting**

2.2.2 Specific objective and outcome indicators

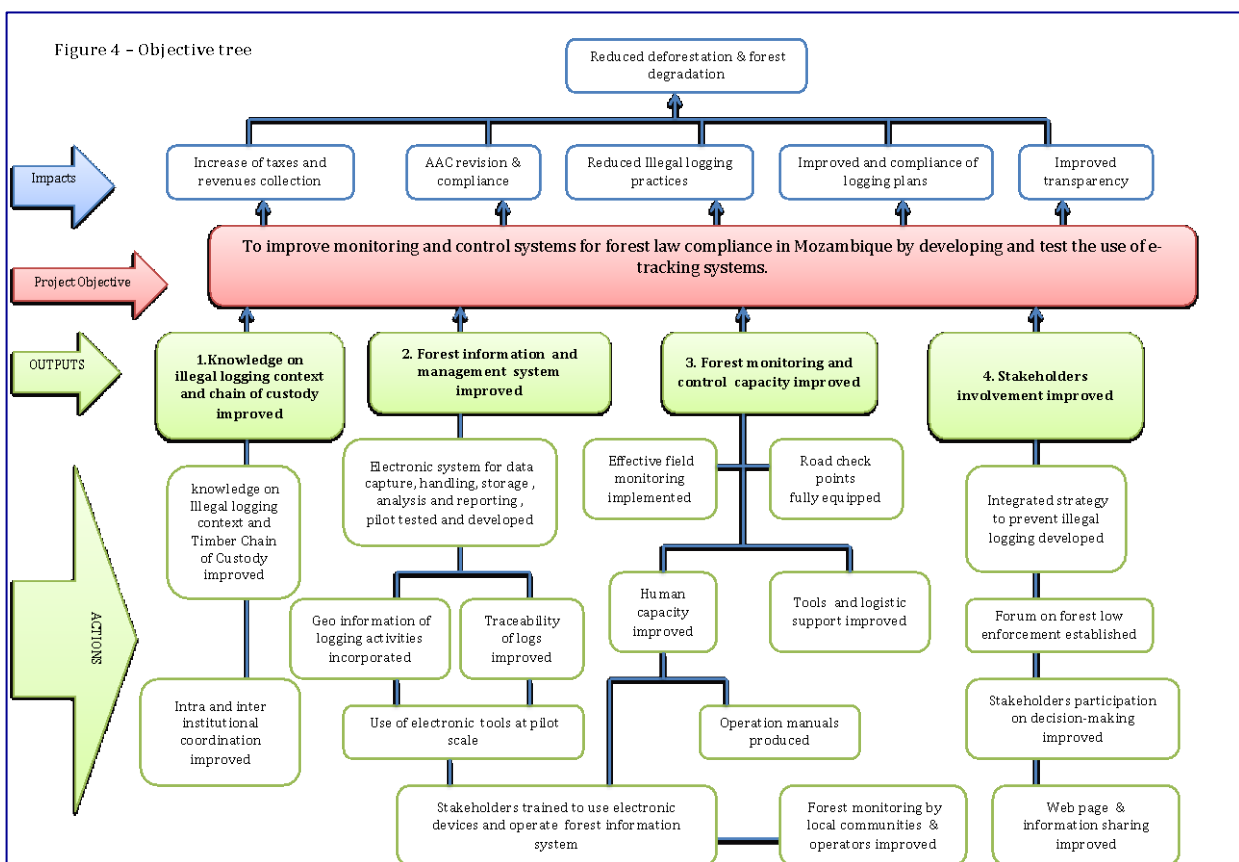
The project specific objective is:

To improve monitoring and control systems for forest law compliance in Mozambique by developing and test the use of e-tracking systems.

Outcome indicators:

- **Electronic Timber tracking system developed and approved for up-scaling at national level.**
- **Introduction of geo-referencing of trees and improved records/ harvesting plan.**
- **70 forest law enforcement agents trained**
- **48 community members trained**
- **18 forest workers trained**
- **illegal logging prevention strategy approved**
- **illegal logging control forum established**

The project objective tree is shown below (figure 4):



3. DESCRIPTION OF PROJECT INTERVENTIONS

3.1 Outputs and activities

3.1.1 Outputs

Four outputs have been defined correspond to the main causes of the problem to be addressed by the project:

- Output 1 - Knowledge of illegal logging context and timber chain of custody improved.
- Output 2 - Pilot scheme and electronic traceability options for forest monitoring & management designed and tested.
- Output 3 - Capacity for forest monitoring and control improved.
- Output 4 - Stakeholders involvement improved.

Indicators of each output are specified in the logical framework matrix in Table 6.

3.1.2 Activities

Output 1: knowledge of illegal logging context and timber chain of custody improved

Activities related to the above project output will produce baseline studies and identify main actors, drivers, institutions, legal and technical gaps at provincial level since each province may have different dynamics and opportunities for illegal logging. Trends and dynamics across regional context will be analyzed.

Activity 1.1 Characterization of trade flows and chain of custody for Sofala timber.

Information regarding stakeholders involved, taxes collected, volumes and species harvested, logging locations, processing and transport routes, markets and legality of the processes are important to analyze the current situation and to elaborate locally applied strategy to prevent and control illegal logging. The baseline study must include an assessment on major forest law and regulations offences to identify institutional, legal, technical and capacity weakness of the current system

Activity 1.2 Characterization of illegal logging context (actors, drivers, institutions and impacts.

Information regarding illegal logging context begins with the definition of legally-produced timber according to the existing legal and regulatory framework that must be complied.

Description of actors and institutions involved on monitoring and implementing the prescribed regulatory framework constitute the baseline study for better understand the illegal logging context in Sofala province. Interviews, field visits, reports checking and survey of regulatory framework will be the source of information.

Output 2: Pilot scheme and electronic traceability options for forest monitoring & management designed and tested.

The current paper based timber tracking method in Mozambique is prone to forgeries and promotes unsustainable use of forest resources. ITTO has assisted member countries to improve statistical systems to monitor timber flows and promotes recent shifting towards electronic tracking technologies and chemical tracking methods. The recent ITTO study on reviewing the electronic and semi-electronic timber tracking technologies, provides a useful and needed reference to design the technical proposal for field-testing of timber cruise and tracking methods adapted to the Mozambican situation and limitations (ITTO,2012).

Activity 2.1 Design appropriate timber cruise and tracking system and identify training needs

Information system will be design considering from tree data at forest harvesting sites, through different custodians until reaching final destination. Simple tools and software applications will be favored and computer database centers at provincial level and roadblocks are needed.

Opens source and adaptability of the system for future improvement introduction is crucial for easier appropriation of the system.

- A 2.1.1 Assess timber cruise methods appropriate for forest concessionaires and simple logging forest operators & communities.

- A.2.1.2 To prepare a detailed technical proposal for field-testing.
- A. 2.1.3 Configuration of platform interface, data capture modes, online data entry and overall environment to implement the technical specifications needed to verify chain of custody and products origin;
- A. 2.1.4 Configuration of the database center to host data.
- A. 2.1.5 System provisioning on hosted infrastructure
- A. 2.1.6 Configuration of a simple system for data capture and transmission at harvesting sites, including software and applications design
- A. 2.1.7 Identify the training needs to implement the proposed e-tracking system.
- A. 2.1.8 Develop and test e-monitoring system by community members on forest operations - pilot areas
- A. 2.1.9 Conduct focus group discussions to disseminate Information on pilot-study and field-testing methodology.

Activity 2.2 Electronic tracking - field testing

This activity consists on implementation of field pilot –testing. For system evaluation comparison field variables must be measured to understand the advantages of the system.

- A. 2.2.1 Selection of pilot operators for field-testing and variables to be studied
- A. 2.2.2 Implement field-testing and data collection;
- A. 2.2.3 Data analysis and report elaboration

Activity 2.3 To train stakeholders to be able to operate timber tracking data capture and transmitting.

- A.2.3.1 Design and production of training modules, manuals and guidelines
- A.2.3.2 Training of users (135 trainees) on the configured system (forest operators, community members, forest law enforcement agents, provincial technical staff)

Activity 2.4 Timber cruise and tracking study results dissemination

- A. 2.4.1 Workshop for activity results dissemination and proposal for scale-up of operations elaborated and discussed.
- A. 2.4.2. Article preparation for newsletter publication

Output 3: Capacity for forest monitoring and control improved

The existing equipment is definitely insufficient to support forest law enforcement in Sofala province.

Activity 3.1: To fully equip checkpoints at major ports (Beira port) and on 8 fixed control roadblock points.

- A.3.1.1 Equip 9 checkpoints (8 checkpoints and 1 additional at beira port) with communication systems and timber chain of custody traceability software;
- A. 3.1.2 Equip provincial datacenter for data retrieve and analysis.
- A. 3.1.3 Implement reports system to different levels;
- A. 3.1.4 establish a system for co-enforcement of rules and regulations.

Output 4: Stakeholders involvement improved

Stakeholders involvement during all project is fundamental for successful introduction of modifications on the current monitoring and control system and open discussions on harvesting quotas, illegal actions prevention and **during** strategy for law enforcement formulation.

Activity 4.1 Promote information sharing (web page, blogs, “green lines”.)

Project data collected and analyzed will be displayed at a webpage as well as training manuals and leaflets to improve information sharing and **awareness campaigns**.

Activity 4.2 Elaborate Provincial Strategy for prevention and control of illegal logging

Based on baseline studies, field pilot activities results and conclusions a **provincial** strategy for illegal logging control and prevention will be formulated. Provincial strategy will allow to tackle illegal logging related to forest ecosystem specific characteristics, culture and locally established communities rules, existing and

future access and market infrastructure as well as the unique characteristics of forest operators in each province.

Activity 4.3 Establish illegal logging control forum in Sofala province

Illegal logging combat and control implies the establishment of transparent procedures and independent verification of chain of custody registration and tracking systems. Involvement of civil society, national and international non-governmental organizations, research agencies, shipping and handling companies, port authorities and custom officers, forest operators and communities are key element for the all exercise of design and implement a strategy for illegal logging reduction. The establishment of independent illegal logging control forum in Sofala province will help to include civil society on the solution search for a problem that affects all.

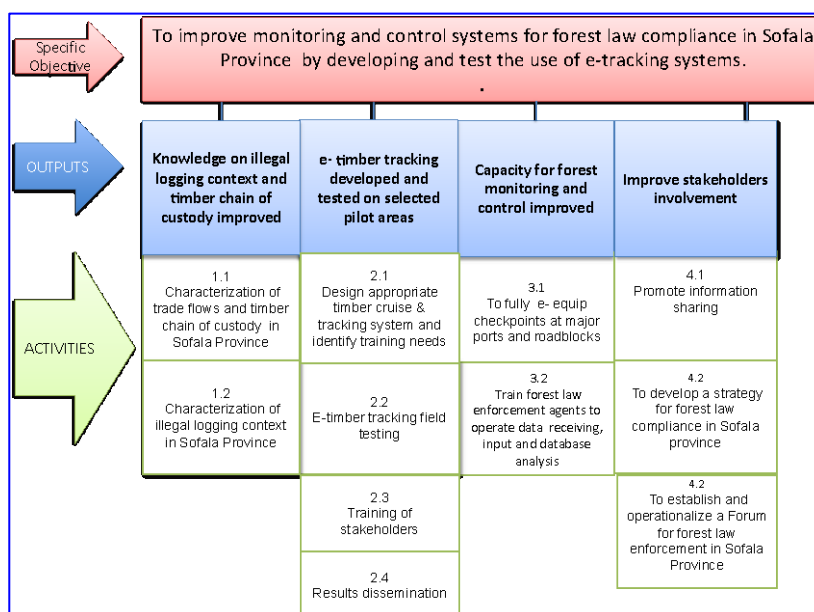


Figure 5 - Work breakdown structure

3.2 Implementation approaches and methods

The project approach is based in 5 pillars:

1. Integrated monitoring system

Monitoring system is mostly based on permanent roadblocks and eventually some mobile teams do routine vigilant activities. Law enforcement team lack communication to a database system to verify accuracy and legality of authorizations provided on roadside and illegalities are usually settled on the site with benefits to all parties involved. The utilization of timber tracking systems (labeling, barcodes) integrate with a database available to law enforcement agents will reduce illegalities. The project seeks to introduce data capture and transmission to a central provincial database, which can be accessed by law enforcement agents and governmental officers anywhere at anytime.

2. Introduction of spatial data

Illegal logging is closely related to harvesting in protected areas, on unauthorized areas and outside demarcated forests concession areas. Origin of trees is an important information for forest volumes control and monitoring. The project pursues the introduction of GPS data for harvested trees to complement the information on measurements (diameter and length), species and enumeration system. This implies the change of ongoing tree recording only at log yards and not at harvesting sites. GPS operation might be a challenge and project intends to develop an application for mobile phones that allow the storage of GPS information. Spatial information is crucial for conflicts reduction among operators and communities and to implement effective forest management.

3. Involvement of forest operators and community members on pilot timber tracking study implementation

Forest operators and more specifically harvesting teams are important stakeholders to any modifications proposed on registration procedures. They will be closely involved in the all process of pilot testing of timber tracking methods and have a crucial on evaluating results. They will be involved in project results dissemination and further implementation by other operators. On the other hand, community members will be involved in the use of electronic application for recording of tree coordinates and data transmission. This will be an innovative approach based on the wide use of sms messaging and open sources softwares(such as Ushahidi) will be explored.

4. Involvement of civil society on illegal logging control

The establishment of illegal logging control forum in each province will provide a platform for discussion and improvement on monitoring of forest activities at local level. Participation of Non Governmental Organizations, research institutions, private consulting companies and forest operators, is an important step to involve civil society to contribute and participate on solutions for a problem that affects all Mozambicans.

5. System refined by Implementation on experimental basis and seeking simplicity.

The project regards the gradual introduction of electronic timber tracking built on the existing paper-based record system and information handling as the best entry point. The piloting phase seeks the introduction of simple reforms that will allow understanding the system, its advantages and disadvantages and the gradual adoption of an e-governance agenda on the forest sector.

3.3 Work plan for project implementation period

Table 7 - Work plan timetable

OUTPUTS, ACTIVITIES AND TASKS	Responsible party	year 1												year 2		
		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15
Activity 1.1 Characterization of trade flows and timber chain of custody in Sofala Province	Nat. consultant and Int consultant															
Activity 1.2 Characterization of illegal logging context in Sofala Province																
A.1.2.1 Definition of legally-produced timber according to the legal & regulatory framework that must be complied	Nat. consultant and Int consultant															
Activity 2.1 Design an appropriate timber cruise and tracking system and identify training needs assessment																
A.2.1.1 Assess timber cruise method, tools and applications appropriate for forest concessions, simple logging operator & communities.	Nat. consultant and Int. IT consultant															
A.2.1.2 Prepare a detailed technical proposal for field-testing	Nat. consultant and Int. IT consultant															
A.2.1.3 Conduct focus group discussions to disseminate information of field testing methodology	Nat. consultant and Int. IT consultant															
A.2.1.4 Configuration of platform interface, data capture modes, online/offline data entry and overall environment	Nat. consultant and Int. IT consultant															
A.2.1.5 Configuration of the database center to host data.	Nat. consultant and Int. IT consultant															
A.2.1.6 System provisioning on hosted infrastructure	Nat. consultant and Int. IT consultant															
A.2.1.7 Configuration of system for data capture and transmission at harvesting sites (software & applications design)	Nat. consultant and Int. IT consultant															
A.2.1.8 Develop and test e-monitoring system by community members on forest operations - pilot areas																
A.2.1.9 Identify the training needs to implement the proposed system.	Nat. consultant and Int. IT consultant															
Activity 2.2 Field testing on methods and tools for timber cruise and tracking																
A.2.2.1 Field-testing and data collection	int consultant / nat. IT consultant															
A.2.2.2 Data analysis and report elaboration	Int. consultant / nat. IT consultant															
Activity 2.3 To train stakeholder to be able to operate timber tracking data capture & transmission system																
A.2.3.1 Design and production of training modules, manuals and guidelines	Nat. consultant and Int. IT consultant															
A.2.3.2 Training of users (135 trainees) on the configured system (forest operat, community members, forest enforcement law agents, provincial forest staff)	Nat. consultant and Int. IT consultant															
Activity 2.4 Timber cruise and tracking study results dissemination																
A.2.4.1 Provincial workshop for results discussion, dissemination and scale-up actions	ONG/SPFFB															
A.2.4.2 Article preparation for newsletter publication	national consultant / ONG															
Activity 3.1 To e-equip checkpoints at Beira port and fixed roadblocks control points																
A.3.1.1 Equip checkpoints with communication systems and timber chain of custody traceability software.	SPFFB-Beira/ IT consultant															
A.3.1.2 Equip provincial datacenters for data retrieve and analysis.	IT company															
A.3.1.3 Identify and reduce discrepancies on reports system to different levels.	Int IT consultant / SPFFB															
A.3.1.4 Harmonize existing system for co-enforcement of rules and regulations (port, customs, DNTF, communities)	SPFFB															
Activity 3.2 Train forest law enforcement agents to operate data receiving, input and database analysis																
A.3.2.1. Train on data analysis and report production	SPFFB-beira / nat consultant															
Activity 4.1 Informaton sharing																
A.4.1.1 Web page operational at SPFFB	IT national consultant/ONG															
A.4.1.2 Promotion of blogs creation with NGOs and forest operators	IT national consultant/ ONG															
A.4.1.3 Establishment of a "green line" (SMS - based) for unlawful activities	IT national consultant/ONG															
Activity 4.2 Develop a provincial strategy for prevention and control of illegal logging	national consultant company															
Activity 4.3 Establish and operationalize a Forum for illegal logging control & forest management improvement in sofala province	ONG /SPFFB															
Activity 5.1 Establish a project steering committee & project review visits	DNTF															
Activity 5.2 Project launching workshop (activities and methods approved)	SPFFB/DNTF/ITTO/ONG															
Activity 5.3 Project results evaluation & dissemination - national workshop	SPFFB, Beira/ DNTF/ITTO															
Activity 5.4 Internal monitoring and progress report writing	SPFFB/ DNTF															
Activity 5.5 External monitoring, report writing and pilot phase evaluation	ITTO/DNTF															

3.4 Budget

3.4.1 Master Budget by activity

OUT/ACT	Description	budget comp	Category	responsib.	quantity		units	unit costs (US\$)	Tot costs (US\$)	ITTO		Exec . Agency		
					Y1	Y2				Y1	Y2	Y1	Y2	
Output 1: knowledge on illegal logging context improved														
A 1.1	Activity 1.1 Characterization of trade flows and chain of custody in Sofala province													
	National consultant on forest harvesting/management	131	10	13	logging specialist	2	0	man/month	2500	5000	5000	0	0	0
	International consultant on CoC & TT	141	10	14	CoC specialist	1	0	man/month	8000	8000	8000	0	0	0
	driver	121	10	12		2	0	man/month	900	1800	0	0	1800	0
	travel - DSA for national consultants - forest	311	30	31		60	0	days	90	5400	5400	0	0	0
	travel - DSA for international consultant - forest	312	30	31		30	0	days	90	2700	2700	0	0	0
	DSA driver	313	30	31		60	0	days	60	3600	3600	0	0	0
	International travel	322	30	32		1	0	ticket	1500	1500	1500	0	0	0
	National travel (air tickets - national consultant)	331	30	33		1	0	ticket	500	500	500	0	0	0
	Local transport costs - domestic air tickets for intern. Consultant	332	30	33		1	0	ticket	500	500	500	0	0	0
	Premises -office space	411	40	41		2	0	months	500	1000	0	0	1000	0
	fuel	531	50	53		2	0	months	1000	2000	2000	0	0	0
	office supplies	54	50	54		2	0	months	200	400	400	0	0	0
	contingencies	63	60	63		1	0	month	200	200	200	0	0	0
Subtotal of activity 1.1 - CoC characterization										32600	29800	0	2800	0
A 1.2	Activity 1.2 Characterization of illegal logging context in Sofala province													
	National consultant on forest harvesting/management	131	10	13	logging/legal specialist	2	0	man/month	2500	5000	5000	0	0	0
	driver	121	10	12		2	0	man/month	900	1800	0	0	1800	0
	travel - DSA for national consultants forest	311	30	31		50	10	days	90	5400	4500	900	0	0
	DSA driver	313	30	31		60	0	days	60	3600	3600	0	0	0
	Premises -office space	411	40	41		2	0	months	500	1000	0	0	1000	0
	Fuel	531	50	53		2	0	months	1000	2000	2000	0	0	0
	office supplies	54	50	54		2	0	months	200	400	400	0	0	0
	contingencies	63	60	63		1	0	month	200	200	200	0	0	0
Subtotal of activity 1.2										19400	15700	900	2800	0

OUT/ACT	Description	budget comp	Category	responsib.	quantity		units	unit costs (US\$)	Tot costs (US\$)	ITTO		Exec . Agency		
					Y1	Y2				Y1	Y2	Y1	Y2	
Output 2: Information system and forest management practices improved by developing & test e-timber tracking system on pilot areas														
A2.1	Activity 2.1 Design an appropriate timber cruise and tracking system and identify training needs													
	A.2.1.1 Configuration of database centers and data tracking applications for road blocks and law enforcement agents				int. & national IT specialist									
	A.2.2.2 IT Applications development for community member and forest operators forest harvest monitoring				int. & national IT specialist									
	A. 2.1.3 Prepare a detailed technical proposal for field-testing				int. & national IT specialist									
	A. 2.1.4 Identify the training needs to implement the proposed system;				int. & national IT specialist									
					int. & national IT specialist									
	International consultant (IT specialist)	142	10	14		30	0	man/days	500	15000	15000	0	0	0
	National consultant (IT specialist)	132	10	13		4	0	man/month	3000	12000	12000	0	0	0
	travel -DSA national consultant (IT specialist)	311	30	31		15	15	days	90	2700	1350	1350	0	0
	DSA international consultant (IT specialist)	312	30	31		30	0	days	90	2700	2700	0	0	0
	International Travel (europe-mozambique)	322	30	32		1	0	ticket	1500	1500	1500	0	0	0
	local transport costs - domestic air tickets for national consultant (it specialist)	331	30	33		2	0	ticket	500	1000	1000	0	0	0
	Local transport costs - domestic air tickets for intern. Consultant	332	30	33		1	0	ticket	500	500	500	0	0	0
	Premises -office space	411	40	41		1	0	month	500	500	0	0	500	0
	office supplies	54	50	54		1	0	month	200	200	200	0	0	0
	snacks/ refreshments	611	60	61		0	1	event	100	100	0	100	0	0
	information material	612	60	61		200		leaflets	2	400	400	0	0	0
Subtotal of activity 2.1										36600	34650	1450	500	0

OUT/ACT	Description	budget comp	Category	responsib.	quantity		units	unit costs (US\$)	Tot costs (US\$)	ITTO		Exec . Agency	
					Y1	Y2				Y1	Y2	Y1	Y2
A2.2	Activity 2.2 e-tracking field testing												
	International consultant (IT specialist)	142	10	14	15	0	man/days	500	7500	7500	0	0	0
	National consultant on forest harvesting/management	131	10	13	2	0	man/month	2500	5000	5000	0	0	0
	field workers (5 days x 6 sites x 2 helpers)	122	10	12	60	0	man/days	15	900	900	0	0	0
	law enforcement agents (3 agents x5 daysx6sites)	123	10	12	90	0	man/days	60	5400	5400	0	0	0
	travel - DSA for national consultants forest	311	30	31	45	0	days	90	4050	4050	0	0	0
	DSA international consultants -forest	312	30	31	15	0	days	90	1350	1350	0	0	0
	DSA driver	313	30	31	30	15	days	60	2700	1800	900	0	0
	Log measurement equipment	442	40	44	various	0	various	1500	1500	1500	0	0	0
	labels, tags, bar codes, chips	443	40	44	9	0	set	600	5400	5400	0	0	0
	utilities (camping equipment)	447	40	44	3	0	set	400	1200	1200	0	0	0
	fuel	531	50	53	1.5	0	months	1000	1500	1500	0	0	0
	office supplies	54	50	54	2	0	months	200	400	400	0	0	0
	Contingencies	63	60	63	2	0	months	200	400	400	0	0	0
	subtotal of activity 2.2							37300	36400	900	0	0	0
A2.3	Activity 2.3 Training of stakeholders for using e-tracking system and tools												
	A.2.2.1 Field training for data collection (1 selected pilot area)												
	A.2.2.2 Field training for data storage and reporting (logging sites)												
	A.2.2.3 Road blocks training for data collection, storage and reporting												
	A.2.2.4 Manuals preparation & publication												
	training of forest law enforcement agents and port authorities agents (70 trainees - 25us\$/trainee)	151	10	15	1	0	event	1750	1750	1750	0	0	0
	training of forest operators harvesting workers & community members (66 trainees @ 30us\$/trainee)	152	10	15	1	0	event	1980	1980	1980	0	0	0
	Production and publication of training materials	55	50	55	2	0	event	1000	2000	2000	0	0	0
	Subtotal of activity 2.3							5730	5730	0	0	0	0

OUT/ACT	Description	budget comp	Category	responsib.	quantity		units	unit costs (US\$)	Tot costs (US\$)	ITTO		Exec . Agency	
					Y1	Y2				Y1	Y2	Y1	Y2
A2.4	Activity 2.4 - field testing results dissemination												
	Workshop for project inception and results dissemination (provincial workshop)	153	10	15	1	1	event	1200	2400	1200	1200	0	0
	21. Article preparation for newsletter publication (1 articles)	21	20	21	0	1	article	800	800	0	800	0	0
	Subtotal of activity 2.4								3200	1200	2000	0	0
Output 3 - Capacity for e- monitoring and control of forest law compliance improved													
A3.1	Activity 3.1 To fully equip checkpoints at major ports and fixed roadblocks control points for e-monitoring												
	National consultant (IT expert)- checkpoints IT support	133	10	13	4	0	man/month	300	1200	1200	0	0	0
	travel -DSA national consultant (IT specialist)	311	30	31	15	0	days	90	1350	1350	0	0	0
	capital equipment - computer for database host (SPFFB, port, and 8 fixed checkpoints)	441	40	44	10	0	computer	1600	16000	16000	0	0	0
	internet cables, accessories connections	446	40	44	10	0	accessories	400	4000	4000	0	0	0
	portable data input equipment (2 for each roadblock- label readers)	444	40	44	16	0	tag readers	700	11200	11200	0	0	0
	portable devices with applications for forest site data collection	445	40	44	16	0	celphones	250	4000	4000	0	0	0
	office supplies	54	50	54	2	1	months	200	600	400	200	0	0
	contingencies	63	60	63	3	0	months	200	600	600	0	0	0
	data collection and registration on checkpoints (70 agents)	124	10	12	3	3	months	150	63000	0	0	31500	31500
	subtotal of activity 3.1								101950	38750	200	31500	31500

OUT/ACT	Description	budget comp	Category	responsib.	quantity		units	unit costs (US\$)	Tot costs (US\$)	ITTO		Exec . Agency		
					Y1	Y2				Y1	Y2	Y1	Y2	
Output 4 - stakeholders involvement improved														
A4.1	Activity 4.1 information sharing													
	design of webpage on forest law enforcement forum	613	60	61		1	0	webpage	300	300	300	0	0	0
	media dissemination (radio, tv and newspaper, facebook, blogs)	614	60	61		1	1	lumpsum	200	400	200	200	0	0
	subtotal of activity 4.1								700	500	200	200	0	0
A4.2	Activity 4.2 Develop a provincial strategy for prevention and control of illegal logging		national company											
	National consultant on forest harvesting/management	131	10	13		1	1	man/month	2500	5000	2500	2500	0	0
	travel - DSA for national consultants forest	311	30	31		10	0	days	90	900	900	0	0	0
	National travel (air tickets)	331	30	33		1	0	ticket	500	500	500	0	0	0
	Premisses -office space	411	40	41		1	1	months	500	1000	0	0	500	500
	fuel	531	50	53		0.5	0	months	1000	500	500	0	0	0
	office supplies	54	50	54		1	1	months	200	400	200	200	0	0
	contingencies	63	60	63		1	1	months	200	400	200	200	0	0
	Subtotal of activity 4.2								8700	4800	2900	2900	500	500
A4.3														
	A.4.3.1 Sistematization of projects results													
	Forum meetings	154	10	15		4	0	event	300	1200	1200	0	0	0
	keynote speakers (custom, IMPEX,...)	22	20	22		4	0	national experts	400	1600	1600	0	0	0
	rental of premisses for events	412	40	41		3	1	event	200	800	600	200	0	0
	snacks/ refreshments	611	60	61		4	0	event	100	400	400	0	0	0
	Subtotal of activity 4.3								4000	3800	200	200	0	0
Activity based (sub total)									250180	171330	8750	38100	32000	

NON ACTIVITY - BASED EXPENSES – project governance		budget line				Y1	y2	units	unit costs (US\$)	Tot costs (US\$)	ITTO Y1	ITTOY2	EAY1	EAY2
	Project coordinator (forest specialist- DNTF)	111	10	11		12	3	man/month	1000	15000	12000	3000	0	0
	Provincial project manager (forest specialist - SPFFB)	112	10	11		12	3	man/month	1500	22500	18000	4500	0	0
	financial officer (DNTF)	113	10	11		12	3	man/month	1300	19500	15600	3900	0	0
	Secretary (DNTF)	114	10	11		12	3	man/month	700	10500	8400	2100	0	0
	travel DSA - field inspection (project manager)	314	30	31		30	15	days	90	4050	2700	1350	0	0
	domestic air traveling for project monitoring & evaluation	333	30	33		2	1	tickets	500	1500	1000	500	0	0
	computer equipment at DNTF for database backup (computer, printer, datashow)	441	40	44		2	0	computer	1600	3200	3200	0	0	0
	office material supplies	54	50	54		1	2	months	200	600	200	400	0	0
	Communications	615	60	61		12	3	months	200	3000	2400	600	0	0
	Project auditing	62	60	62		0	1	audit	1800	1800	0	1800	0	0
	Executing agency project management costs	71	70	71				overall	15000	15000	0	0	0	15000
	ITTO monitoring and review	81	80	81		1	0	unit	10000	10000	10000	0	0	0
Subtotal project governance										106650	73500	18150	0	15000
Subtotal (categories 10-81)										356830	244830	26900	38100	47000
	ITTO evaluation (final)	82	80	83		0	1	unit	15000	15000	0		0	0
	Itto project support cost (12% categories 10-82)							overall		34408	0	0	0	0
TOTAL PROJECT COST										406238				

3.4.2 Consolidated budget by component

Category	Description				INPUTS	Inputs Y1	Inputs y2		UNIT COSTS (US\$)	TOTAL (US\$)	ITTO		EA		
											year1	year2	Year1	year2	
10	PROJECT PERSONNEL														
	11.1 Project coordinator (forest specialist- DNTF)	111	10	11	15	12	3	man/month	1000	15000	12000	3000	0	0	
	11.2 Provincial project manager (forest specialist - SPFFB)	112	10	11	15	12	3	man/month	1500	22500	18000	4500	0	0	
	11.3 Financial officer (DNTF)	113	10	11	15	12	3	man/month	1300	19500	15600	3900	0	0	
	11.4 Secretary (DNTF)	114	10	11	15	12	3	man/month	700	10500	8400	2100	0	0	
	12.1 Driver	121	10	12	4	2	0	man/month	900	3600	0	0	3600	0	
	12.2 Field workers (5 days x 6 sites x 2 helpers)	122	10	12	60	60	0	man/days	15	900	900	0	0	0	
	12.3 Law enforcement agents (3 agents x5 daysx6sites)	123	10	12	90	90	0	man/days	60	5400	5400	0	0	0	
	12.4 Data collection and registration on checkpoints (70 agents)	124	10	12	6	3	3	months	150	63000	0	0	31500	31500	
	13.1 National consultant on forest harvesting/management	131	10	13	8	7	1	man/month	2500	20000	17500	2500	0	0	
	13.2 National consultant (IT specialist)	132	10	13	4	4	0	man/month	3000	12000	12000	0	0	0	
	13.3 National consultant (IT expert)-checkpoints IT support/training	133	10	13	6	4	0	man/month	300	1200	1200	0	0	0	
	14.1 International consultant on CoC & TT	141	10	14	1	1	0	man/month	8000	8000	8000	0	0	0	
	14.2 International consultant (IT specialist)	142	10	14	45	45	0	man/days	500	22500	22500	0	0	0	
	15.1 training of forest law enforcement agents and port authorities agents (70 trainees - 25us\$/trainee)	151	10	15	1	1	0	event	1750	1750	1750	0	0	0	
	15.2 training of forest operators harvesting workers & community members (66 trainees @ 30us\$/trainee))	152	10	15	1	1	0	event	1980	1980	1980	0	0	0	
	15.3 Workshop for project inception and results dissemination (provincial workshop)	153	10	15	2	1	1	event	1200	2400	1200	1200	0	0	
15.4 Forum meetings	154	10	15	4	4	0	event	300	1200	1200	0	0	0		
	19 .Component total									211430	127630	17200	35100	31500	
20	SUB-CONTRACTS														
	21. Article preparation for newsletter publication (1 article)	21	20	21	1	0	1	article	800	800	0	800	0	0	
	22. Keynote speakers (custom, IMPEX,...) and presentations	22	20	22	4	4	0	national experts	400	1600	1600	0	0	0	
	29. Component total									2400	1600	800	0	0	
30	TRAVEL														
	31.1 DSA for national consultants - forest /IT specialis	311	30	31	220	195	25	days	90	19800	17550	2250	0	0	
	31.2 DSA for international consultants -timber tracking & IT specialist	312	30	31	75	75	0	days	90	6750	6750	0	0	0	
	31.3 DSA dirver	313	30	31	165	150	15	days	60	9900	9000	900	0	0	
	31.4 DSA for field inspection (project manager)	313	30	31	45	30	15	days	90	4050	2700	1350	0	0	
	32.1 international travel - international consultants	321	30	32	2	2	0	tickets	1500	3000	3000	0	0	0	
	33.1 National consultants - domestic air travel	331	30	33	4	4	0	tickets	500	2000	2000	0	0	0	
	33.2 International consultants - domestic air travel	332	30	33	2	2	0	tickets	500	1000	1000	0	0	0	
33. 3 Air traveling for project monitoring & evaluation	333	30	33	3	2	1	tickets	500	1500	1000	500	0	0		
	39. Component total									48000	43000	5000	0	0	

40	CAPITAL ITEMS													
	41. Premises													
	41.1 Premises -office space	411	40	41	7	6	1	months	500	3500	0	0	3000	500
	41.2 Rental of premises for events	412	40	41	4	3	1	event	200	800	600	200	0	0
	44.1 computer equipement and accessories	441	40	44	12			set	1600	19200	19200	0	0	0
	44.2 log measurement instruments	442	40	44	various			various	1500	1500	1500	0	0	0
	44.3 Labels, tags, bar codes, chips	443	40	44	9	9	0	set	600	5400	5400	0	0	0
	44.4 Portable data input equipment (2 for each roadblock- label readers)	444	40	44	16	16	0	tag readers	700	11200	11200	0	0	0
	44.5 portable devices with applications for forest site data collection	445	40	44	16	16	0	celphones	250	4000	4000	0	0	0
	44.6 internet cables, accessories connections	446	40	44	10	10	0	sets	400	4000	4000	0	0	0
44.7 utilities (camping equipment)	447	40	44	3	3	0	set	400	1200	1200	0	0	0	
	49. Component total								50800	47100	200	3000	500	
50	CONSUMABLE ITEMS													
	53. Utilities													
	53.1 Fuel	531	50	53	6	6	0	months	1000	6000	6000	0	0	0
	54. Office supplies	541	50	54	15	11	4	months	200	3000	2200	800	0	0
	55. Production and publication of training materials	55	50	55	2	2	0	event	1000	2000	2000	0	0	0
	59. Component total								11000	10200	800	0	0	
60	MISCELLANEOUS													
	61. Sundry													
	61.1 Snacks/ refreshments	611	60	61	5	4	1	event	100	500	400	100	0	0
	61.2 Information material	612	60	61	200	200	0	leaflets	2	400	400	0	0	0
	61.3 Webpage design and domain on forest law enforcement forum	613	60	61	1	0		webpage	300	300	300	0	0	0
	61.4 media dissemination (radio, tv and newspaper)	614	60	61	2	1	1	lumpsum	200	400	200	200	0	0
	61.5 Communications	615	60	61	15	12	3	months	200	3000	2400	600	0	0
	62. Project auditing	62	60	62	1	0	1	audit	1800	1800	0	1800	0	0
63. contingencies	63	60	63	9	8	1	month	200	1800	1600	200	0	0	
	69. Component total:								8200	5300	2900	0	0	
70	NATIONAL MANAGEMENT COSTS													
	71. Executing agency project management costs	71	70	71				overall	15000	15000	0	0	0	15000
	79.Component total								15000	0	0	0	15000	
80	PROJECT MONITORING & ADMINISTRATION													
	81. ITTO monitoring and review	81	80	81	1	1	0	unit	10000	10000	10000	0	0	0
	Subtotal (11-81)								356830	244830	26900	38100	47000	
	82. ITTO evaluation (final)	83	80	83	1	1	0	unit	15000	15000				
	85. ITTO programme support (12% of 11-82)									34408				
	GRAND-TOTAL								406238					

3.4.3 ITTO budget by component

Category	Description	UNIT COSTS (US\$)	ITTO		Total ITTO US\$	
			year 1	year2		
10	PROJECT PERSONNEL					
	11.1	Project coordinator (forest specialist-DNTF)	1000	12000	3000	15000
	11.2	Provincial project manager (forest specialist - SPFFB)	1500	18000	4500	22500
	11.3	Financial officer (DNTF)	1300	15600	3900	19500
	11.4	Secretary (DNTF)	700	8400	2100	10500
	12.1	Driver	900	0	0	0
	12.2	Field workers (5 days x 6 sites x 2 helpers)	15	900	0	900
	12.3	Law enforcement agents (3 agents x5 daysx6sites)	60	5400	0	5400
	12.4	Data collection and registration on checkpoints (70 agents)	150	0	0	0
	13.1	National consultant on forest harvesting/management	2500	17500	2500	20000
	13.2	National consultant (IT specialist)	3000	12000	0	12000
	13.3	National consultant (IT expert)-checkpoints IT support/ training	300	1200	0	1200
	14.1	International consultant on CoC & TT	8000	8000	0	8000
	14.2	International consultant (IT specialist)	500	22500	0	22500
	15.1	training of forest law enforcement agents and port authorities agents (70 trainees - 25us\$/trainee)	1750	1750	0	1750
	15.2	training of forest operators harvesting workers & community members (66 trainees @ 30us\$/trainee))	1980	1980	0	1980
	15.3	Workshop for project inception and results dissemination (provincial workshop)	1200	1200	1200	2400
	15.4	Forum meetings	300	1200	0	1200
	19 .Component total		127630	17200	144830	
20	SUB-CONTRACTS					
	21.	Article preparation for newsletter publication (1 article)	800	0	800	800
	22.	Keynote speakers (custom, IMPEX,...) and presentations	400	1600	0	1600
	29. Component total		1600	800	2400	
30	TRAVEL					
	31.1	DSA for national consultants - forest /IT specialis	90	17550	2250	19800
	31.2	DSA for international consultants - timber tracking & IT specialist	90	6750	0	6750
	31.3	DSA dirver	60	9000	900	9900
	31.4	DSA for field inspection (project manager)	90	2700	1350	4050
	32.1	international travel - international consultants	1500	3000	0	3000
	33.1	National consultants - domestic air travel	500	2000	0	2000
	33.2	International consultants - domestic air travel	500	1000	0	1000
	33.3	Air traveling for project monitoring & evaluation	500	1000	500	1500
	39. Component total		43000	5000	48000	

Category	Description	UNIT COSTS (US\$)	ITTO		Total ITTO US\$
			year 1	year2	
40	CAPITAL ITEMS				
	41. Premises				
	41.1 Premises -office space	500	0	0	0
	41.2 Rental of premises for events	200	600	200	800
	44.1 computer equipment and accessories	1600	19200	0	19200
	44.2 log measurement instruments	1500	1500	0	1500
	44.3 Labels, tags, bar codes, chips	600	5400	0	5400
	44.4 Portable data input equipment (2 for each roadblock- label readers)	700	11200	0	11200
	44.5 portable devices with applications for forest site data collection	250	4000	0	4000
	44.6 internet cables, accessories connections	400	4000	0	4000
	44.7 utilities (camping equipment)	400	1200	0	1200
	49. Component total		47100	200	47300
50	CONSUMABLE ITEMS				
	53. Utilities				0
	53.1 Fuel	1000	6000	0	6000
	54. Office supplies	200	2200	800	3000
	55. Production and publication of training materials	1000	2000	0	2000
	59. Component total		10200	800	11000
60	MISCELLANEOUS				
	61. Sundry				
	61.1 Snacks/ refreshments	100	400	100	500
	61.2 Information material	2	400	0	400
	61.3 Webpage design and domain on forest law enforcement forum	300	300	0	300
	61.4 media dissemination (radio, tv and newspaper)	200	200	200	400
	61.5 Communications	200	2400	600	3000
	62. Project auditing	1800	0	1800	1800
63. contingencies	200	1600	200	1800	
	69. Component total:		5300	2900	8200
70	NATIONAL MANAGEMENT COSTS				
	71. Executing agency project management costs	15000	0	0	0
	79.Component total		0	0	0
80	PROJECT MONITORING & ADMINISTRATION				
	81. ITTO monitoring and review	10000	10000	0	10000
	Subtotal (11-81)		244830	26900	271730
	82. ITTO evaluation (final)	15000		15000	15000
	85. ITTO programme support (12% of 11-82)	34408			34408
	GRAND-TOTAL				321138

3.4.4. Executing Agency (DNTF) Budget by component

Category	Description	UNIT COSTS (US\$)	EA		Total EA US\$
			Year 1	year 2	
10	PROJECT PERSONNEL				
	11.1 Project coordinator (forest specialist- DNTF)	1000	0	0	0
	11.2 Provincial project manager (forest specialist - SPFFB)	1500	0	0	0
	11.3 Financial officer (DNTF)	1300	0	0	0
	11.4 Secretary (DNTF)	700	0	0	0
	12.1 Driver	900	3600	0	3600
	12.2 Field workers (5 days x 6 sites x 2 helpers)	15	0	0	0
	12.3 Law enforcement agents (3 agents x5 daysx6sites)	60	0	0	0
	12.4 Data collection and registration on checkpoints (70 agents)	150	31500	31500	63000
	13.1 National consultant on forest harvesting/management	2500	0	0	0
	13.2 National consultant (IT specialist)	3000	0	0	0
	13.3 National consultant (IT expert)-checkpoints IT support/ training	300	0	0	0
	14.1 International consultant on CoC & TT	8000	0	0	0
	14.2 International consultant (IT specialist)	500	0	0	0
	15.1 training of forest law enforcement agents and port authorities agents (70 trainees - 25us\$/trainee)	1750	0	0	0
	15.2 training of forest operators harvesting workers & community members (66 trainees @ 30us\$/trainee)	1980	0	0	0
	15.3 Workshop for project inception and results dissemination (provincial workshop)	1200	0	0	0
	15.4 Forum meetings	300	0	0	0
	19 .Component total		35100	31500	66600
20	SUB-CONTRACTS				
	21. Article preparation for newsletter publication (1 article)	800	0	0	0
	22. Keynote speakers (custom, IMPEX,...) and presentations	400	0	0	0
	29. Component total		0	0	0
30	TRAVEL				
	31.1 DSA for national consultants - forest /IT specialis	90	0	0	0
	31.2 DSA for international consultants -timber tracking & IT specialist	90	0	0	0
	31.3 DSA dirver	60	0	0	0
	31.4 DSA for field inspection (project manager)	90	0	0	0
	32.1 international travel - international consultants	1500	0	0	0
	33.1 National consultants - domestic air travel	500	0	0	0
	33.2 International consultants - domestic air travel	500	0	0	0
	33.3 Air traveling for project monitoring & evaluation	500	0	0	0
	39. Component total		0	0	0

Category	Description	UNIT COSTS (US\$)	EA		Total EA US\$
			Year 1	year 2	
40	CAPITAL ITEMS				
	41. Premises				
	41.1 Premises -office space	500	3000	500	3500
	41.2 Rental of premises for events	200	0	0	0
	44.1 computer equipment and accessories	1600	0	0	0
	44.2 log measurement instruments	1500	0	0	0
	44.3 Labels, tags, bar codes, chips	600	0	0	0
	44.4 Portable data input equipment (2 for each roadblock- label readers)	700	0	0	0
	44.5 portable devices with applications for forest site data collection	250	0	0	0
	44.6 internet cables, accessories connections	400	0	0	0
	44.7 utilities (camping equipment)	400	0	0	0
	49. Component total		3000	500	3500
50	CONSUMABLE ITEMS				
	53.1 Fuel	1000	0	0	0
	54. Office supplies	200	0	0	0
	55. Production and publication of training materials	1000	0	0	0
	59. Component total		0	0	0
60	MISCELLANEOUS				
	61. Sundry				
	61.1 Snacks/ refreshments	100	0	0	0
	61.2 Information material	2	0	0	0
	61.3 Webpage design and domain on forest law enforcement forum	300	0	0	0
	61.4 media dissemination (radio, tv and newspaper)	200	0	0	0
	61.5 Communications	200	0	0	0
	62. Project auditing	1800	0	0	0
	63. contingencies	200	0	0	0
	69. Component total:		0	0	0
70	NATIONAL MANAGEMENT COSTS				
	71. Executing agency project management costs	15000	0	15000	15000
	79.Component total		0	15000	15000
80	PROJECT MONITORING & ADMINISTRATION				
	81. ITTO monitoring and review	10000	0	0	0
	Total - EA		38100	47000	85100

3.5 Assumptions, risks, sustainability

3.5.1 Assumptions and risks

Nr.	Assumptions	Risks	Mitigation measures
1	There is institutional and social commitment and willingness to fight illegal logging	Some stakeholders will continue to support illegal logging;	Involve civil society and NGO's as main supporters of project objectives
2	Forest professional sector and forest operators do not accept the introduction of timber tracking and control improvement;	The project results will be confined to pilot areas.	Design an appropriate system to local conditions and realities; Training of foresters and field workers;
3	Safety and peace in Sofala province	Armed conflict and social unrest , will restrict project activities.	Choose a different province and safe areas for pilot testing.
4	The project will solve the problem of illegal logging in Mozambique.	High expectations of public and technicians	Present the timber tracking as a tool with limitations and operated by humans.

3.5.2 Sustainability

This project proposal has the potential to be a catalyzer for introducing better governance in forest sector and project follow-up can be financed with funds from national development budget once the technical aspects are proved to be adapted to the country situation, and professionals and public gain a better knowledge of illegal logging actors, drivers, revenues losses, legislation and procedures gaps.

With the envisage of long-term sustainability on project follow-up, the national directorate of forestry was selected as the implementation agency considering its national scope and State budget operation.

Long term funding options will be studied:

- Self-budgeting from law enforcement fines and taxes or through national budget.
- The involvement of a governmental institution (DNTF) as the project executing agency creates the possibility to gradual introduce changes approved during project implementation through the national budget allocations.
- Fund raising with national and international partners;

ITTO, with experience with forest industries development, forest management sustainable indicators pioneer work and more recently timber tracking for illegal logging control is the most suited partner for an innovative project.

4. IMPLEMENTATION ARRANGEMENTS

4.1 Project executing agency and organization structure

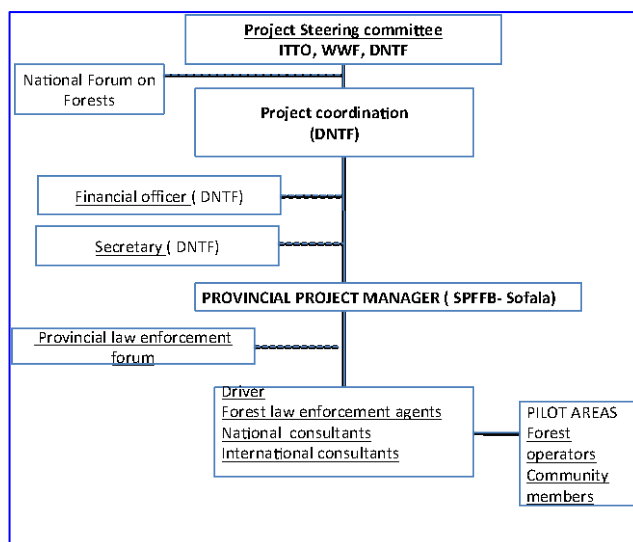
DNTF (National Directorate of Land and Forests), will be the Executing Agency responsible for project management and implementation, as well as coordination with the host country government and ITTO. As the governmental institution responsible for Mozambican forest administration it has accumulated experience in working with different donors and multiple organizations and is supported by provincial branches and forest law enforcement agents.

The DNTF will be responsible for the overall project management and results. Specifically for:

- Chairman the project steering committee.
- Selecting and organizing the project team & consultants.
- Managing project budget and timetable schedule.
- Coordinate with collaborating provincial branch (SPFFB-Sofala)
- Coordinate with NGO's and collaborating institutions and forest operators.
- Report to ITTO (progress reports) and participate on project review visits.
- Participate on project workshops.

- Design a funding proposal for up-scaling of timber tracking innovations and reforms to national scale (project follow up).

Figure 6 – Project management structure



The provincial forest services in Sofala will be responsible for daily implementation of project activities. Specifically:

- **to assign counterparts to national and international the consultants ;**
- **to plan and implement daily project activities and workplan**
- **to organize workshops and training sessions;**
- **to prepare progress reports**
- **to link with selected pilot forest operators and community members**
- **to disseminate information and projects results through internet page;**
- **to interpret results and logging database analysis and operation**
- **to promote awareness campaigns on illegal logging at community level and for general public.**

At forest pilot areas, the forest operators will be responsible for:

- **To assign harvesting team members for pilot project activities;**
- **To participate and collaborate on awareness campaigns for illegal logging reduction at community level.**
- **To disseminate pilot results and participate on workshops for project analysis and results dissemination**

4.2 Project steering committee

The Project Steering Committee (PSC) has the primary role of project implementation guidance and will be responsible for approving work plans and budgets reviews and propose changes of activities and to carry out periodic monitoring of project outputs and indicators.

The Project steering committee comprises representatives of the following institutions:

DNTF: which is the ITTO's contact point in Mozambique. It is the governmental entity responsible for ensuring the sustainable management of natural resources in the country. In addition to the submission and negotiation of the project with ITTO, DNTF will ensure its supervision and adequate implementation, **and will appoint a chairperson of the committee.**

ITTO: The organization responsible for approving and ensuring the necessary financial resources for the implementation of the project. ITTO officials will participate in the Project Steering Committee meetings for the approval of plans and budgets as required.

NGO: Representatives of one or more relevant non-governmental organization of global scope in natural resource conservation policies (**WWF**.) will be responsible for the conduction of the project's monitoring and review and to participate on project steering committee, forums and project workshops.

Donor representative(s), which ensure supervision and adequate implementation.

The project steering committee will involve the National Forum on Forests as the national body for civil society representatives engaged in forest governance in order to obtain civil society participation on projects discussions and illegal logging control strategy that will meet at least once a year.

4.3 Project management team

Project team	Institution	Duties	Financing source
Project coordinator – Forest specialist	DNTF	Will ensure the technical and financial coordination of the project and acts as the secretary of the steering committee.	ITTO
Financial officer	DNTF	Management, control, procurement and distribution of the project's financial and material resources. Preparing and submitting the project financial reports, stocktaking and accounting statements to the Project coordinator.	ITTO
Secretary	DNTF	Maintain all documentation related to the project, such as contracts, protocols, minutes and memorandums regarding daily project administration.	ITTO
Project director	SPFFB	Will ensure the technical implementation at provincial and field level and will act as secretary of the Provincial Forum on Forest Law Enforcement and will coordinate the provincial strategy on forest law enforcement formulation.	ITTO
National consultant - forest logging & management	To be selected	CoC for analysis baseline study for sofala province and illegal logging context; Promote discussions with forest operators and participate on workshops; Field testing of e-tracking; Training of stakeholders. Prepare article for publication on project activities and results. Provincial strategy for illegal logging prevention formulation Will work with close relation with CoC international specialist;	ITTO
National consultant - ICT specialist	To be selected	Equip road-blocks and port for e-tracking Creates provincial database center; Asses training needs and will prepare manuals for training purposes; Web page design and maintenance; Training of users; Will work in close relation with international IT specialist on mobile application design and stakeholders involvement;	ITTO
International Consultant -CoC Specialist -	To be selected	Analysis of CoC procedures, trade flow and timber chain of custody for Sofala province. Prepare a proposal for timber tracking options to field test.	ITTO

International IT specialist - consultant	To be selected	Design mobile application for geo-referencing of harvested trees and a strategy for participation and capacity building among local communities and interfaces to enable data sharing from several sources ; it will work in close relation with national IT specialist.	ITTO
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4.4 REPORTING, REVIEW, MONITORING AND EVALUATION

4.4.1 Project progress reports

Three progress reports will be prepared during project duration. The first progress report will be at the end of assessment phase when baseline studies on illegal logging and chain of custody have been completed. The subsequent reports will follow a sequence on time of 4 months in between each progress report. Such reports will be submitted in the format stipulated by ITTO and according to the schedule of activities approved by the Steering Committee.

4.4.2 Project technical reports

In addition to the progress reports, technical reports will be prepared on the implementation of activities and on the gradual achievements of outputs. An article will be prepared after pilot results evaluation for the ITTO newsletter *Tropical Forest Update*. The project management team will prepare reports on regional workshops for illegal logging control strategy discussion and adoption.

4.4.3 Project completion report

This report will be submitted to ITTO within 1 month of project completion (until end of month 15) and will be based on the technical reports and progress reports.

4.4.4 Steering Committee monitoring and review visits

The implementation of the Project will be subject to monitoring and evaluation by steering committee officials in two occasions: in the beginning of project activities to validate methodology and officially launch project initialization. The subsequent visit will be around month 10, after pilot test and road -blocks equipped and train to operate the system. The Project Coordinator from DNTF and ITTO officials will jointly determine dates for these evaluations and supervision visits.

4.5 Dissemination and mainstreaming of project learning

Considering that this project proposal will introduce new procedures for timber tracking and origin control of harvested logs as well as the formulation of illegal logging control strategies, project results will be ample disseminated using the regional workshops and media coverage of these events.

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Annex 1 – profile of the executing agency

The National Directorate of Land and Forests (DNTF) within the Ministry of Agriculture is the governmental body responsible to administer and supervise the use of the forest patrimony. The national directorate mandate is branched to provincial levels where the provincial services of forest and wildlife (SPFFB) are responsible for licensing issuing and forest law enforcement.

The ongoing programs and projects are listed below:

Nº	Project / Program name	Fund/ Country	Type of Fund	Objective	Target Area	Start date	End date	amount	Resp.	E. Agency
1	Land access	USA	External (Offbudget)	Improve land access and tenure within rural & Zambézia, C. Delgado and Niassal.	Zambézia, Nampula, Cabo Delgado & Niassa	2008	2013	USD 39.049.959	MCA/D NTF	Civil servants contracted.
2	Support program to forest sector in Mozambique (APRONAF)	Finland	Onbudget	To strength the forest sector capacity to promote sustainable forest management and poverty reduction;	Niassa, Cabo Delgado, Nampula & Zambézia provinces	5 years: August 2009	July 2014	11,45 million Euro		DNTF/ MINAG
3	Forest conservation program	Japan	Offbudget	Financial and institutional support (equipment and tools) to DNTF/SPFFB for forest inventory within REDD+ context.	National level			USD 7 million (700 million Yens)	DNTF/ MINAG	DNTF/ MINAG
4	Support program to rural development (PADR: Component	Italy		Support DNTF in : a (i) Integrate SIG forests with land records (ii) improve control & monitoring capacity of SPGC & SPFFB (iii) to strength the community involvement in forest management	8 Districts : Gondola, Sussundenga, Bárue & Manica(Manica); Nhamatanda, Dondo, Chibabava & Gorongosa(Sofala).	March 2009	Dic 2012	Euro 1.318.000	DE / MINAG	SPGC/SP FFB/DNTF / MINAG

5	GCP/INT/812/MUL - National forest program Facility	Multilateral funds	Offbudget	(i) To facilitate the implementation of a national programme of forests and wildlife (PNFFB); (ii) to improve the enabling environment for implementing the PNFFB; (iii) to support key activities of PNFFB e (iv) to intermediate for problem resolution	Maputo, Gaza, Inhambane, Sofala & Tete .	30-Jan-02	31-Dic-11	USD 111.000	FAO	APDC (Beira); SDAE (Matutuine -Maputo); DPA (Sofala); ADCR (Xai-xai); IUCN Moçambique (Maputo); FAEF/DEF -JEM (Maputo); Associação Zambézia Online (Maputo)
6	GCP/INT/064/EC.3. - Forest law enforcement strengthening F	European Union	Offbudget	To strength the forest law enforcement capacity	Mocuba (Zambezia)	1-Jan-11	31-Dic-11	USD 105.210	FAO	DNTF/SPF FB da Zambézia
7	TCP/MOZ/MOZ/330 1 – Support the implementation of the national strategy on human/animal conflict prevention	FAO	Offbudget	Establish the path for the implementation of the national strategy	Nacional	1 July 2010	30-Jun-12	USD 398.000	FAO	DNTF (MINAG) DNAC (MITUR), DNGA & DINAPOT (MICOA) and DAR (MOPH)
8	TCP/MOZ/3402 – Technical support on Land Forum	FAO	Offbudget	Technical support to the Land Consultative Forum to sustainably manage land and natural resources	DNTF/Maputo	Jan 2013	Dic 2013	USD 360.000	DNTF/ MINAG	DNTF/Sec retariat of FCT
9	Support program to institutional building of land sector - GesTerra	Dutch and Swedish Embassies	Offbudget 1's 2 years and onbudget from 3º to 5º year.	(i) Guarantee the continuity of forest sector contributions to land policies and sector; a; (ii) to strength DNTF capacity to fulfill its role on management and land administration.	DNTF/SPGCs	Aug. 2013	Dic 2017	USD 15.820.000	DNTF/ MINAG	DNTF/ SPGC

The main NGO's collaborating in Sofala province with the SPFFB are:

NGO's	Hadquarters location	Areas of main Intervention	Districts
ORAM	<i>Beira - Bairro de Palmeiras</i>	<i>Land & Forests (community organization and land demarcation & legalization)</i>	<i>all districts of sofala province</i>
ADEL Sofala	<i>Beira - Bairro de Matacuane</i>	<i>Forests and environment (community organization, reforestation, micro-credit and improved stoves)</i>	<i>all districts of sofala province, except Machanga</i>
Kulima	<i>Beira - city</i>	<i>Forests and environment (Community organization, reforestation, micro-credit and improved stoves)</i>	<i>all districts of sofala province</i>
Enverotrade	<i>Manica - Chimoio</i>	<i>Forests and environment (Reforestation - carbon sequestration)</i>	<i>Gorongosa, Cheringoma and Marromeu</i>
ABIODES	<i>Dondo - Vila</i>	<i>Forests and environment</i>	<i>Dondo and Muanza</i>

Annex 2 – Tasks and responsibilities of key experts provided by the executing agency

PROJECT COORDINATOR –TERMS OF REFERENCE

DNTF / MINAG

Duties:

- Coordinate with the Project Steering and collaborating partners (WWF/ITTO) for project supervision;
- Responsible for project planning, monitoring and evaluation procedures.
- Coordinate the technical aspects of the project providing technical and administrative assistance to SPFFB – Sofala;
- Coordinate the financial execution of the project and administrative procedures for personal and consultants contracting and assignment.
- Facilitate coordination mechanisms and strategic partnerships with private companies related to the legal timber trade
- Elaborate and ensure prompt delivery of project progress reports to project funding agency (ITTO) according to the work plan.
- Represent the project image (public, media, ngo's and government)

Expertise:

- Forest engineer
- Experience in the management of forest development projects.
- Experience in the management of international cooperation funds.
- Familiar with forest governance and forest harvesting and management.
- At least 2 years experience in timber forest business initiatives and familiar with NGO's working environment.

PROJECT DIRECTOR - TERMS OF REFERENCE

SPFFB – Sofala

Duties:

- Represent the Project to public and collaborating partners (WWF/ITTO, forest operators).
- Assign responsibilities and targets to project support staff (drivers, forest law enforcement agents and technicians, keynote speakers).
- Responsible for project monitoring, activities and progress reports formulation.
- Coordinate the technical aspects of the project providing administrative and technical guidance for selection of pilot areas/ operators and study variables.
- Collaborate with NGO's for forum on law enforcement establishment.
- Facilitate relation mechanisms and strategic partnerships with private companies related to the legal timber trade.
- Represent the project image (public, media, NGO's and government) and promotes information sharing.
- Supervise webpage activity and information disclosure.

Expertise:

- Forest engineer
- Experience in the management of forest development projects.
- Familiar with forest governance and forest harvesting and management in the field.
- At least 2 years experience in timber forest business initiatives and familiar with NGO's working environment;

Annex 3 – Terms of references of consultants funded by ITTO

CHAIN OF CUSTODY - INTERNATIONAL CONSULTANT

The specialist will work with the project team and local counterparts to:

Duties:

1. Provide technical assistance to SPFFB_Sofala to define legally produced timber within the frame of laws that must be complied with in order for a license to be issued and the checks that needs to be made to determine compliance.
2. Provide technical assistance to SPFFB_Sofala to characterize and detect the main flaws of the existing chain of custody procedures being used by the selected pilot operators;
3. Provide technical assistance to SPFFB_Sofala to improve the chain-of-custody procedures for the illegal timber reduction;
4. Advice SPFFB_sofala and the Forum on Law enforcement on the design of a provincial strategy to reduce illegal logging.
5. Present the study findings on Forum for Law Enforcement.

Expertise:

- Professional in forestry science and/or related fields
- Specialized in forest certification and chain-of-custody systems
- Knowledge on timber tracking technologies is highly advisable;
- At least 3 years experience in the design of chain-of-custody mechanisms for forest enterprises
- Knowledge of training methods and willingness to work in rural areas and forest operation areas.

CHAIN OF CUSTODY & TIMBER TRACKING - NATIONAL CONSULTANT

The specialist will work in close relation with the CoC international specialist and Timber tracking international specialist and will provide local knowledge and insight of Mozambican context so that solutions will be adapted to local constraints. It will be responsible to perform the following duties:

Duties:

1. To gather all support information and background references on CoC in Sofala province;
2. Provide technical assistance to SPFFB_Sofala to characterize and detect the main flaws of the existing chain of custody procedures being used by the selected pilot operators;
3. Provide technical assistance to SPFFB_Sofala to improve the chain-of-custody procedures for the illegal timber reduction;
4. Advice SPFFB_sofala and the Forum on Law enforcement on the design of a provincial strategy to reduce illegal logging.
5. Advise on timber tracking options from forest sites to export markets in order to reduce illegal or unknown sources of timber.
6. Present the studies and pilot results findings on Forum for Law Enforcement.

Expertise:

- Professional in forestry science and/or related fields
- Knowledgeable of chain-of-custody systems.
- Knowledge on timber tracking technologies is highly advisable;
- Knowledge of training methods and willingness to work in rural areas and forest operation areas.

TIMBER TRACKING - INTERNATIONAL CONSULTANT

The specialist will use the findings of CoC study and will work in close collaboration with the selected forest operators for:

1. Propose timber tracking options from forest sites to export markets in order to reduce illegal or unknown sources from the CoC;
2. Design a system to verify compliance of main elements of legality definition.
3. Conduct training sessions according to the training needs assessed.
4. Select variables to be studied and data recorded to be tested on pilot areas
5. To supervise the filed testing in pilot area.
6. Present finding at Law enforcement Forum and the perspectives for nationwide introduction of E-timber tracking.

Expertise:

- Professional in forestry science and/or related fields
- Knowledgeable of chain-of-custody systems and timber tracking tools and technology
- Knowledge of training methods
- Flexibility to work in rural areas and forest sites within rough conditions (camping) during pilot testing of timber tracking proposed options;

DATABASE, MOBILE AND WEB APPLICATIONS SPECIALIST – IT INTERNATIONAL CONSULTANT

The specialist will work with the project team and local counterparts to:

1. Research, specify and co-develop a locative mobile application to enable the collection and aggregation of geo-located data relating to illegal timber harvesting and transportation;
2. Develop a strategy for participation, capacity and engagement - building among local communities in use of the application;
3. Provide capacity building inputs for the storage, aggregation and management of data collected by the application within local counterpart institutions;
4. Advise on interfaces to enable data sharing between communities sourced data and that collected by formal timber tracking systems.
5. Train of users to utilize the mobile applications and data transmission;

Required Skills:

- Database and mobile application development experience, including the development and configuration of open source software;
- Knowledge of citizen crowdsourcing initiatives;
- Experience working with forestry datasets;
- Experience of implementing information systems in developing country contexts;

Desirable Skills:

- Knowledge of human-computer interaction and user experience design in a developing country context.
- Prior experience in the African forestry sector.
- Knowledge of timber tracking technologies.

DATABASE, MOBILE AND WEB APPLICATIONS SPECIALIST – ITC NATIONAL CONSULTANT

The specialist will work in close relation with the IT international specialist and will provide local knowledge and insight of Mozambican context. It will be responsible to perform the following duties:

1. Work in close relation with International specialist to fulfill its duties.
2. Install Database center (SPFFB_Beira) and backup system (DNTF_Maputo).
3. Install database storage system and data transmission in road-control posts and harbor.
4. Training of users for mobile applications operation, database input procedures and report handling;
5. Users manual elaboration for training purpose.
6. Web page design and train webpage administrator (SPFFB_Beira) for its update.

Required Skills:

- Database and mobile application development experience, including the development and configuration of open source software;
- Knowledge of citizen crowdsourcing initiatives;
- Experience working with forestry or similar datasets;
- Willingness to work in rural areas and with rough conditions (camping in forest harvesting sites and travel to forest road-blocks).

Annex 4 – Recommendations of ITTO expert panel - Modifications

Recommendations from Forty –ninth Panel	Modifications
1. Ensure the consistency throughout the revised proposal with the focus on Sofala province and Beira harbor. For example, the expectation of illegal logging reduction in Section 1.4 should be adjusted in line with coverage change;	Revised accordingly. By project completion, illegal logging will be reduced to <u>40% of licensed production</u> and a provincial strategy for illegal logging control will be designed.
2. Refine the institutional set-up with clear elaborations on specific roles, responsibilities and capacities of different institutions and agencies to participate in project implementation and the formulation of a feasible implementation strategy;	The project will be implemented at provincial level but under the overall supervision of national directorate of forestry due to its vast experience on projects supervision and national scope.
3. Improve the stakeholder analysis on involvement of communities which is still risky as some of the communities take part in illegal harvesting activities;	Improvement and simplification of the existing mechanism for harvesting fees transfer together with awareness campaigns for illegal logging reduction is considered fundamental to achieve community support.
4. Restructure the Section 2.1.4 and delete the overlapped text before the Logical Framework table;	Revised accordingly;
5. Further improve the indicators for the development and specific objectives with specific and time-bound elements, taking into account the points listed in Section 1.4;	Done accordingly;
6. Delete Output 5 Project Governance which is related to project implementation and monitoring rather than project activities and revise relevant sections accordingly such as work plan and budget tables;	Done.
7. Revise budget structure by reducing the proportion of budget items in personnel and travel for national and international consultants as well as project staff, as the revised proposal is now focusing on pilot implementation within one province. Moreover, reallocate more funds to the second year implementation;	Budget was revised accordingly and travel & personal expenses reduced regarding project monitoring. The revised budget added field personal expenses on checkpoints for timber tracking monitoring. The second year budget refers to 3 months of project implementation since project duration is 15 months.
8. Correct programme support costs for ITTO from 8% to 12% of the total ITTO project costs and recalculate the grand total of the budget	Changed as suggested
9. Increase the counterpart contribution which accounts on 6.5 % of the total budget;	Counterpart contribution increased to 21%
10. Further improve sustainability section on how the funding of activities will be continued after project completion with the state budget;	Project follow-up activities can be incorporated on the state budget for early implementation.
11. Add donor representative (s) as the member of the project steering committee;	Added accordingly.



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International Tropical Timber Organization (ITTO)

N/Ref: 170 WWF-MCO/2014

Maputo, 10th June 2014

Subject: Letter of Intent to Participate in the Implementation of the Project Proposal to Improve Forest Governance in Mozambique "PD732/14" submitted by the Government of Mozambique

Dear Director,

The project proposal aiming to implement a monitoring and control system to prevent illegal logging in Mozambique being developed by the National Directorate of Land and Forests (DNTF) from the Ministry of Agriculture of Mozambique and submitted to the International Tropical Timber Organization (ITTO) addresses one of the major knowledge gaps in the forest sector with respect to the origin of the timber that is harvested and traded in Mozambique. At the same time, the proposal opens a space for participation of a wider range of stakeholders in the discussions of the key challenges, opportunities and interventions needed for improvement of the legal framework and promotion of good practices in the forest sector.

The targeted results under this project proposal, namely, development and implementation of timber tracking methods, creation of enabling environment for improved law enforcement, combating of illegal logging and promotion of participation of wider range of stakeholders in the forest governance are in line with the priority areas of intervention of WWF Mozambique Country Office (WWF MCO). Therefore, WWF MCO is honoured with the invitation from DNTF and agrees to become the implementing partner in this project mainly to support the stakeholders engagement in the development and implementation of tools and methodologies to support the forest governance improvement in Mozambique.

Sincerely,

Anabela Rodrigues

Country Director



A missão da WWF é prevenir a degradação do ambiente natural da Terra e construir um futuro em que os Humanos vivam em harmonia com a Natureza.

President: Chief Emaka Anyaku
Director General: Dr Claude Martin
President Emeritus:
HRH The Duke of Edinburgh

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Also known as World Wildlife Fund

