

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

PROJECT PROPOSAL

TITLE	SUPPORT FOR THE CONSERVATION AND PROMOTION OF FOREST TREE SEEDS IN BENIN
SERIAL NUMBER	PD 921/21 <u>Rev.2</u> (F)
COMMITTEE	REFORESTATION AND FOREST MANAGEMENT
SUBMITTED BY	GOVERNMENT OF THE REPUBLIC OF BENIN
ORIGINAL LANGUAGE	FRENCH

SUMMARY

The unavailability of forest tree seeds, in particular highly logged natural species, also hinders reforestation and soil conservation efforts. **The General Directorate of Water, Forests and Hunting (DGEFC) is responsible for the management of forest resources, but lacks any unit for producing seeds displaying strong characteristics. In addition, for the most part, nursery operators collect seeds from uncontrolled origins.** As a result, appropriate production cannot be ensured and gene flux dissemination is uncontrolled, which could have serious environmental impacts and need to be addressed. The demand in certified forest tree seeds both at the national and international level is increasing and the poor organization of the forest tree seed industry is hampering **the intensive reforestation process** and the development of an improved production system in Benin.

The DGEFC initiated this project to establish a seed production unit for the conservation and promotion of forest tree seeds to address this situation in the long term in Benin. **This project aims to improved access (farmers, private plantation operators, local populations) to forest tree seeds and meet reforestation needs as well as the necessity to enhance the production system for various stakeholders.** ~~Three outputs are expected at project completion: (i) quality seeds are available for forest tree species; (ii) a forest tree seed conservation system has been established and is operational; and (iii) the technical and managerial capacities of grassroots stakeholders have been strengthened.~~

EXECUTING AGENCY	<u>GENERAL DIRECTORATE OF WATER, FORESTS AND HUNTING (DIRECTION GÉNÉRALE DES EAUX, FORÊTS ET CHASSE—DGEFC)</u>	
COLLABORATING AGENCY	NATIONAL TIMBER AGENCY (<i>OFFICE NATIONAL DU BOIS—ONAB</i>)	
DURATION	36 MONTHS	
APPROXIMATE STARTING DATE		
BUDGET AND PROPOSED FUNDING SOURCES	SOURCE	Contribution in US\$
	ITTO	<u>447 072</u>
	BENIN (DGEFC)	<u>107 250</u>
	TOTAL	<u>554 322</u>

TABLE OF CONTENTS

TABLE OF CONTENTS	i
ABBREVIATIONS AND ACRONYMS	vi
PART ONE: PROJECT CONTEXT	1
1. Project context	1
1.1. Origin.....	1
1.2. Project relevance	1
1.2.1. Conformity with ITTO objectives and priorities.....	1
1.2.1.1. Conformity with ITTA, 2006 objectives.....	1
1.2.1.2. Conformity with ITTO Action Plan 2013-2018	2
1.2.1.3. ITTO Policy Guidelines on Gender Equality and Empowering Women	2
1.2.1.4. Environmental and Social Management Guidelines	3
1.2.2. Relevance to the submitting country's policies	3
1.3. Target area.....	4
1.3.1. Geographic location	4
1.3.2. Socio-economic and cultural context.....	5
1.3.3. Environmental context	5
1.4 Expected outcomes at project completion	8
2.1. Rationale	9
2.1.1. Institutional set-up and organizational issues	9
2.1.2. Stakeholder analysis	10
2.1.3. Problem analysis	12
2.1.4. Logical framework matrix	16
2.2. Objectives	17
2.2.1. Development objectives and impact indicators	17
2.2.2. Specific objective et outcome indicators	17
PART THREE: DESCRIPTION OF PROJECT INTERVENTIONS	18
3.1. Outputs and activities	18
3.2. Strategic approaches and methods	18
3.2.1. Implementation strategy for Output 1.....	18
3.2.2. Implementation strategy for Output 2.....	18
3.2.3. Implementation strategy for Output 3.....	18
3.1. Work plan.....	20
3.2. Budget.....	21
3.4.1. Master budget schedule	21
3.4.2. Consolidated budget by component	28
3.4.3. Budget contribution by component - ITTO	29
3.4.4. Budget contribution by component – Executing Agency	29
3.5. Assumptions, risks, sustainability	30

3.5.1. Assumptions and risks	30
3.5.2. Sustainability	30
PART FOUR: IMPLEMENTATION ARRANGEMENTS	32
4.1. Organizational structure and stakeholders participation mechanisms	32
4.1.1. Executing agency and partners	32
4.1.2. Project management team	32
4.1.3. Project Steering Committee.....	32
4.1.4. Stakeholders participation mechanisms	33
4.2. Reporting, review and monitoring and évaluation	33
4.2.1. Project progress report	33
4.2.2. Project completion report	33
4.2.3. Project technical reports.....	33
4.3. Project learning dissemination and mainstreaming	34
4.3.1. Project learning dissemination	34
4.3.2. Project learning mainstreaming	34
ANNEX1: Profile of the Executing Agency.....	35
ANNEX 2: CVs of key personnel provided by the Executing Agency.....	38
ANNEX 3: Terms of reference of personnel and consultants funded by ITTO.....	42
ANNEX 4: Project assessment by the 56th Expert Panel.....	44
ANNEX 5: Recommendations by the 56th Expert Panel and resulting modifications.....	53
ANNEX 6: Project assessment by the 57th Expert Panel.....	48
ANNEX 7: Recommendations by the 57th Expert Panel and resulting modifications.....	51

Project Brief

1. Context and issues to address

For the past decades, forestry research has sought to contribute to improving the genetic quality of seedlings made available to **growers** by selecting individuals or stands from different regions of origin, on the basis of remarkable characteristics potentially able to meet specific requirements. More vigorous and better shaped trees, better origins, seed orchards and cultivars adapted to different environmental contexts, or else capable of providing products that better meet the industry's needs (straightness of the trunk, branch angle). However, the productivity, the resilience of plantations and the quality of timber products also depend on the origin of the seeds. The unavailability of high-quality forest seeds, in particular highly logged natural species, also impedes any forest production increase, and boosting reforestation and **forest productivity** actions.

Today in Benin, the DGEFC lacks a unit for producing seeds displaying strong characteristics and, for the most part, nursery operators collect seeds from uncontrolled origins. As a result, appropriate production cannot be ensured and gene flux dissemination is uncontrolled, which could have serious environmental impacts and need to be addressed. The demand in **high-quality** forest tree seeds both at the national and international level is increasing and the poor organization of the forest tree seed industry is hampering the certification of forest plantations and the development of an improved production system. The DGEFC initiated a project aimed to establish a seed production unit for the conservation and promotion of forest tree species seeds to address this situation in the long term.

2. Objectives and outcome indicators

The project's development objective is to contribute to the rehabilitation and sustainable management of Benin's forest resources through improved access for various stakeholders (farmers, private plantation operators, local populations) to forest tree species seeds for the production of high-quality seedlings in order to meet reforestation needs as well as the necessity to enhance the production system for climate change mitigation. Development objective indicators are as follows: (i) at project completion, the needs in improved forest tree species seeds and seedlings are met; (ii) at project completion, at least 50% of reforested areas are planted with controlled seeds; and (iii) by 2025, the production of rare and threatened forest tree species seeds is mastered.

The project specific objective is to ensure the production of seedlings from controlled seeds in sufficient volume. Specific objective indicators are as follows: (i) at project completion, plots planted with forest tree seeds are inventoried and restored; (ii) the forest tree seed conservation unit and distribution centers are established and operational; (iii) umbrella organizations for forest tree seed producers and distributors are established and operational; and (iv) at project completion, grassroots stakeholder institutional and technical capacities have been developed.

The main expected outcomes at project completion are as follows:

- i) **high-quality seeds are available for forest tree species;**
- ii) **a forest tree seed conservation system has been established and is operational; and**
- iii) **the technical and managerial capacities of grassroots stakeholders have been strengthened.**

3. Beneficiaries

The main project beneficiaries will be: the DGEFC and its technical as well decentralized structures (National Timber Board (*Office National du Bois*—ONAB), Forestry Inspectorates, Forest Management Technical Units, etc.), private plantation owners, forest cooperatives, forest product producers and sellers, industry operators and exporters of forest products, nursery operators, forest tree species seed collectors, Grassroots Community Organizations, forest-surrounding and plantation-surrounding communities in general, technical and financial partners such as the World Bank, FAO, UNDP, ITTO, Economic Community of West African States (ECOWAS), Interpol, etc.

4. Implementation strategy

The project will be implemented in three stages:

- First stage: Conduct of a feasibility study on the establishment of a seed production unit and identification of potential plots for use as seed plots.

- Second stage: Restoration of identified seed plots and establishment of the forest tree seed unit and of its distribution centers, and training of dedicated staff.
- Third stage: Capacity building of the DGEFC, nursery operators and cooperatives of seedling women producers through training with a view to ensuring the production and distribution of controlled forest tree seeds.

5. Sustainability of project outcomes

This project addresses a need long expressed by stakeholders and it will help develop a sustainable forest tree seed supply system. The project's sustainability depends on its ownership by all stakeholders in technical, institutional and political, financial and economic terms:

- In terms of technical sustainability, seedling production and reforestation are activities undertaken by the DGEFC and its technical structures on a routine basis. These structures have skilled personnel to monitor and support the nursery operators and seed collectors. In addition, the DGEFC and FUPRO-BENIN have seedling production sites and natural gazetted forests under management plans. These nurseries and production sites are supported by the DGEFC, the ONAB or FUPRO-BENIN and will produce improved seedlings for reforestation activities in the State-owned forest estate, and for direct sale to private planters interested.
- In terms of financial and economic sustainability, because the DGEFC's management is independent and its structures are granted an autonomous budget, they will be able to secure and develop the project outcomes. Also, the current drive and enthusiasm for plantation establishment in Benin and the proliferation of nursery centers for forest seedlings are opportunities to make the actions and deliverables of this project sustainable.
- In social terms, seedling production is an activity that the Forest Administration already subcontracts to local communities and community-based organizations. This project will help to formalize this arrangement. The collection of seeds, the production of seedlings, seedling planting operations and tending of newly established plantations are a series of sustainable activities that will help reduce unemployment and the rural exodus by providing jobs to local communities that will be providing their labor force in nursery work, the preparation and maintenance of seed-producing sites as well as harvesting and post-harvest operations. Substantial income will be generated for women who will carry out most nursery operations and seed collection work.
- In environmental terms, the project will be a major provider of support for national genetic resource and biodiversity management programs. The establishment of high-yield timber plantations will contribute to increasing timber production, given an equal land area, which is under serious threat.

6. Assumptions and risks

The key assumptions for the success of this project are as follows:

The various stakeholders support and participate in the project: One of the challenges of forest development project implementation is the lack of communication among stakeholders. This project will pay particular attention to this aspect by involving all stakeholders in its implementation work.

The production cost for the high-performing planting stock is affordable to private planters: It is likely that high-quality seeds cost more than seedlings produced from non-certified seeds. To the extent possible, the DGEFC will subsidize the price of seeds sold to cooperatives or associations of nursery operators to maintain the momentum of reforestation. As appropriate, advocacy campaigns on the benefits of using high-quality seed will be organized to encourage users of forest tree seeds to source high-quality seeds.

Risks

The potential risks identified for this project are as follows:

Wildfires / bushfires:

Wildfires can destroy the teak seed plots and seed-tree stands containing local species. The actions to be undertaken to mitigate this risk are as follows:

- To establish firebreaks to protect the plots from wildfire;
- To enlist the help of all umbrella organizations for site and seed plot protection;
- To raise awareness of local communities at critical times;

- To erect billboards and signposts displaying information, educational messages and warnings around the plots and seed-tree stands.

Climate hazards

Climate hazards can result in a reduction plus-tree performance. Resilient varieties adapted to climate change negative impacts will be given priority.

7. Budget contributions

SOURCES	CONTRIBUTION IN US\$
ITTO	<u>447 072</u>
BENIN (DGEFC)	<u>107 250</u>
TOTAL	<u>554 322</u>

ABBREVIATIONS AND ACRONYMS

<u>AIGA</u>	: <u>Alternative Income-Generating Activities</u>
<u>ANUB</u>	: <u>National Users Association</u>
<u>AOP</u>	: <u>Annual operation plan</u>
CBD	: Convention on Biological Diversity
<u>CEP</u>	: <u>“Participatory Coaching” Unit</u>
<u>CERF</u>	: <u>Forest Education and Training Center</u>
CITES	: Convention on International Trade in Endangered Species of Wild Fauna and Flora
CNR	: National Reforestation Campaign (<i>Campagne Nationale de Reboisement</i>)
COGEPAF	: Participatory Forest Management Committee (<i>Comité de Gestion Participative des Forêts</i>)
DGEFC	: General Directorate of Water, Forests and Hunting (<i>Direction Générale des Eaux, Forêts et Chasse</i>)
d-m	: Day-man
EA	: Executing Agency
FAO	: United Nations Organization for Food and Agriculture
FLEGT	: Forest Law Enforcement, Governance and Trade
<u>FRA</u>	: <u>Forest Resources Assessment</u>
FUPRO	: Federation of Producer Organizations
GDF	: Sustainable Forest Management
ha	: Hectare
ITTA	: International Tropical Timber Agreement
ITTO	: International Tropical Timber Organization
JNA	: National Day of Trees
m ³	: Cubic meter
<u>MCVDD</u>	: <u>Ministry of Living Environment and Sustainable Development (<i>Ministère du Cadre de Vie et du Développement Durable</i>)</u>
<u>NGO</u>	: <u>Non-governmental organization</u>
<u>mm</u>	: <u>Millimeter</u>
<u>NTFPs</u>	: <u>Non-timber forest products</u>
ONAB	: National Timber Board (<i>Office National du Bois</i>)
<u>OVIGEPAF</u>	: <u>Village Participatory Forest Management Organizations</u> (<i>Organisations Villageoises de Gestion Participative des Forêts</i>)
PAE	: Environmental Action Plan (<i>Plan d'Action Environnemental</i>)
PAG	: Government Action Program
PAGEFCOM	: Community Forest Management Project
PAPF	: Forest Participatory Management Plans
PCIs	: Principles, criteria and indicators
PGFTR	: Program for the Management of Local Community Forests and Lands (<i>Programme de Gestion des Forêts et Terroirs Riverains</i>)
PIFSAP	: Project to Integrate Sacred Forests in the System of Protection Areas (<i>Projet d'intégration des Forêts Sacrées dans le Système des Aires Protégées</i>)
PNGDRN	: National Program for Sustainable Natural Resources Management (<i>Programme National de Gestion Durable des Ressources Naturelles</i>)
<u>p-m</u>	: <u>person-month</u>
PRI	: Intensive Reforestation Project
SCRIP	: Growth Strategy for Poverty Alleviation (<i>Stratégie de Croissance pour la Réduction de la Pauvreté</i>)
SH	: Stakeholders
SMEs	: Small and Medium Enterprises
SPANB	: Biodiversity Conservation Strategies and National Action Plan (<i>Stratégies et Plan d'Action National pour la Conservation de la Biodiversité</i>)
ToR	: Terms of Reference
UNFCCC	: United Nations Framework Convention on Climate Change
UNCCD	: United Nations Convention to Combat Desertification
<u>\$US</u>	: <u>United States Dollar(s)</u>

PART ONE: PROJECT CONTEXT

1. Project context

1.1. Origin

In Benin, the forest environment is characterized by the degradation and loss of large forest areas each year. The environmental and socio-economic impacts are of a concerning issue for the Government of Benin, which is developing several strategies to curb these trends. The strategies include forest restoration through reforestation. Reforestation is one of the key missions of the General Directorate of Water, Forests and Hunting (DGEFC) and of the National Timber Board (ONAB). Since 1985, a National Reforestation Campaign (CNR) is being held every year in Benin. The CNRs are launched on the National Tree Day celebrated every June 1st and millions of trees are planted each year by public and private structures. Based on this national reforestation effort, all public and private actors are faced with the unavailability/insufficiency of high-quality seeds. There is no structure responsible for the production, conservation and management of forest tree seeds in Benin. Seedling production is carried out by local nurserymen who use seeds from all origins. Such seeds later produce low-quality seedlings and trees, resulting into significant losses and a lack of motivation among private growers.

As part of coordinating reforestation actions throughout the national territory, the DGEFC is responsible for providing all stakeholders with good quality seeds for healthy plantations and ensuring the sustainability of the most vulnerable forest tree species. However, the insufficiency and unavailability of quality seeds are a real problem for reforestation and therefore for the improvement of forest cover and the conservation of biodiversity. Insufficient and poor seed quality are due to irregular fruition, the impacts of climate change on fruiting, low germination rate, difficulties in seed conservation, insufficient seed sources and destruction of seed plots by wild fire and uncontrolled logging. Producing seedlings from certified seeds is becoming an issue of increased concern. In addition, in some plantings realized in recent years, a number of anomalies such as: high mortality rate, poorly formed individuals and low branching, early flowering, upsurge in wind throw, root rot damage, etc., were attributed, among other things, to the poor quality seeds used.

The project stems from the recommendations of the national seminar on reforestation and from the need for high-quality forest tree seeds to meet numerous requests for DGEFC's reforestation programs, and from local people, nursery operators and neighboring countries. The project will contribute to identifying the best sources of seeds, use appropriate methods for the harvesting, processing, conservation and distribution of high-quality seeds to make available high-performance plant material. The DGEFC will be able to achieve a high germination rate of seeds and have sufficient quality seeds available to meet its own needs, and those of private and public growers as well as potential buyers in neighboring countries.

To meet these challenges, the DGEFC proposes to implement a forest tree seed conservation and promotion project that will facilitate the way towards a green economy, the uptake of sustainable agriculture and the fight against the harmful effects of climate change. This proposal will contribute to the production of high-quality from certified seeds, in order to meet the needs for seedlings to support intensive reforestation in Benin.

1.2. Project relevance

1.2.1. Conformity with ITTO objectives and priorities

1.2.1.1. Conformity with ITTA, 2006 objectives

The project proposal complies with ITTO objectives set out in Article 1 of the ITTA, 2006 listed in paragraphs c, f, j and p.

c) Contributing to sustainable development and to poverty alleviation

Project results will provide a solution to the issue of access to high-quality seedlings raised by private planters, and contribute to the establishment of nursery operators and private plantations using high performance varieties among the rural population to improve their income. They will be able to improve their living conditions by raising their income level based on the value-added development of forest landscapes through the use of higher quality forest tree seeds and plant stock. The participatory approach followed by the administration of water, forest and hunting in the seedling production process will also be an asset to positively impact the local

communities surrounding the forests under management throughout the national territory. Resources from this sustainable activity will contribute to poverty alleviation.

f) Promoting and supporting research and development with a view to improving forest management and efficiency of wood utilization and the competitiveness of wood products relative to other materials, as well as increasing the capacity to conserve and enhance other forest values in timber producing tropical forests

The research work to be undertaken under this project will support development actors and stakeholders of forest plantation development and management in Benin. The project will improve the cost-efficiency ratio of plantations by providing support and guidance and high-quality plant stock to better match the environment requirements and production standards, particularly the quality standard of timber products and production yields. Vulnerable forest tree species will be better controlled by research and development.

j) Encouraging members to support and develop tropical reforestation and the rehabilitation and restoration of degraded forest land with due regard for the interests of local communities dependent on forest resources

The availability of **high-quality** seeds and the range of efficient plant stock will motivate nursery operators and plantation owners to increase reforestation activities which will lead to an increase in forest cover, protection and conservation of soil and water, carbon sequestration and enrichment of rural landscapes.

p) Promoting access to, and transfer of, technologies and technical cooperation to implement the objectives of this Agreement, including on concessional and preferential terms and conditions, as mutually agreed

This project will facilitate the transfer of conservation and asexual propagation technology of high economic value forest tree species which will be selected. A number of seed propagation are thoroughly mastered in consumer countries. The project will also promote technology transfer relating to the production and management of high-quality planting stock of a number of exotic species from source countries used for reforestation in Benin. **This project will also promote South-South collaboration opportunities and the purchase of material for seedling conservation and production.**

This project proposal is also in line with ITTO Strategic Action Plan, 2013-2018, specifically Strategic priority 2 which is described as "Increase the Contribution of Tropical Forests to National and Local Economies, Including through International Trade" as it will contribute to increasing reforestation rates in the short term; and to increasing the volume of timber supplied by Benin to international markets in the medium to long term.

1.2.1.2. Conformity with ITTO Strategic Action Plan 2013-2018

The project aims to develop high-quality seeds for priority forest tree species for reforestation activities; and will also review the potential for importing and testing new varieties of other species of high economic value in different ecosystems.

These actions are in line with the priorities and operational activities set out in the current ITTO Action Plan 2013-2018 as set out under section c2), expected outcome 6: "Secure adequate supplies of high-quality genetic material for use in forest rehabilitation and restoration efforts." They are also in line with item e), Expected Outcome 2: "Undertake research into wood properties and end-use requirements, paying particular attention to the properties and availability of lesser-used species and timber plantation species and their potential markets."

1.2.1.3. ITTO Policy Guidelines on Gender Equality and Empowerment of Women

Women, in spite of the important role they play in forest resource management, in particular fuelwood, non-timber forest products (NTFPs) harvesting, and in promoting alternative income-generating activities (AIGAs) with a view to improving their livelihood, are often marginalized in decision-making processes in connection with the management of forest resources. To this end, women's groups will be prioritized in umbrella organizations dealing with the production of forest tree seedlings and at all stages of project implementation to ensure that their specific interests are taken into account. Project Output 3 is entirely focused on this aspect.

In addition, the project is in line with *ITTO Guidelines for the Establishment and Sustainable Management of Planted Tropical Forests*, and in particular with *Recommended Action 2* “Formulate and implement a national land-use policy which promotes the sustainable use of all natural resources, including the establishment of a permanent forest estate”.

1.2.1.4. Guidelines for Social and Environmental impact assessment

The project aims to make available high-quality seedlings in sufficient volume and will have no or few environmental or social negative impacts.

This project is in line with Principle 1: Environmental Sustainability which encompasses the essential functions provided by forest ecosystems, including soil and water conservation, carbon sequestration and disaster risk reduction, as well as the values of forest biodiversity. It is also in line with SDG 15 and OMFs 2 and 3 as it aims to conserving, maintaining and, as far as possible, restoring forest ecosystem services; conserving and using biodiversity sustainably; and maintaining and enhancing forest health and vitality.

This project is also in line with Principle 2: Social viability in the Guidelines for Environmental and Social Impact Assessment. Social viability will take into account the needs of relevant populations, households, communities, workers and other societal groups dependent on activities related to forest seeds or reforestation, or even participating in initiatives, who are likely to be affected (favorably or unfavorably) by the project. This project will seek to maintain and enhance the socioeconomic benefits and opportunities derived from forests, to support job creation and decent and healthy working conditions, and to preserve the cultural heritage.

Principle 3: Gender equality and women's empowerment

Gender equality is a human rights issue and a core value of ITTO. The project will commit to mainstreaming gender and improving project results in terms of gender equality in all of its project work. Women will be strongly involved in project activities dealing with seeds and nurseries, and the project will ensure gender equality and women's empowerment issues are addressed.

1.2.2. Relevance to the submitting country's policies

This proposal is in line with the new national forest policy that wants to have the forest sector contribute to a social added value and contribute additional value to the national economy. The current forest policy promotes sustainable and participatory forest management together with the sustainable development of the timber sector. The proposal is also in accordance with Law No. 93-009 of 2 July 1993, currently being updated, that establishes the forest regime in the Republic of Benin, advocating reforestation to restore bare land and/or degraded land, and the public-private partnership for the establishment of large-scale forest plantations. The Republic of Benin's framework law on the Environment (Act No. 98-030 of 1 February 1999) provides in Articles 55 and 56 that forests, whether public or private, are a portion of the national heritage that should be managed by taking into account environmental concerns so that forest protection functions should not be compromised by economic, social or recreational uses; under Article 56, the forests must be protected against all forms of degradation, pollution or destruction caused by overlogging particular, grazing, abusive land clearing and fire, slash and burn practices, diseases or the introduction of unsuitable species.

This project is part of the priorities identified in the Government Action Plan (PAG 2006-2011), whereby the government is committed to reversing the degradation trend affecting the forest cover by strengthening the relevant legislative and regulatory framework; improving the management of fragile systems (wetlands, coastal and marginal ecosystems). In addition, the project is consistent with the Priority Action Program of the Growth Strategy for Poverty Alleviation (SCRIP) which defined the National Program for Sustainable Resources Management which aims, *inter alia*, to: i) promote alternative energy sources to meet domestic energy needs in urban centers; ii) support municipalities and grassroots communities in the sustainable management of forests and nature reserves with high wildlife potential through the process of participatory management plan development and implementation; iii) ensure the fair distribution of income derived from forest resource utilization; iv) strengthen the legal and regulatory framework for promoting the sustainable management of natural resources by the municipalities and the private sector; vi) ensure the creation and sustainable management of biological reserves on community lands; and vii) develop and implement a nationwide reforestation program incorporating the specificities of the different categories of forests and agro-ecological zones.

This project is also part of the Strategy and National Action Plan for the Conservation of Biodiversity (SPANB, 2002) sets out strategic directions providing that by the year 2025 regional and local authorities and the State

will be clearly aware of issues relating to biodiversity and will sustainably manage it to support the socioeconomic development of Benin.

The National Strategy for Sustainable Development of Benin, 2004), which also sets out the guiding principles for sustainable forest management support to local populations and farmers' organizations for seedling production and community-based reforestation.

The National Strategy to implement the United Nations Framework Convention on Climate Change in Benin, 2003, provides in its priority options and adaptation measures for the forestry sector, to initiate the reforestation using species that are climate change resilient, and not to limit actions undertaken in afforestation and reforestation programs to the use of only one or two tree species and to encourage rural reforestation and private agroforestry production initiatives.

In addition, Benin is a signatory party to a number of conventions and international agreements including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC), and the International Tropical Timber Agreement (ITTA, 2006). These various agreements and conventions oblige Benin to develop national plans and programs for the sustainable management of forest resources.

1.3. Target area

1.3.1. Geographical location

The project area covers the whole national territory, and in particular extensive forest areas as shown in Figure 1.

Benin is located in West Africa in the tropical area between the Equator and the Tropic of Cancer (between the parallels 6°30' and 12°30' of northern latitude and the meridians 1° and 30°40' of east longitude). It is bounded:

- **north by the Republic of Niger over 277 km, including 120 km bordered by the Niger-river;**
- **north-west by Burkina Faso (over 386 km);**
- **west by Togo (over 651 km);**
- **east by Nigeria (over 809 km); and**
- **south by the Atlantic Ocean (over 121 km).**

Benin extends over 700 km from north to south, and its width varies between 125 km (along the coast) and 325 km (Tanquiéta-Ségbana latitude).

The country is rather flat and is characterized by five natural regions, as follows:

- **A coastal strip, low and sandy, bounded by lagoons (coconut plantations**
- **A hilly and monotonous central plain, which gradually rises to an altitude of 200m-400 m from south to north around Nikki, and then lowers to the Niger Valley and the Kandi Basin. The Kandi Basin is a plain located in the south-east and is drained by the Sota-river and its tributaries which flow in very wide valleys**
- **The Atacora range in the north-west, including Mount Aledjo (658m) which is the highest point in the country**
- **The vast Gourma plain in the far north-west, between Atacora and the border with Burkina Faso and Togo**
- **Humid savannas are found in most of the country. A few patches of primary forest remain in the south and central areas. Crops, marshy areas and the large-scale palm grove of Lower-Benin occupy the rest of the territory.**

Benin is characterized by agro-ecological diversity. The forest cover extends over 68,08%¹ of the national land area. Based on the forestry regulations, the national forest area is subdivided into the gazetted estate and the State-owned protected estate.

- *The gazetted estate, with a total land area of 2 773 504 ha, includes two wildlife reserves (847 015 ha, i.e., 7%), three hunting areas (429 841 ha, i.e., 4%), 46 gazetted forests (1 457 245 ha i.e., 14%), seven reforestation areas (5 263 ha, i.e., 0.04% of total land area) and state-owned plantations covering 0.3% of the total land area (34139,54 ha);*

- The State-owned protected estate (*representing 46% of national land area*) includes all other forests which may serve other uses, communal forests, private forests (natural forests, teak plantations, palm tree plantations) and 2,940 sacred forests essentially located in the Departments of Zou, Collines and South-Benin (18 000 ha).

In practice, the project will cover all plantation areas in Benin as forest tree seeds to be produced will be distributed to interested stakeholders and users throughout the national territory. Distribution will be operated according to the main agroecological areas of Benin.

1.3.2. Socio-economic and cultural background

The project covers all areas of major forest production. Forest cover plays a fundamental role in ecological balance, rainfall regulation, soil protection and the water regime of rivers. The pressure on forest resources has increased over the past three decades, due to growing demographics. Indeed, the population of Benin, **estimated at 12 million**, is growing at an average annual rate of 3.2%, with very strong urban growth of around 5.2% per year against 1.4% / year for the rural population. Timber needs are met from harvesting forest resources. Wood storage throughout the national territory is estimated in 2007 at 232,220,111 m³ with an annual production of 9,038,289 m³, or 6,326,802 tons. The fuelwood requirements in Benin was estimated at 11.5 million m³ in 2012. Availability remains stable at around 11,000,000 m³ per year (Source; Direction de l'Énergie, 2006). RPTES (1999) estimated that more than 80% of domestic energy consumption in Benin is based on wood.

The contribution of the forest sector to the socioeconomic development of the country is estimated at nearly 7% of the national Gross Domestic Product (ProCGRN, 2009), just for the wood energy and cashew sectors. Forest resources generate income and jobs for people. The wood energy sector, the primary source of domestic fuel, employs 200,000 people in the country and has a turnover of nearly CFAF 7 billion per year (DGFRN 2010). Forest resources generate income and jobs for populations while providing them with ecosystem services (fight against climate change, preservation of terrestrial, maritime and river ecosystems, regulation of the water regime, etc.). In addition, they provide the populations with fuelwood, utility wood, timber, food and medicinal products, as well as fodder. It helps to improve and maintain soil fertility. At the scale of a watershed or a region, it plays a key role in protecting soils against erosion, in regulating natural hydrological cycles and in the fight against air pollution, particularly in urban centers. Local people exert a strong pressure on resources. Plantations are more or less respected by the populations.

With the implementation of the Forest Participatory Management Plans (PAPFs) and reforestation of degraded areas, strong demand for forest seeds is expected.

Project implementation will help improve income sources among a significant part of the local population. Production and marketing of high-quality forest tree seeds can improve the income of grassroots stakeholders by 10 to 30%. Thus, one can expect a rapid development of the participatory management approach for sustainable forest management.

In Benin, women play a very important role in the production of seedlings: collecting seeds, potting, pre-germination, sowing, maintenance, watering the pots, etc. The project will ensure adherence to the ITTO Policy Guidelines on Gender Equality and Empowering Women (GEEW). Gender equality and the empowerment of women are essential to achieving sustainable forest management, including the sustainable management of tropical timber production forests, which is a central objective of ITTO. Women will participate in the project in a variety of ways and within contexts that differ culturally and geographically. They will also participate in the project as members of local communities, as migrants, farmers, workers or technicians. In many rural communities, particularly in producing countries, men and women tend to play different roles in forestry and agroforestry systems. Women are often the primary harvesters and users of forest resources, such as fuelwood, grains or seeds, non-timber forest products, wild foods and medicinal herbs. They hold traditional knowledge of forest management practices, which are often inherently sustainable in nature, and make specific contributions to tropical forest value chains, which are important in terms of family incomes and well-being.

1.3.3. Environmental context

Two types of climate are found in Benin:

An equatorial climate with high humidity in the south. Alternating dry seasons (November to March and mid-July to mid-September), and rainy seasons (April to mid-July and mid-September to October).

A tropical climate In the center and north. A dry season from November to April and a rainy season from June to September.

The Harmattan, a hot and dry wind from the Sahara blows throughout the territory during the dry season.

Benin topography is not very rugged and includes:

- **a low coastal and sandy region bounded by lagoons**
- **a ferruginous clay plateau**
- **a silica-clayey plateau, with some undergrowth**
- **the Atacora massif (800 meters) in the northwest**
- **the very fertile silica-clayey Niger plains, in the northeast**

Forest plantations, dominated by private property, are small scale. They occupy about 3% of the national territory, or 229,896.45 ha, and are composed mainly of cashew plantations and plantations of fast-growing species in the Center and North regions, teak plantations everywhere, and palm tree plantations. in the southern region. The area of State-owned plantations under management by the National Wood Office (ONAB) is estimated at 14,014.89 hectares, of which nearly 85% is teak and 5% Gmelina; over 90,000 ha of palm plantations including 29,125 ha of state industrial palm plantations. These plantations serve to supply important sectors in the national socio-economic life and in rural areas constitute forms of savings and social security for local people in rural areas.

Forest plantations are under the influence of the four-season subequatorial climate of South Benin and the two-season Sudanese climate in the Center and North. Rainfall distribution in the South of the region (Toffo area) follows a four-season pattern: two rainy seasons alternating with two dry seasons. The longer rainy season lasts from March to July while the shorter rainy season spans the months of September and October. The long dry season is between November and February while the short dry season covers the month of August. However, in the North, the rainfall pattern shows a transition to Sudano-Guinean climate type having two seasons. The average annual rainfall is about 1 100 mm. In the project area soil formations are as follows: terres de barre soil (a lateritic, reddish, leached, iron-bearing type of soil), ferruginous soils and vertisols. The potential for seedling production and new plantings over the past five years (2016-2020) vary from 10 million to 16 million and from 4 500 to 6 000 hectares, respectively.

The project will ensure compliance with the *ITTO Environmental and Social Management Guidelines*, in particular the following principles:

- **environmental sustainability encompasses the essential functions that forest ecosystems provide, including soil and water conservation, carbon sequestration and disaster risk reduction, as well as the values of forest biodiversity;**
- **social viability refers to the populations, households, communities, workers and other societal groups living in a given place or in the vicinity, or participating in an initiative, who are likely to be affected (favorably or unfavorably) by a project;**
- **gender equality and women's empowerment which are human rights issues and a core value of ITTO.**

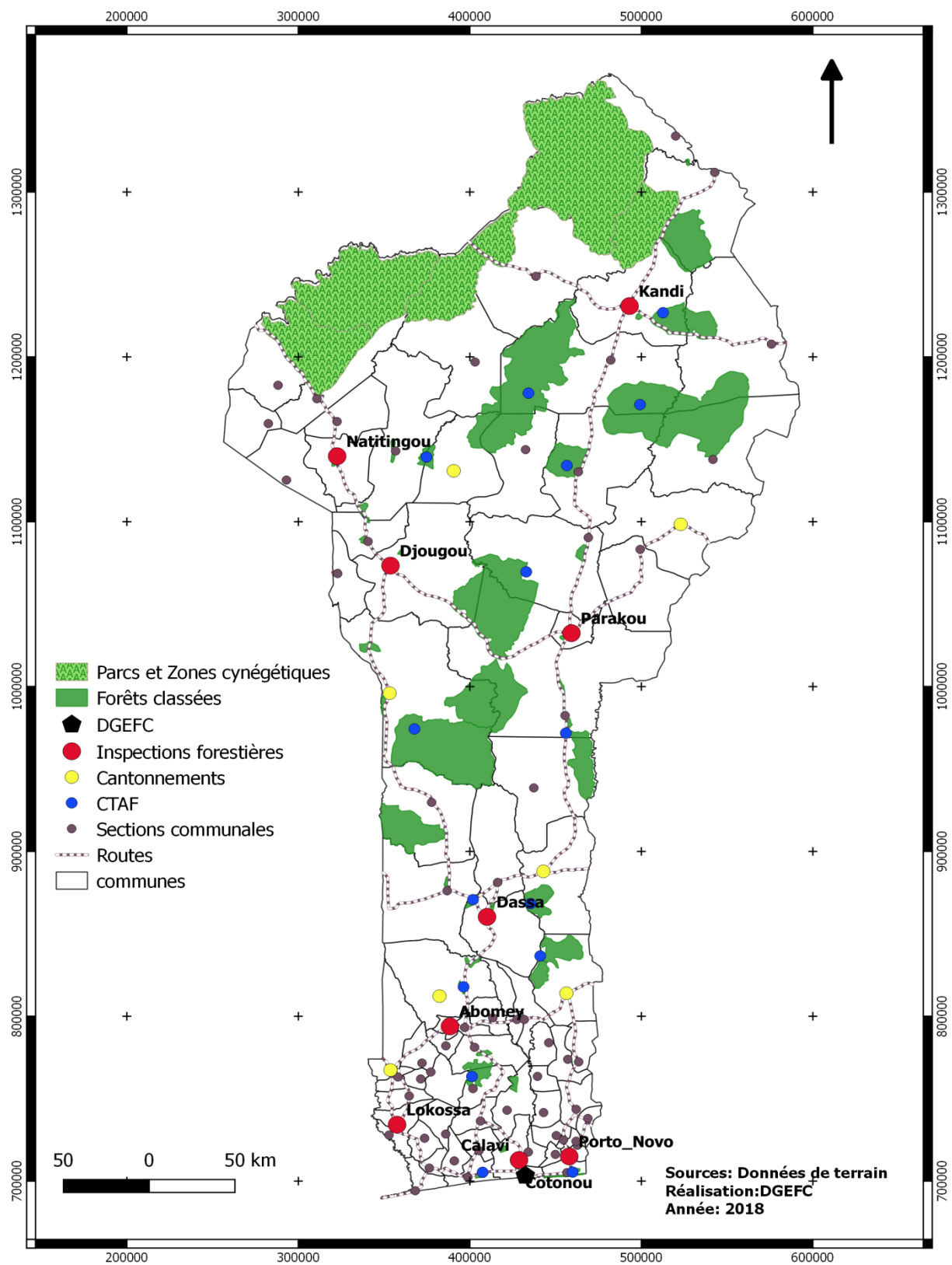


Figure 1: Map of forest resources and infrastructure, Benin

1.4 Expected outcomes at project completion

At project completion, it is expected that in the short and medium term the needs for quality forest seeds will be met for all stakeholders as follows:

- Twenty seed plot are identified, established and restored for all priority forest tree species;
- The seed production unit, including infrastructure (cold room, drying area and store), appropriate equipment for forest tree seed harvesting, processing and management is established. It will allow stakeholders to be provided with high-quality forest tree seeds on a permanent basis;
- The Forestry Administration personnel skills have been strengthened to effectively manage the established;
- Establishment of 200 ha of teak seed plots capable of producing 7 tons of seeds per year from a known source
- Capacity building of 100 seed harvesters and 100 nurserymen among local populations;
- Development of income-generating activities in connection with reforestation, including seed harvesting and high-quality seedling production to help improve grassroots populations' income.

In the long term, an increase in Benin's forest cover is expected as well as an increase in the production of high-quality timber and a decrease in the degradation of natural forests.

PART TWO: PROJECT RATIONALE AND OBJECTIVES

2.1. Rationale

2.1.1. Institutional set up and organizational issues

The Executing Agency responsible for project implementation will be the General Directorate of Water, Forests and Hunting (*Direction Générale des Eaux, Forêts et Chasse*—DGEFC), which is a government **agency** of the Republic of Benin in charge of managing the forestry sector. DGEFC's mandate is to ensure the development and rational management of natural resources (forest, fauna and others) throughout the national territory. The DGEFC's duties are as follows:

- Develop policies, government strategies and national programs for the sustainable management of forests, wildlife and natural resources as well as the conservation of sensitive areas and the restoration of degraded sites;
- Monitor the implementation of policies, strategies, plans, national programs and regulations in force;
- Develop forest management instruments;
- Promote research for the sustainable management of natural resources;
- Manage and follow international conventions relating to the protection of forest ecosystems and forest and wildlife resources;
- Lead the national focal points in natural resource management;
- Initiate and participate in the development of legislative and regulatory texts in the field of nature protection and natural resource management;
- Participate in the development of draft legal and regulatory texts in the field of the environment and all other areas in the Ministry's remit;
- Establish and monitor the management of the State-owned forest estate;
- Seek and mobilize funding for the forestry sector;
- Support the Departmental Directorates of the Environment and Nature Protection in the implementation of their responsibilities relating to the protection and sustainable management of forests and natural resources.

In the field, the Forest Inspectorates represent the devoluted and decentralized services of the Forestry Administration. As such their duties are, among others, to:

- Implement the forestry program at departmental level;
- Participate in the inventory of forest and wildlife resources;
- Conduct the control of logging and hunting, and ensure ecological balances are maintained;
- Ensure compliance with forest and wildlife regulations;
- Contribute to the development of technical and technological packages for the management of natural resources and their dissemination;
- Organize and lead reforestation campaigns;
- Ensure information and training of producers, private and public actors and local authorities in the regulations and management of forests and natural resources;
- Issue logging and forest product transport permits;
- Contribute to the monitoring and evaluation, and prepare progress reports in the area of forest resource management.

For project implementation, **the DGEFC will also be supported by various partner institutions, including:**

- The National Timber Board (ONAB), a government corporation **essentially responsible for:**
 - **Reforestation of State-owned degraded forest land**
 - **Subcontracting of Teak and Gmelina seed production**
 - **Sustainable management of the State-owned plantation estate,**
 - **production of Teak, Gmelina timber and other species timber;**
 - **Lumber trade.**
- The platform for users of the forestry sector, which brings together loggers, processors, traders and wood industry operators. It is a non-profit association that promotes reforestation and actively

participates in reforestation campaigns. It aims to: (i) contribute to the rational management of the country's forest resources and participate in reforestation to facilitate the increase in production and the diversification of tropical species; (ii) contribute to the regulation of all forms of logging in Benin in collaboration with the responsible government structures; (iii) contribute to the structuring of the timber sector in partnership with the government and its decentralized structures to fight against illegal loggers through the control of professional cards; (iv) work towards the development and establishment of timber-related industries in Benin through cooperation with actors in the sector of the sub-region and the world; and (v) facilitate training and strengthen the operational and organizational capacities of the sector's stakeholders;

- Forest tree seed users: Include all forest-related companies, private planters, nursery operators, associations or local communities and NGOs involved in plantations, reforestation and forest enrichment;
- Research centers at national level such as the Biotechnology Laboratory, Faculty of Technical Sciences, which will contribute through research and development work;

2.1.2. Stakeholder analysis

Stakeholders directly involved in project implementation, include the following groups:

- ✓ **Primary stakeholders directly concerned by the production of high-quality seedlings; they include: the DGEFC and ONAB, and grassroots stakeholders comprising nursery operators, seed producers and the Association of Women Producers of Forest Seedlings and Seeds;**
- ✓ **Secondary stakeholders able to influence the production system of forest seedlings and seeds; they include the COGEPAF and the forest sector user platform. Forest co-management structures as part of the participatory management approach for forests and plantations, local communities bordering state-owned plantations and gazetted forests; and**
- ✓ **Tertiary stakeholders; they are research centers and universities, and NGOs involved in reforestation and forest resource management.**

Stakeholder analysis table				
Stakeholder Groups	Characteristics	Problems, needs, interests	Potential	Involvement in project
Primary stakeholders (key stakeholders) / PS				
PS1 DGEFC	<u>Government body whose main activities are:</u> <u>1. Management of national forest resources.</u> <u>2. Large-scale reforestation of natural forests.</u> <u>3. Sustainable management of state-owned forest plantations.</u> <u>4. Facilitating seedling production for reforestation.</u> <u>5. Technical support to nursery operators and growers</u>	<ul style="list-style-type: none"> - Difficulties in supplying certified seeds for large-scale reforestation. - Lack of resources for establishing a seed unit for producing certified seedlings. 	<ul style="list-style-type: none"> - Capacity to appropriate technical innovations. - Motivated personnel. Currently holds large areas to be reforested and plantations to be renewed. 	Project prime beneficiary, responsible for project implementation. It will provide the project with necessary personnel and material resources.
PS2: Women's groups producing seedlings and seeds, nursery operators, growers and plantation owners	Grassroots stakeholders highly dependent on seedlings and forest tree seeds. Produce and sell seedlings and forest tree seeds or use seedlings. More or less organized as an association. Own forest plantations.	<ul style="list-style-type: none"> - Difficulties in sourcing certified seeds for producing large volumes of high-quality seeds and improved seedlings. - Livelihoods threatened due to the production of poor quality seedlings. - Low capacity in using forest tree seeds. 	<ul style="list-style-type: none"> - Proficient in seedling production. - Willing to source certified seeds. - Willing to produce improved seedlings. 	Project primary beneficiaries. They will benefit from several capacity-building activities and from project outcomes. The project will make available cuttings, clones and plots planted with improved seedlings.
PS3: <u>National Timber Board (ONAB)</u>	<u>Government agency essentially responsible for:</u> <u>1. Reforestation of state-owned degraded forest land</u> <u>2. Sustainable management of state-owned plantations</u> <u>3. Production of Teak, Gmelina and other species timber</u> <u>4. Lumber sales</u>	<u>Material and technical difficulty in establishing a supply system for high-quality seeds to increase plantation productivity</u>	<u>Able to appropriate technological innovations. Motivated personnel. Large areas available for reforestation and renew its plantations</u> <ul style="list-style-type: none"> - High capacity to adapt to change 	<u>As collaborating agency, will be involved in implementing some activities: will facilitate project outcome capitalization and institutional support</u>
Secondary stakeholders / SS				
Rural communities and local populations around gazetted forests	Associations comprised of men, women, more or less organized into associations, and used for seed collection, seedling	<ul style="list-style-type: none"> - Need for <u>high-quality seeds for producing</u> high-quality seedlings for 	<ul style="list-style-type: none"> - Good organization for seedling production. 	Primary stakeholders directly involved in seed collection. This stakeholder

Stakeholder analysis table				
Stakeholder Groups	Characteristics	Problems, needs, interests	Potential	Involvement in project
	production, plot reforestation, plantations tending, etc.	enrichment and reforestation. - Have access to community plantations.	Good collaboration with DGEFC. High capacity to adapt to change.	group will benefit from project training and awareness-raising activities.
Structures for joint forest management	Structures in charge of managing Village Participatory Forest Management Organizations . Represent plantation-neighboring local populations.	<u>Involved in awareness-raising and control in connection with high-quality seed harvesting and seedling production.</u>	High capacity for mobilizing local populations in seedling production and reforestation.	Able to participate to project implementation through mobilizing and raising awareness of local communities.
Tertiary stakeholders / TS				
Education and research institutions (Universities, Scientific Authorities, CITES and CERF)	Train key personnel in charge of natural resource management. Carry out education and research activities.	Lack financial resources and technical material. <u>Low capacity in research on threatened species seeds</u>	Skills in research work. Capacity for testing clone resistance <i>in situ</i> .	Skills transfers and participation in specific studies. Able to initiate research programs.
NGOs involved in forest resource management	Non-governmental organizations <u>involved in reforestation</u>	<u>Willing to support populations and communities for reforestation work and high-quality seedlings</u>	Dissemination and extension of high-quality seeds and seedlings.	Able to contribute to information dissemination, awareness raising and extension of improved seedlings.

2.1.3. Problem analysis

In the course of implementing its Intensive reforestation program throughout the national territory through incentive measures, the DGEFC uses over ten million seedlings for reforestation each year. Seedling mass-production is achieved from seeds **of all sources and dubious quality**.

However, seed production is often faced with issues of quantity and quality, and a combination of several factors such as:

- **the irregularity of fruition due to the negative impact of climate change;**
- **the difficulties of conserving seeds;**
- **the insufficiency of reliable seed sources;**
- **and the destruction of seed plots caused by wildfires.**

Nursery operators and seedling production groups are faced with serious issues in obtaining high quality seeds in sufficient volumes. In fact, following the involvement of local populations and civil society organizations in the participatory management of forest resources, certain non-sovereign activities such as seedling production have been entrusted to them. However, they do not have the means and expertise to produce improved seedlings.

The use of seeds from **poor quality** seed sources results in the production of lower quality seedlings characterized by low-branched individuals, poorly formed with early flowering and having a poorly exposed trunk with a high sensitivity to wind throw and root rot. Timber produced under such conditions is of poor

quality. These issues, which manifest themselves years later after seedling planting, are a demotivating factor for growers. The unavailability of certified **elite** forest seed varieties for the production of quality seedlings has a negative impact both on the establishment of new forest plantations and on the reconstitution of the forest cover in Benin.

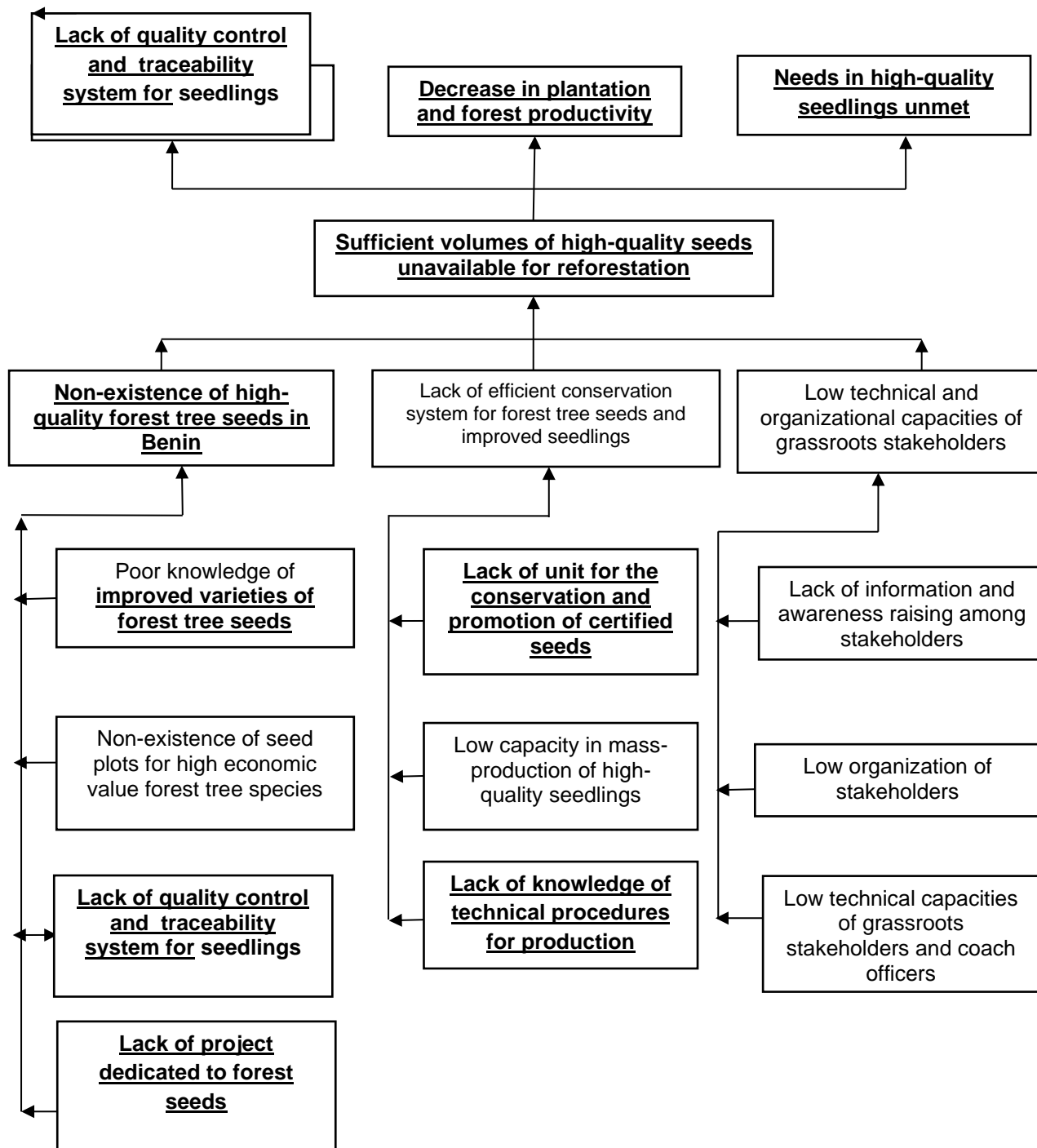
However, one of the predominant factors for increasing the productivity of plantations remains the quality of the plant material used. Based on the analysis of this situation, the lack of a system for producing seedlings of improved forest varieties to meet the needs is a limiting factor for reforestation in Benin.

The unavailability of high-quality seeds in sufficient volumes for reforestation is the main issue facing reforestation stakeholders. Three main causes were identified based on an in-depth analysis of the issue, namely:

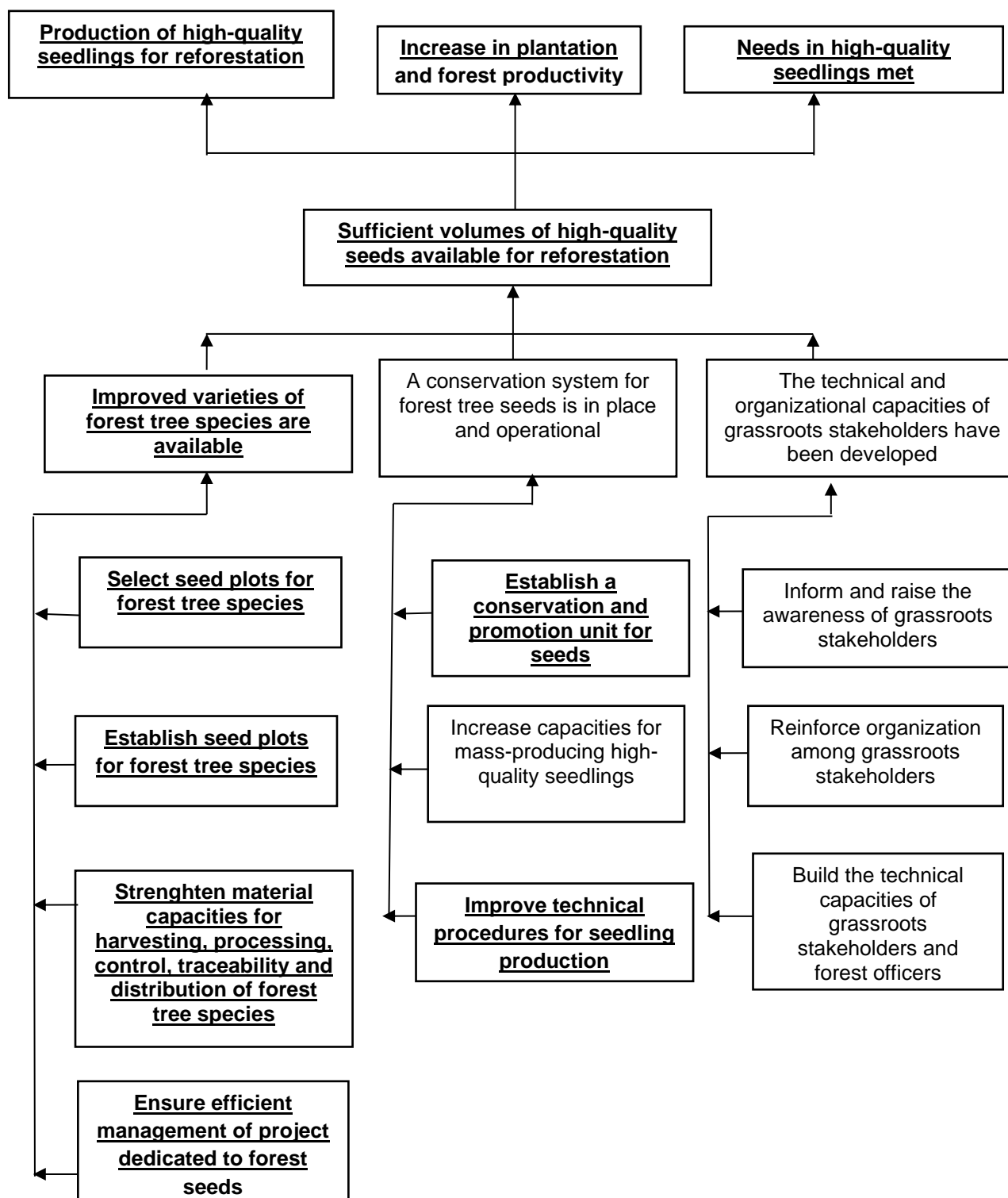
- **Lack of knowledge of improved forest varieties and elite trees to meet current and future needs in high-quality forest tree seeds;**
- **Lack of adequate infrastructure and equipment for the mass production and conservation of high-quality seedlings and the production of improved varieties seedlings;**
- Poor technical and organizational capacity of grassroots stakeholders **(seed harvesters,** nursery operators, private growers and co-management structures).

Addressing identified causes will make it possible to solve the problem of non-availability of high-quality seeds.

Problem tree



Solution tree



2.1.4. Logical framework matrix

Intervention Strategy	Measurable Indicators	Means of Verification	Key Assumptions
<u>Development objective:</u> To contribute to increasing national forest cover through reforestation <u>using high-quality seedlings</u>	<u>Impact indicators</u> <ul style="list-style-type: none"> - <u>At project completion, 75% of needs in high-quality seedlings are met;</u> - At project completion, <u>high-quality</u> seedlings were used in at least 50% of areas reforested with forest tree species; - At project completion, <u>80% of needs in high-quality seedlings are met.</u> 	<ul style="list-style-type: none"> • Annual reports from DGEFC • Project report • Forestry statistics on reforestation (Forestry statistics annual books) • FRA Report (<i>Forest Resources Assessment</i>) 	<ul style="list-style-type: none"> • Sustainable forest management remains a priority in the national forest policy. • All stakeholders support and are involved in the project. • <u>Climate conditions are favorable</u> • Support for the national vision of reforestation.
<u>Specific objective:</u> <u>To achieve the production and supply of high-quality forest tree species seeds</u>	<u>Outcome indicators</u> <ul style="list-style-type: none"> - <u>At project completion, high-quality seeds are produced and used for at least 15 forest tree species;</u> - <u>At the end of project Year 1, a seed conservation and distribution unit is established and operational;</u> - <u>At the end of project Year 2, stakeholder capacities have been developed.</u> 	<ul style="list-style-type: none"> • Seed conservation unit established; • <u>Volume of high-quality seedlings produced;</u> • Project progress reports; • Field visits 	<ul style="list-style-type: none"> • Improving forest tree species remains a priority. • Bushfires in seed-tree plots are suppressed and/or managed.
<u>Output 1:</u> Improved seeds are available for forest tree species	<u>Output indicators</u> <ul style="list-style-type: none"> - An inventory of seed plots is conducted <u>throughout the national territory according to the various zones;</u> - <u>At the end of project Year 1, at least one 20 ha-seed plot has been established and is operational for each selected forest tree species;</u> - <u>At the end of project Year 1, high-quality seeds for the 15 forest tree species most used for reforesting agro-ecological zones are available;</u> - At the end of project Year 1, 10 technicians trained in improved seed conservation and production. 	<ul style="list-style-type: none"> • Technical report on inventory and plot characterization; • Import approval and delivery vouchers of seeds from new origins; • Field visit; • Project progress report; • Number of seedlings in nurseries; • Catalogue of selected plant material developed. 	<ul style="list-style-type: none"> • <u>Climate conditions are favorable</u> • Access to <u>seeds has been improved</u> • Risks linked to fire, diseases and pests
<u>Output 2:</u> An efficient system for producing <u>high quality</u>	<u>Output Indicators</u> <ul style="list-style-type: none"> - By the end of project Year 1, a seed unit is established and operational; 	<ul style="list-style-type: none"> • Construction work reception reports and equipment of seed unit; 	<ul style="list-style-type: none"> • Seed planting and tending to ensure seedling survival • Economic profitability of unit

seedlings is established and operational	<ul style="list-style-type: none"> - By the end of project Year 2, 300 ha of seed plots are established; - By the end of project Year 2, at least 5 million high-quality seedlings are produced annually; - A quality control and traceability tool for seeds is in place and operational. 	<ul style="list-style-type: none"> • Project progress report; • Field visit for cloning unit infrastructure; • Volume of improved seedlings produced; • At least one document on improved seedling traceability. 	<ul style="list-style-type: none"> • Climate hazards
<p>Output 3:</p> <p><u>The technical and organizational capacities of grassroots stakeholders and have been developed</u></p>	<p><u>Output Indicators</u></p> <ul style="list-style-type: none"> - At project completion, 90% of grassroots stakeholders are informed about forest tree seeds and their importance for reforestation; - By the end of Year 2, at least five improved forest tree seed producers' organizations created and organized, and training provided; - By project completion, 150 seedling nursery operators (men and women producers) are trained in mass production of improved seedlings. 	<ul style="list-style-type: none"> • Project progress report; • Training report; • Field visit; • <u>Nursery</u> monitoring data sheets; • Silvicultural procedures for planting 	<ul style="list-style-type: none"> • All stakeholders support and are involved in project. • Stakeholders uptake appropriate silvicultural techniques. • Grassroots stakeholders participate in training sessions.

2.2. Objectives

2.2.1. Development objective and impact indicators

To contribute to increasing national forest cover through reforestation using **high-quality seedlings**

Indicators

- **At project completion, high-quality seeds are produced and used for at least 15 forest tree species;**
- **At the end of project Year 1, a seed conservation and distribution unit is established and operational;**
- **At the end of project Year 2, stakeholder capacities have been developed.**

2.2.2. Specific objective and outcome indicators

To achieve the production and supply of high-quality forest tree species seeds

Indicators

- **At project completion, 300 hectares of seed plots are established and operational;**
- **At project completion, a seed conservation and distribution unit is established and operational;**
- **At the end of project Year 2, grassroots stakeholders' capacities have been strengthened.**

PART THREE: DESCRIPTION OF PROJECT INTERVENTIONS

3.1. Outputs and activities

To achieve outputs, the following activities will be implemented:

Output 1: High-quality seeds are available for forest tree species

Activity 1.1: Identify priority forest tree species

Activity 1.2: Produce seeds for selected forest tree species

Activity 1.3: Establish seed plots for forest tree species

Activity 1.4: Ensure efficient management of project

Output 2: An efficient system for producing certified seedlings is established and operational

Activity 2.1. Establish a seed production unit

Activity 2.2. Capacity building for mass production of high-quality seedlings

Activity 2.3. Improve production technical procedures

Output 3: The technical and organizational capacities of primary stakeholders and coaching officers have been developed

Activity 3.1. Inform and raise the awareness of grassroots stakeholders

Activity 3.2. Enhance the organizing capacity of grassroots stakeholders

Activity 3.3. Build the technical capacities of grassroots stakeholders and coaching officers

3.2. Strategic approaches and methods

This project will be implemented by a multidisciplinary team that will include foresters, **experts in forest seed management and experts in plant breeding**. Interventions and specific studies will be subject to consultations. The project will be implemented in three stages according to outputs.

To ensure the sustainability of project outcomes, the DGEFC personnel will be in charge of coordination and monitoring of project work; specific personnel will be recruited for implementing specific activities. Where activities are non-continuous, subcontracting will be preferred. The DGEFC has already capitalized on a number of experiences in the management of seed plots. The staff assigned to this component will be seconded to the project for carrying out plot identification and selection.

Local communities living around gazetted forests are already organized into associations named forest co-management structures. The associations will undertake field work (plot maintenance, land preparation and tree planting, seed collection, nursery work). **To facilitate the conservation and distribution of high-quality seeds, the three project sites will be at least 250 km apart. A vehicle will be purchased to travel between project sites. A motorbike will be purchased for each site to facilitate connection.**

3.2.1. Implementation strategy for Output 1

The strategy for achieving Output 1 will be implemented through the following activities:

Activity 1.1. Identify priority forest tree species

At least 15 forest tree species adapted to Benin's various agro-ecological zones will be identified such as *Afzella africana*, *Khaya Senegalensis*, *Khaya grandifolia*, *Millicia excelsa*, *samba*, *Terminalia superba*, *Pterocarpus erinaceus*, and *Gmelina arborea tectona grandis*. This activity will be carried out by a consultant on the basis of the information provided in the annual reports on seedling production and a survey of nursery operators. The activity will identify the priority forest species for which improved seeds will be produced.

Activity 1.2 Produce seeds for the selected forest tree species

This activity will select areas rich in local species that can serve as seed-trees from the conservation areas in gazetted forests. Seed trees or seed orchards could also be targeted in local areas. These plots will be inventoried, mapped, demarcated and bounded and technical briefs will be produced; 100 ha of local species seed stands will be selected in the conservation areas selected in gazetted forests. A phenological study will be conducted for each selected species to determine their seasonal physiological characteristics. This study will include periodic surveys of stands to determine the optimum period for seed production. This study will be key for seed harvesting. Study results will also be used for building the capacities of grassroots populations. The local species targeted for local species seed production include: *Azadirachta africana*, *Khaya Senegalensis*, *Khaya grandifolia*, *Millettia excelsa*, *Samba*, *Terminalia superba*, *Pterocarpus*, *Isobornia*, etc.

Activity 1.3: Establish seed plots for forest tree species

This activity will be carried out by a consultant specializing in varietal selection improvement of forest species that will be recruited. A general survey will be conducted in forest plantations to inventory and select individuals with exceptional performance. Mapping work will focus on the zoning of selected stands and trees. The geographic coordinates of the pre-selected **elite** individuals will be recorded and marked in the field. The seed plots thus identified will be developed for collecting their seeds.

3.2.2. Implementation strategy for Output 2: An efficient system for producing certified seedlings is established and operational

The establishment of a seed unit involved three main stages: Establishment of a seed conservation unit; Mass production of high-quality seedlings; and Selection of seed plots **and the distribution of high-quality seeds. A contractor will be hired to build and equip a seed unit including a cold room, laboratory, store and related facilities. This unit will make it possible to carry out the technical tests on the seeds, to preserve them, to ensure the management, tracking and distribution of the seeds produced in nurseries and plant producing associations. Training and capacity building sessions targeting nursery operators and seedling producers will be conducted by the project team to ensure the production of high-quality seedlings.**

3.2.3. Implementation strategy for Output 3: Technical and organizational capacities of grassroots stakeholders and coaching officers are developed

Grassroots stakeholders in the forest tree seed sector carry out their activities in a piecemeal fashion with no platform for mutual consultation; therefore the project will bring them together and organize them into cohesive interest groups. **Producing improved high-quality seedlings requires technical skills and know-how that seedling producers and nursery operators are currently lacking.**

Participatory workshops will be held in each forest area including seedling plots to raise awareness and train stakeholders interested in the production of high-quality seeds and improved seedlings. **People involved in forest seed-related activities will be trained in the different aspects of seed technologies (harvesting, processing, packaging, quality control and data management).**

The project will facilitate the capacity building of stakeholders through training workshops. To this end, training sessions will be held for stakeholders.

Through training sessions, private plantation owners will be trained in cutting and mass production of improved seedlings. The project could generate employment for young graduates to be recruited by private plantation owners should the latter be unable to attend training sessions.

3.1. Work Plan

Outputs/Activities	Responsible party/ Collaborator	Year 1				Year 2				Year 3			
		Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
Output 1: High-quality seedlings are available for forest tree species													
Activity 1.1: <u>Identify priority forest tree species</u>	Project Coordinator												
Activity 1.2: <u>Produce seeds for the selected forest tree species</u>	Project Coordinator												
Activity 1.3: <u>Establish seed plots for forest tree species</u>	Project Coordinator												
Activity 1.4: <u>Ensure efficient management of project</u>	Project Coordinator												
Output 2: A system for producing improved seedlings is established and operational													
Activity 2.1: Establish a cloning unit	Contractor/ Coordinator and EA												
Activity 2.2: Capacity building for mass production of high-quality seedlings	Project Coordinator /DGEFC												
Activity 2.3: <u>Improve production technical procedures</u>	Coordinator /Consultant, EA												
Output 3: The technical and organizational capacities of primary stakeholders and coaching officers have been developed													
Activity 3.1: Inform and raise the awareness of grassroots stakeholders	Coordinator												
Activity 3.2: Enhance the organizing capacity of grassroots stakeholders	Consultant/ Coordinator												
Activity 3.3: Build the technical capacities of grassroots stakeholders and coaching officers	Coordinator												

3.2. Budget

The project budget is shown in the master budget schedule below. It lists the costs of activities and shows quantities, unit costs, the total and components by sources of funding.

3.4.1. Master budget schedule

Outputs/ activities	Description	Budget Component	Quantity			Units	Unit Cost (US\$)	Total Cost (US\$)	ITTO			EA
			Year 1	Year 2	Year 3				Year 1	Year 2	Year 3	
Output 1	High-quality seedlings are available for forest tree species											
Activity 1.1	<u>Identify priority forest tree species</u>											
	Identification of improved teak seeds	51.6	1			Lump sum	8000	8000	8000			
	Purchase of field equipment (GPS x 4, Ladders x 2, Clinometers x 4, Pesons, penta-decameters, machetes, ladder for climbing, etc.)	41.6	1			Lump sum	8 000	8 000	8 000	-	-	-
Activity 1.2	<u>Produce seeds for the selected forest tree species</u>											
	Establishment of test plots (15 ha)	21.2	1			Lump sum	10 000	10 000	10 000	-	-	-
	Purchase of motorbike	41.7	1			unit	2 500	2 500	2 500	-	-	-
Activity 1.3	<u>Establish seed plots for forest tree species</u>											
	Labor for field work (weeding and grubbing)	21.4	<u>100</u>			ha	<u>300</u>	30 000				30 000
	Maintenance and evaluation of 300 ha of seed plots	21.5	100	100	100	ha	166	15 000	5 000	5 000	5 000	
Activity 1.4:	<u>Ensure efficient management of project</u>											

Outputs/ activities	Description	Budget Component	Quantity			Units	Unit Cost (US\$)	Total Cost (US\$)	ITTO			EA
			Year 1	Year 2	Year 3				Year 1	Year 2	Year 3	
	<u>1 Project coordinator</u>	<u>11.1</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>p-m</u>	<u>1000</u>	<u>36 000</u>				36 000
	<u>1 Assistant in charge of project monitoring and evaluation</u>	<u>11.2</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>p-m</u>	<u>600</u>	<u>21 600</u>	<u>7 200</u>	<u>7 200</u>	<u>7 200</u>	-
	<u>1 Forest technician</u>	<u>11.3</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>p-m</u>	<u>500</u>	<u>18000</u>	<u>6 000</u>	<u>6 000</u>	<u>6 000</u>	-
	<u>1 Laboratory technician in plant biotechnology (asexual plant propagation)</u>	<u>11.4</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>p-m</u>	<u>500</u>	<u>18000</u>	<u>6 000</u>	<u>6 000</u>	<u>6 000</u>	
	<u>1 Laboratory assistant</u>	<u>11.5</u>		<u>12</u>	<u>12</u>	<u>p-m</u>	<u>400</u>	<u>14400</u>	<u>4 800</u>	<u>4 800</u>	<u>4 800</u>	
	<u>1 Secretary-accountant</u>	<u>11.6</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>p-m</u>	<u>500</u>	<u>18000</u>	<u>6 000</u>	<u>6 000</u>	<u>6 000</u>	-
	<u>1 Driver/messenger</u>	<u>11.7</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>p-m</u>	<u>300</u>	<u>10 800</u>	<u>:</u>	<u>:</u>	<u>:</u>	10 800
	<u>1 All terrain vehicle</u>	<u>41.1</u>	<u>1</u>			<u>Unit</u>	<u>40 000</u>	<u>40 000</u>	<u>40 000</u>			-
	<u>Fuel and lubricants</u>	<u>51.1</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>m</u>	<u>300</u>	<u>10 800</u>	<u>2 400</u>	<u>2 400</u>	<u>2 400</u>	3600-
	<u>Spare parts</u>	<u>51.2</u>				<u>Lump sum</u>	<u>2500</u>	<u>2500</u>				2500
	<u>Vehicle insurance</u>	<u>51.3</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>Unit</u>	<u>150</u>	<u>450</u>				450
	<u>4 laptops</u>	<u>41.2</u>	<u>4</u>			<u>Unit</u>	<u>800</u>	<u>3200</u>	<u>3200</u>			-

Outputs/ activities	Description	Budget Component	Quantity			Units	Unit Cost (US\$)	Total Cost (US\$)	ITTO			EA
			Year 1	Year 2	Year 3				Year 1	Year 2	Year 3	
	<u>2 Printers</u>	<u>41.3</u>	<u>2</u>			<u>Unit</u>	<u>800</u>	<u>1 600</u>	<u>1 600</u>			-
	<u>Photocopy machine</u>	<u>41.4</u>	<u>1</u>			<u>Unit</u>	<u>1 500</u>	<u>1 500</u>	<u>1 500</u>			-
	<u>Power surge protectors</u>	<u>41.5</u>	<u>3</u>			<u>Unit</u>	<u>100</u>	<u>300</u>	<u>300</u>			-
	<u>Office supplies</u>	<u>51.4</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>m</u>	<u>100</u>	<u>3 600</u>	<u>1200</u>	<u>1200</u>	<u>1200</u>	-
	<u>Networks and utilities</u>	<u>51.5</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>m</u>	<u>150</u>	<u>5 400</u>	:	:	:	5 400
	<u>Office premises rental</u>	<u>61.1</u>	<u>12</u>	<u>12</u>	<u>12</u>	<u>m</u>	<u>300</u>	<u>10 800</u>	:	:	:	10 800
	<u>Hold inception workshop (1 day x 50 participants)</u>											
	<u>Meeting room rental for inception workshop</u>	<u>61.2</u>	<u>1</u>			<u>unit</u>	<u>500</u>	<u>500</u>				<u>500</u> -
	<u>Transport and holding of inception workshop</u>	<u>31.1</u>	<u>40</u>			<u>Participant</u>	<u>100</u>	<u>4 000</u>	<u>4 000</u>			-
	<u>6 Meetings of project steering committee</u>	<u>61.3</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>Lump sum</u>	<u>600</u>	<u>3 600</u>	<u>1200</u>	<u>1200</u>	<u>1200</u>	
	<u>Conduct project audit (4)</u>	<u>62.1</u>	<u>1</u>	<u>1</u>	<u>2</u>	<u>p-m</u>	<u>2000</u>	<u>8 000</u>	<u>2000</u>	<u>2000</u>	<u>4000</u>	-
Output 2:	An efficient system for producing improved seedlings is established and operational											
Activity 2.1	Establish and operationalize a cloning propagation unit for forest tree species											
	Construction of seed unit	41.8	1			Lump sum	30 000	30 000	30000	-	-	

Outputs/ activities	Description	Budget Component	Quantity			Units	Unit Cost (US\$)	Total Cost (US\$)	ITTO			EA
			Year 1	Year 2	Year 3				Year 1	Year 2	Year 3	
	Laboratory equipment (irrigation system, spraying machine, etc.)	42.1	1			Lump sum	10 000	10 000	10 000	-	-	-
	Laboratory consumables	51.7	1	1	1	Lump sum	4 000	12 000	4 000	4 000	4 000	-
	Consultant-trainer in seed conservation techniques	21.9	2	2		Person-month	3 750	15 000	7 500	7 500	-	
Activity 2.2	Mass-produce improved seedlings											
	Travel for exchange on seed conservation techniques x 3 persons	31.3	3			Lump sum	2000	6000	6000			
	Establishment of infrastructure for mass-production of certified seedlings	42.2		1		Lump sum	20000	20000		20000		
	Consumables for mass production of seedlings	51.8	1	1	1	Lump sum	2000	6000	2000	2000	2000	
Activity 2.3	Establish a quality control and traceability system for seedlings											
	Recruitment of consultant for developing procedure manual for improved seedling production and quality & traceability control tools	22.1		2		Person-month	3000	6000		6000		
	Workshop for validating procedure manual	31.4	40			Participants	100	4 000	4 000			
	Rental of meeting room	62.2	1			unit	500	500	500			-
Output 3	The technical and organizational capacities of primary stakeholders and coaching officers have been developed											
Activity 3.1	Inform and raise the awareness of grassroots stakeholders											
	Allowance for 6 missions x 5 days x 4 participants	31.5	2	2	2	unit	1400	8400	2800	2800	2800	-

Outputs/ activities	Description	Budget Component	Quantity			Units	Unit Cost (US\$)	Total Cost (US\$)	ITTO			EA
			Year 1	Year 2	Year 3				Year 1	Year 2	Year 3	
	for awareness raising of grassroots stakeholders in project municipalities											
	Duty travel costs for missions	31.6	2	2	2	Lump sum	100	600	200	200	200	-
Activity 3.2	Enhance the organizing capacity of grassroots stakeholders											
	4 missions for establishing associations of approved producers of improved seedlings	31.7	1	2	1	Lump sum	1000	4 000	1000	2 000	1000	
Activity 3.3	Build the technical capacities of grassroots stakeholders											
	Training workshop for improved seedling producers	31.8	40	30	30	Person-day	Lump sum	8400	2800	2800	2800	-
	Purchase of basic material and tools for groups (bags, boots, watering cans, hoes, wheelbarrows, buckets, nets, etc.)	42.3	1			Lump sum	10 000	10 000	10 000	-	-	-

3.4.2. Consolidated budget by component (US\$)

Budget component	Description	Total cost US\$	Year 1	Year 2	Year 3
10	Project personnel				
11.1	1 Project coordinator	36 000	12 000	12 000	12 000
11.2	1 Assistant for project monitoring and evaluation	21 600	7 200	7 200	7 200
11.3	1 Forestry technician	18 000	6 000	6 000	6 000
11.4	Laboratory Technician in plant biotechnology (asexual propagation)	18 000	6 000	6 000	6 000
11.5	1 Laboratory Assistant	14 400	4 800	4 800	4 800
11.6	1 Secretary-accountant	18 000	6 000	6 000	6 000
11.7	1 Driver/messenger	10800	3600	3600	3600
19	Component total	136 800	45 600	45 600	45 600
20	Subcontracting				
21.1	Inventory, identification and selection of forest tree species	15 000	15 000		
21.2	Establishment of parcels of origin (15 ha)	10 000	10 000		
21.4	Labor for fieldwork (weeding and grubbing)	30000	30000		
21.5	Maintenance and evaluation of 30 ha of seed plots	15 000	5 000	5 000	5 000
21.9	Consultant-trainer in seed conservation techniques	15 000	7500	7 500	
29	Component total	70 000	52 500	12 500	5 000
30	Duty travel				
31.1	Travel for exchange on seed conservation techniques	4 000	4 000		
31.2	Mission for monitoring & evaluation and data collection	5 000	5 000		
31.3	Travel for exchange on seed conservation techniques x 3 participants	15000	15000		
31.4	Workshop for validating procedure manual	4 000	4 000		
31.5	6 missions x 5 days x 4 participants for awareness raising of grassroots stakeholders in project municipalities	8400	2800	2800	2800
31.6	Duty travel costs for missions	600	200	200	200
31.7	4 missions for establishing associations of approved producers of improved seedlings	4 000	1000	2 000	1000
31.8	Training workshop for improved seedling producers	8400	2800	2800	2800
39	Component total	49 400	34 800	7 800	6 800
40	Capital goods				
41.1	1 All-terrain vehicle	40 000	40 000		
41.2	4 Laptops	3200	3200		
41.3	2 Printers	1 600	1 600		
41.4	1 Photocopy machine	1 500	1 500		

Budget component	Description	Total cost US\$	Year 1	Year 2	Year 3
41.5	Power surge protectors	300	300		
41.6	Purchase of field equipment (GPS x 4, Ladders x 2, Clinometers x 4, Pesons, penta- decameters, machetes, ladder for climbing, etc.)	8 000	8 000		
41.7	Purchase of motorbike	2 500	2 500		
41.8	Construction of seed unit	30 000	30 000		
42.1	Laboratory equipment (irrigation system, spraying machine, etc.)	10 000	10 000		
42.2	Establishment of infrastructure for mass-production of certified seedlings	20000		20000	
42.3	Purchase of basic material and tools for groups (bags, boots, watering cans, hoes, wheelbarrows, buckets, nets, etc.)	10 000	10 000		
49	Component total	127 100	107 100	20 000	0
50	Consumable items				
51.1	Fuel and lubricants	10 800	3 600	3 600	3 600
51.2	Spare parts	2500	500	1000	1000
51.3	Vehicle insurance	450	150	150	150
51.4	Office supplies	3 600	1200	1200	1200
51.5	Networks and utilities	5400	1800	1800	1800
51.6	Import of material for forest tree seed conservation	8000	8000		
51.7	Laboratory consumables	12 000	4 000	4 000	4 000
59	Component total	42 750	19 250	11 750	11 750
60	Miscellaneous				
61.1	Rental of office premises	10800	3600	3600	3600
61.2	Rental of room for inception workshop	500	500		
61.3	6 Meetings of Project Steering Committee	3 600	1200	1200	1200
62.1	Project audits (4)	8 000	2000	2000	4000
62.2	Rental of meeting room for validation workshop				
69	Component total	22 900	7 300	6 800	8 800
80	Project monitoring and administration				
81	ITTO monitoring and evaluation	30 000	10 000	10 000	10 000
82	ITTO ex-post evaluation	15 000			
83	ITTO program support costs (12% on 10-83 above items)	45 372	26 712	10 020	8 640
89	Component total	71 004	35 296	19 444	16 264
100	GRAND TOTAL	554 322	318 262	124 470	111 590

3.4.3. Budget contribution by component - ITTO

Budget component	Description	Total cost US\$	Year 1	Year 2	Year 3
10	Project personnel				
11.2	1 Project coordinator	21 600	7 200	7 200	7 200
11.3	1 Assistant for project monitoring and evaluation	18 000	6 000	6 000	6 000
11.4	1 Forestry technician	18 000	6 000	6 000	6 000
11.5	Laboratory Technician in plan biotechnology (asexual propagation)	14 400	4 800	4 800	4 800
11.6	1 Laboratory Assistant	18 000	6 000	6 000	6 000
19	Component total	90 000	30 000	30 000	30 000
20	Subcontracting				
21.1	Inventory, identification and selection of forest tree species	15 000	15 000		
21.2	Establishment of plots of origin (15 ha)	10 000	10 000		
21.5	Maintenance and evaluation of 300 ha of seed plots	15 000	5 000	5 000	5 000
21.9	Consultant/trainer in certified seed production technique	15 000	7500	7 500	
29	Component total	55 000	37 500	12 500	5 000
30	Duty travel				
31.1	Travel for exchange on seed conservation techniques	4 000	4 000		
31.2	Mission for monitoring & evaluation and data collection	5 000	5 000		
31.3	Travel for exchange on seed conservation techniques x 3 persons	15000	15000		
31.4	Workshop for validating procedure manual	4 000	4 000		
31.5	6 missions x 5 days x 4 participants for awareness raising of grassroots stakeholders in project municipalities	8400	2800	2800	2800
31.6	Duty travel costs for missions	600	200	200	200
31.7	4 missions for establishing associations of approved producers of improved seedlings	4 000	1000	2 000	1000
31.8	Training workshop for improved seedling producers	8400	2800	2800	2800
39	Component total	49 400	34 800	7 800	6 800
40	Capital goods				
41.1	1 Field vehicle	40 000	40 000		
41.2	4 Laptops	3200	3200		
41.3	2 Printers	1 600	1 600		
41.4	1 Photocopy machine	1 500	1 500		
41.5	Power surge protectors	300	300		
41.6	Purchase of field equipment (GPS x 4, Ladders x 2, Clinometers x 4, Pesons, penta- decameters, machetes, ladder for climbing, etc.)	8 000	8 000		
41.7	Purchase of motorbike	2 500	2 500		
41.8	Construction of seed unit	30 000	30 000		

Budget component	Description	Total cost US\$	Year 1	Year 2	Year 3
42.1	Laboratory equipment (irrigation system, spraying machine, etc.)	10 000	10 000		
42.2	Establishment of infrastructure for mass-production of certified seedlings	20 000		20 000	
42.3	Purchase of basic material and tools for groups (bags, boots, watering cans, hoes, wheelbarrows, buckets, nets, etc.)	10 000	10 000		
49	Component total	127 100	107 100	20 000	0
50	Consumable items				
51.4	Office supplies	3 600	1200	1200	1200
51.6	Material for forest tree seed conservation	8000	8000		
51.7	Laboratory consumables	12 000	4 000	4 000	4 000
59	Sub-total component	23 600	13 200	5 200	5 200
60	Miscellaneous				
61.3	6 Meetings of Project Steering Committee	3 600	1200	1200	1200
62.1	Project audits (3)	8 000	2000	2000	4000
69	Component total	11 600	3 200	3 200	5 200
80	Project monitoring and administration				
81	<u>ITTO monitoring and evaluation</u>	<u>30 000</u>	<u>10 000</u>	<u>10000</u>	<u>10000</u>
82	<u>ITTO ex-post evaluation</u>	<u>15 000</u>			<u>15 000</u>
	<u>Sub-total</u>	<u>378 100</u>	<u>222 600</u>	<u>83 500</u>	<u>72 000</u>
83	<u>ITTO program support costs (12% on 10-83 above items)</u>	45 372	26 712	10 020	8 640
89	Component total	90 372	36 712	20 020	33 640
100	GRAND TOTAL	447 072	262 512	98 720	85 840

3.4.4. Budget contribution by component – Executing Agency

Budget Component	Description	Total Cost US\$	Year 1	Year 2	Year 3
10	Project personnel				
11.1	1 Project coordinator	36 000	12 000	12 000	12 000
11.7	1 Driver/messenger	10 800	3 600	3 600	3 600
19	Component total	46 800	15 600	15 600	15 600
20	Sub-contracting				
21.4	Labor for fieldwork (weeding and grubbing)	30 000	30 000		
29	Component total	30 000	30 000	0	0
50	Consumable items				
51.1	Fuel and lubricants	10 800	3 600	3 600	3 600
51.2	Spare parts	2500	500	1000	1000
51.3	Vehicle insurance	450	150	150	150
51.5	Networks and utilities	5400	1800	1800	1800
59	Component total	19 150	6 050	6 550	6 550

Budget Component	Description	Total Cost US\$	Year 1	Year 2	Year 3
60	Miscellaneous				
61.1	Rental of office premises	10800	3600	3600	3600
61.2	Rental of room for inception workshop	500	500		
69	Component total	11300	4100	3600	3600
100	GRAND TOTAL	107 250	55 750	25 750	25 750

3.5. Assumptions, risks and sustainability

3.5.1. Assumptions and risks

The main assumptions for project success are as follows:

The various stakeholders support and participate in the project: Among the challenges involved in implementing forest development projects is the lack of communication between stakeholders. Lack of awareness and information of stakeholders on project stakes and their lack of organization into viable entities able to support the implementation of project objectives may hinder optimal success.

The production cost of high-performing planting stock is affordable by private plantation owners: It is highly likely that quality seeds will cost more than common, run-of-the-mill seeds. However the experiences of stakeholders in the purchase of improved agricultural seed compared to common seeds will lead them to prefer prime quality forest tree seeds. In addition, some growers have always preferred the teak seeds from Tanzania whose prices are relatively high in the market. Wherever possible, the DGEFC will subsidize the price of seeds for cooperatives or nursery operators' associations. If need be, awareness campaigns on the benefits of using high-quality seeds will be held to encourage forest tree seed users to source high-quality seeds.

Risks

The potential risks identified for this project are as follows:

Bushfires:

Bushfires can destroy seed plots of teak and native species. Measures taken to mitigate this risk will be as follows:

- To set up firewalls to protect plots
- To conduct advocacy campaigns among local communities in critical moments
- To install sign posts around plots and seed stands to induce awareness among the communities and deter any trespassers.

Climate hazards

Climate hazards may result in decreased seed production and increased tree mortality in the seed plots. The phenological periods involved are known for all species, and a maximum number of seeds will be collected and stored each season to meet the deficit years in seed production.

Competition from common, run-of-the mill seeds: Private planters are aware of the risks involved in the use of seeds from unspecified sources. They will tend to favor high-quality seeds in spite of their being relatively costlier.

Contamination of seed sources

Gene migration between plus-trees and ordinary trees can cause a decline in the quality of resulting seeds. Isolation of seed plots may reduce accidental pollination.

3.5.2. Sustainability

The project will address a need long expressed by some stakeholders to assist in the development of a sustainable forest seed supply system. Project sustainability will depend on its ownership by all stakeholders in financial and technical, economic, institutional and policy terms:

- In technical sustainability terms, seedling production and reforestation activities are routine activities for DGEFC. DGEFC has qualified personnel for monitoring and supporting nursery operators and seed collectors. In addition, the DGEFC has seedling production sites and gazetted natural forest under management plans. These nurseries and sites are supported by the DGEFC and will produce improved seedlings for reforestation activities in the State-owned estate and for direct sale to interested private planters.
- In terms of financial and economic sustainability, the DGEFC has its own budget and can continue to secure and enhance project outcomes. In addition, the current strong drive for plantation establishment in Benin and the fast-increasing number of nursery centers producing forest seedlings will provide the right conditions for ensuring the sustainability of project activities. Regarding the seed distribution mechanism, distribution focal units will be established in all six major departments of Benin, and will be supervised by the Forest Inspectorates.
- At the social level, seedling production is an activity that is in part subcontracted by the Forest Administration to local people and grassroots organizations. This project will help formalize this activity. The establishment of seed plots will help reduce unemployment and rural migration by generating jobs for local communities in nursery work, the establishment and maintenance of seed-producing tree stands, as well as harvesting and post-harvesting operations. Women who will undertake most nursery and seed collection work will derive substantial income.
- In environmental terms, reforestation is an ongoing activity conducted every year and the establishment of a structure for collecting and managing forest tree seeds will significantly support the national programs for managing genetic resources and biodiversity.
- **At project completion, project outcome sustainability will be ensured by the DGEFC, research structures. Regarding private growers, the leaders to be trained through the project in the various regions will serve as resource persons. Private growers to be trained by the project will serve as resource persons for the propagation of high-yield seedlings directly on these sites. Technical procedures and other guides will be developed through the project to provide all necessary information on the best conditions needed to propagate high-yield seedlings. Nurseries and plots directly established on growers' private estates will also contribute to the project outcomes sustainability.**
- In terms of political sustainability, the DGEFC will take advantage of the National Tree Day and reforestation campaigns to enhance the material developed by the project. Currently the major project entitled "Intensive Reforestation Program" being implemented across the territory is a plant cover rehabilitation project which will use over 10 million seedlings. Furthermore, Benin is committed to a forest development policy through several programs, such as PAGEFCOM, the project for gazetted forests, which are projects with forest restoration and reforestation components. Therefore, this project is a timely initiative.

PART 4: IMPLEMENTATION ARRANGEMENTS

4.1. Organizational structure and stakeholders participation mechanism

4.1.1. Executing agency and partners

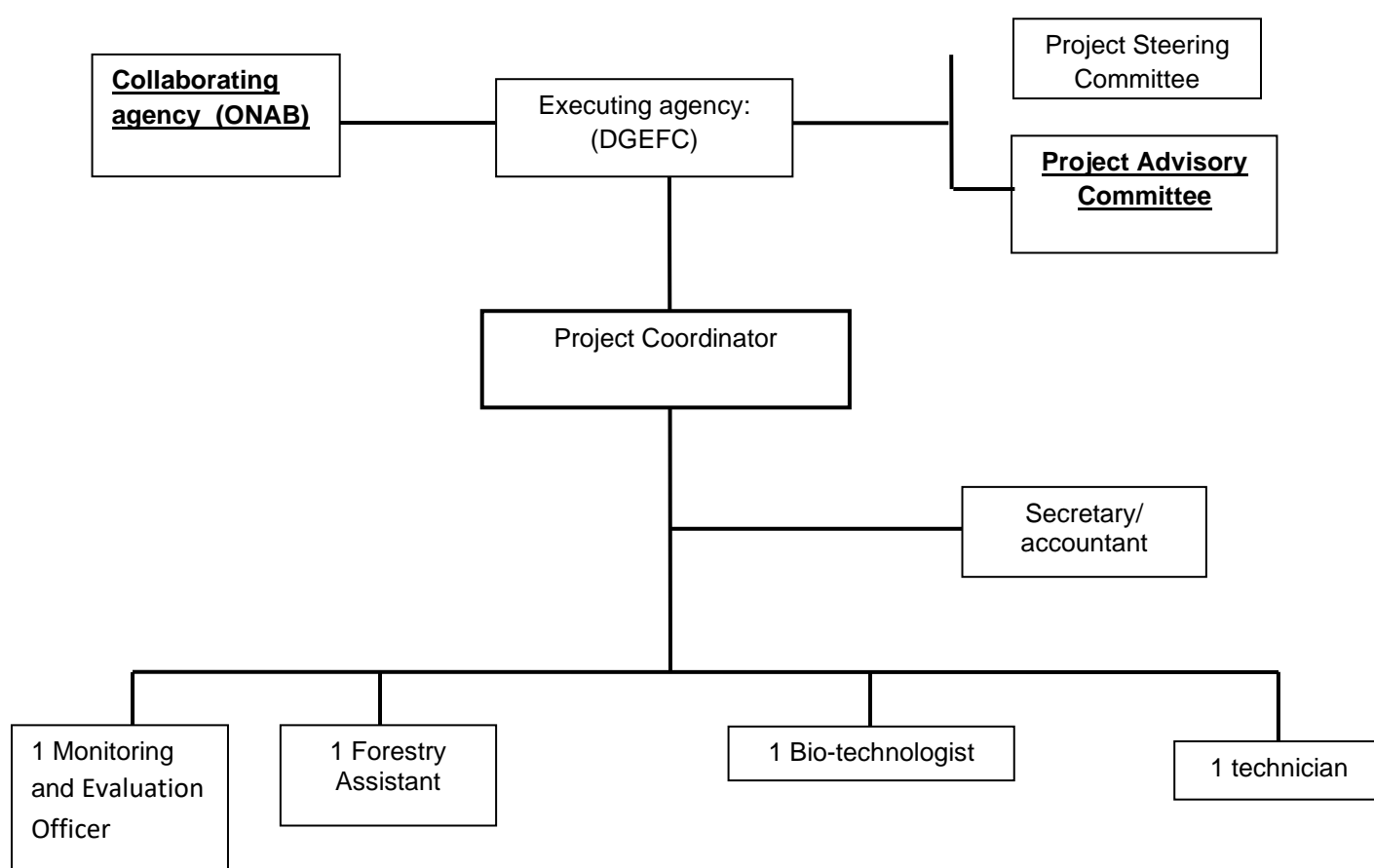
The DGEFC will serve as the project executing agency and include a multidisciplinary team. The project will be implemented by a “Steering Unit” that will include the DGEFC General Director acting as supervisor, the Project Coordinator, a Project Monitoring and Evaluation Expert, and a Secretary/Accountant. The Steering Unit will be assisted by consultants. The Steering Unit will monitor the execution of the various studies to be conducted by sub-contractors.

The Executing Agency will work with the personnel of the Collaborating Agency, which is the FUPRO-BENIN and all stakeholders identified during the project development phase. The latter will contribute to the successful implementation of the project.

4.1.2. Project Management team

Individual profiles and CVs of provided personnel are included in annex.

Figure 4: Project organizational chart



4.1.3. Project Steering Committee

The task of the Project Steering Committee is to oversee the project, approve expenditures, ensure compliance with standard procedures, review the activities carried out and to consider and propose changes in budget and activities. The Project Steering Committee provides overall strategic management of the project and ensures that project implementation remains within the planned timeframe, and is conducted efficiently and in accordance with the logical framework matrix and other sections of project document.

The PSC is comprised of:

1. **One ITTO representative;**
2. **One representative from each project donor;**
3. One representative of the Ministry of the Living Environment and Sustainable Development (MCVDD);
4. One representative of CERF;

5. One representative of forestry training universities/laboratories;
6. One representative of the Executing Agency;
7. One representative of nursery operators; and
8. The Project Coordinator (who will also serve as the secretariat of the Steering Committee).

The Project Steering Committee will convene at least once a year.

4.1.4. Stakeholders participation mechanisms

The participation of stakeholders will be achieved through the mechanism for stakeholders' coordination and consultation.

The Executing Agency will establish an Advisory Committee comprising the structures involved in forest tree seeds. The Advisory Committee will be responsible for providing information to stakeholders and for establishing a platform through which stakeholders are able to provide inputs to the project, and will support project coordination. It will also serve as a mediator for solving any issues that may arise during the project implementation.

The Advisory Committee will be comprised of:

- **Two representatives of private nursery operator associations;**
- **Two representatives of private grower associations;**
- **One representative of the National Timber Agency (ONAB);**
- **Two representatives of local structures responsible for managing participatory forest management plans;**
- **One representative of NGOs heavily involved in the management of forest resources;**
- **The project coordinator; and**
- **One representative of forestry training universities/laboratories.**

The Advisory Committee will be chaired by a member of the Committee to be elected following the first meeting convened by the Coordinator, who will also serve as the Secretary of the Advisory Committee. Regarding the seed distribution mechanism, distribution focal units will be established in the six major departments (administrative divisions) of Benin and will be supervised by the Forest Inspectorates.

4.2. Reporting, review and monitoring & evaluation

The Executing Agency will submit reports to the ITTO with a frequency that is suitable for projects with a three years' duration. Monitoring and evaluation missions will be conducted by ITTO appointed officers at such intervals as it deems appropriate.

The project will be monitored and evaluated by representatives of the ITTO in accordance with the usual procedures of the Organization.

4.2.1. Project progress report

A project inception report and the first Annual Operation Plan (AOP) will be developed for the transfer of the first ITTO funding installment required to start the project. Semestrial progress reports will be periodically submitted to ITTO. The annual financial audit report will also be prepared and submitted each year for the entire project duration.

4.2.2. Project completion report

At project completion, the project management team will prepare a project completion report and submit it to the ITTO within three months following project completion together with the audit report in compliance with ITTO standards and requirements. This report will summarize all activities and results achieved, project learning, etc.

4.2.3. Project technical reports

The Executing Agency will make available to the ITTO and other interested structures all technical reports and studies reports to be prepared by consultants during project implementation.

4.3. Project learning dissemination and mainstreaming

4.3.1. Project learning dissemination

Dissemination of project learning will be operated through technical reports, progress reports and a final report. Reports of workshops, which will be held to raise stakeholders' awareness to the project and to provide them with training, will also be edited and published. Dissemination could be achieved via the respective websites of the Ministry and DGEFC; **and participation in seminars and workshops. High-quality seed promotion will also be achieved through publicity and participation in events organized by the DGEFC for International Biodiversity Day and International Forest Day.**

4.3.2. Project learning mainstreaming

This project will serve as a basis for DGEFC to establish a basis for cooperation and information exchange between the forest tree seed centers in the subregion. Cote d'Ivoire, Togo and Burkina Faso have already developed their own respective forest tree seed programs. In addition, learning and experience generated through project implementation will serve to plan the production of clonal varieties for other threatened forest tree species.

ANNEX 1: Profile of the Executing Agency

Nom: General Directorate of Water, Forests and Hunting (DGEFC)

Postal address: BP : 393 COTONOU (Rep. of BENIN)

Tel. : (229) 21-33-06-62, E-mail : foretsbenin@yahoo.fr ; lokossouo@yahoo.fr

Established by decree n° 2428 of the Governor of French West Africa (FWA) of 23 July 1938, the Directorate of Water, Forests and Hunting became the General Directorate of Forests and Natural Resources (DGFRN) in 2006 by Decree 2006-460 of 7 September 2006 on the Responsibilities, Organization and Functioning of the Ministry of the Environment and Protection of Nature (MEPN), and the General Directorate of Water, Forests and Hunting (DGEFC) in June 2015 through law N° 2015-20 of 19 June, 2015 establishing the special status of personnel from the public security forces and associated units. Its main mission is to ensure the protection, production and valorization of forest resources (soil, water, flora, fauna) in order to make the forest sector a source of increased social benefit and added value to the national economy. From an institutional point of view, the DGEFC is responsible for planning and implementing the national forest policy based on the developed Water, Forests, and Hunting Program (PEFC), which is one of the core programs of the Ministry of Forests, the Ministry of Living Environment and Sustainable Development (MCVDD). As such, it is in charge of exclusive and non-exclusive missions.







Exclusive missions include:

- development and monitoring of the implementation of policies, strategies and programs for the development of the forest sector
- coordination, planning and monitoring & evaluation of the forestry sector
- drafting and monitoring the application of legislative and regulatory texts relating to forests and wildlife
- development of development plans for state-owned gazetted areas
- validation of development plans and other management tools for protected areas
- administration and monitoring of development plan implementation in state-owned gazetted areas
- orientation, definition, monitoring and control of public and private actors involved in the management of natural resources as well as their roles
- monitoring of ratified international and regional conventions and agreements on forests and wildlife
- facilitation of an intersectoral consultation framework involving all stakeholders in the forest sector
- organization and implementation of forest-law enforcement forces
- development and monitoring of the sustainable financing strategy implementation in the forest sector
- collection of taxes and royalties related to natural resources in accordance with the provisions of the finance laws and other legal and regulatory instruments in force
- execution of all missions related to the specificity of the Water, Forestry and Hunting personnel as a component of the Public Security and Related Enforcement Forces

Non-exclusive missions include:

- implementation of policies, strategies and programs for the development of the forest sector
- constitution, monitoring, preservation and restoration of the state-owned protected estate
- promotion of value chains for timber and non-timber forest products
- assistance to individuals and local authorities for the development and implementation of development plans in the fields of flora and wildlife;
- participation in the execution of work relating to the conservation and management of water and soils
- implementation of the communication strategy for the promotion of behavior change in relation to all the other authorized structures
- implementation of international conventions and agreements ratified in terms of forests and wildlife
- implementation of the sustainable financing strategy for the forest sector
- promotion of reforestation and support and advice to local authorities and private actors in the fields of sustainable forest management, wildlife and natural resources

At the central level, the DGEFC is based on a General Secretariat, a General Inspectorate of Forest Services (IGSF), a Cabinet of the DGEFC and six Technical Departments, namely:

-  Directorate of Stewardship, Material and Equipment Services (DSIME);
-  Directorate of personnel organizing and training (DOFP);
-  Directorate of reforestation and forest management (DRAF);
-  Directorate of Natural resource Conservation and Promotion (DCPRN);
-  Directorate of policies, Forest Logging Control and Litigation (DPCEFC);
-  Directorate of Programming and Monitoring & Evaluation (DPSE).

DGEFC's personnel includes 592 water and forest officers (paramilitary) and 178 civil officers distributed throughout the central level, decentralized structures, Projects/Programs and centers and agencies under its supervision.

Summary and indicative table of key programs and projects funding in the forest sector

N°	Projects and programs	Specific objectives	Starting date	Planned completion date	Funding 2017 (Million FCFA)	Sources of funding
1	PRI	<ul style="list-style-type: none"> - Establish large-scale plantations to contribute to national forest cover rehabilitation - Promote urban forestry and greening of living environment - Promote species adapted to each region climate and local needs - Protect vulnerable areas and human settlements through reforestation - Raise awareness of communities and strengthen the capacities in school and university education in environmental and civic education 	April 2016	2021	800	National Budget (NB)
2	PSBE-GAZ	Promote the use of domestic gas as cooking energy in substitution for wood fuel	April 2016	2021	127	National Budget (NB)
4	PAGEFCOM	<ul style="list-style-type: none"> - Support the establishment and monitoring of municipal plantations - Support the establishment of wildlife ranches - Promote the blue economy - Support the development of Simplified Development and Management Plans in reforestation areas 	June 2017	2020	1213	FAD : 800 GEF: 213 NF: 200

Annex 2. CVs of personnel provided by the Executing Agency

CV of Project Coordinator

CURRICULUM VITAE

1. **Surname:** NOUMONVI
2. **Names:** Cossi Germain Raoul
3. **E-mail :** nraoul2001@yahoo.fr
4. **Tel :** (00229) 97 06 71 92/ 64 12 30 99
5. **Date of birth:** 27 May1976
6. **Education:**

Institution (Date from - to)	Certificate(s) or diploma(s):
National School of Water, Forests and Hunting February-May 2019	Professional Advanced Diploma in Forestry Officer (DPPOF)
Faculty of Agronomics (University of Abomey-Calavi) / (RESBIO) April 2012-June 2013	Master 2 in Management of Natural Resources and Biodiversity
National School of Officers of Toffo January-May 2007	Diploma of Officers Specialist in Water, Forests and Hunting
Tropical Veterinary Institute, University of Liège, Belgium September 2002-August 2003	Interuniversity Diploma of Specialized Studies in Management of Animal and Plant Resources in Tropical Environments. Option: Tropical Wildlife Management
Polytechnic University College (C.P.U.), National University of Benin October 1995-July 1999	Diploma of Works Engineer (D.I.T.) in Environmental Planning and Protection
General Education College 1 of Abomey 1992-1995	D series high school diploma

Current position: Head of Reforestation and Plantation Management Department, General Directorate of Water, Forests and Hunting

7. **Years of employment with current employer: 16 years (2006-2022)**

8. **Main skills:**

- ✚ Development and management of natural resources and biodiversity;
- ✚ Silviculture, reforestation and plantation management
- ✚ Management of forest species nurseries
- ✚ Coordination of project monitoring and evaluation missions
- ✚ Expert in development of forestry project proposals and development micro-project proposals
- ✚ Development, implementation and monitoring & evaluation of forestry projects

9. **Position in organization (General Directorate of Water, Forests and Hunting)**

Date from - until	Position held and detail of duties
14 Oct. 2021-to date	Head of Reforestation and Plantation Management Service: Responsible for implementing reforestation policies and strategies at the national level; develop standards, guidelines and guides for reforestation, and plantation development and management; monitor implementation of national reforestation program; promote reforestation and development in the State-owned planted estate, community and private planted estate; develop and implement restoration and silvicultural treatment strategies for plantations; support private plantation operators, local communities and decentralized authorities in the development and implementation of management plans for their plantations; promote reforestation and a green economy at the national level; coordinate reforestation efforts as part of the national reforestation campaign; and monitor the development and management of state-owned plantations

Date from - until	Position held and detail of duties
18 Dec. 2018- 14 Oct. 2021	Head of Reforestation and Forest Management Department, Zou Forest Inspectorate: Responsible for supporting the implementation of participatory development plans for natural forests in the state-owned gazetted forests; support private plantation operators, communities and authorities in the implementation of management plans for their forests and plantations; promote reforestation and the development of state-owned forests, local authority-owned forests and forests owned by individuals; support reforestation and reforestation activities throughout the Inspectorate area in liaison with the other actors concerned; coordinate implementation of annual national reforestation programs; monitor management of state-owned plantations and organize the sustainable management of wood energy and rural markets for natural wood.
1 April 2014-18 Dec. 2018	Head of Regulation and Control Division at the DGEFC: Tasks: Ensure compliance with forestry legislation in terms of fauna and flora and monitor the implementation of agreements and conventions relating to its areas of competence under the supervision of the head of department,.
July 2013 Dec. 2014	Head of Monitoring and Evaluation of Project "Establishment of a national forest statistics management system in Benin" (co-financed by Benin and ITTO) Develop the detailed plan of activities for establishing the system; assist the Coordinator in the implementation of activities; monitor and evaluate work plan implementation; monitor the activities of SIGSTATFOR Focal Points and field activities; collect data from other actors outside the sector; monitor the implementation of previous agreements and participate in the validation of the various studies.
Feb. 2013- April 2014	Head of Policy, Statistics and Summary Reports Division, Planning, Monitoring-Evaluation, Statistics and Synthesis Department (SPSES) at the DGEFC: Organize the drafting of DGFRN activity reports; initiate or participate in the development of forest sector development policies and strategies; organize or participate in inventories and various studies, organize the collection and manage data / statistics and documentation in the forest sector and participate in meetings and all assigned activities.
Nov. 2011- Feb. 2013	Head of Wood Energy Division (C/DBE), General Directorate of Water, Forests and Hunting: Assist the Department Head in the monitoring and evaluation of policies and promotion of renewable energies; support the establishment and management of system for collecting and processing data on wood energy and other energy sources; support and monitor the establishment and operation of Rural Wood Markets; support the development and implementation of the new legal, regulatory and fiscal framework; and ensure the implementation of coupons in forest inspectorates, rural wood markets and CTAFs.


10. Commitment:

11. I, the undersigned Commander Cossi Germain Raoul NOUMONVI, certify, in good faith, that the above information faithfully reflects my situation, my qualifications and my experience.

Cotonou, 28 July 2022

Commandant Cossi G. Raoul NOUMONVI

CV of Project Monitoring & Evaluation Assistant

Curriculum Vitae			
Personal information			
First name(s) / Surname(s)	TCHOUGOUROU; Epiphane Ernest Arnaud Ayétchoro		
Address(es)	BP: 2124 Abomey-calavi; BENIN		
Telephone(s)	-	Mobile:	+229 95386879 / +229 97720708
Fax(es)	+229 21332192 / +229 21330421		
E-mail	tchould@yahoo.fr		
Nationality	Benin		
Date of birth	7 January 1979		
Gender	MALE		
Work experience			
Dates	October 2021- to date		
Occupation position held	or	Head of Planning, Monitoring-Evaluation and Statistics Department, DGEFC Deputy Focal Point in charge of Monitoring and Evaluation of Water, Forests and Hunting Program Head of Legal and User Relations Department	
Dates	October 2019-September 2021		
Occupation position held	or	Head of Personnel, Equipment, Materials and Finance Department, Zou Forest Inspectorate	
Dates	November 2016-September 2019		
Occupation position held	or	Head of the Savè Forest Cantonment	
Dates	October 2015-to date		
Occupation position held	or	Head of Policy and Studies Division, General Directorate of Forests and Natural Resources.	
Dates	December 2014-October 2015		
Occupation position held	or	Coordinator of the Technical Unit for Forest Management of Tchaourou and Toui-Kilibo Gazetted Forests	
Dates	April 2014-November 2014		
Occupation position held	or	Collaborator of the Head of Forest Management Service, General Directorate of Forests and Natural Resources.	
Dates	December 2011-March 2014		
Occupation position held	or	Deputy Head of Kétou Forest Cantonment	

Dates	October 2007-November 2011
Occupation or position held	Head of Division of Forest Stewardship Services, MONO/COUFFO Forest Inspectorate
Type of business / sector	Forestry
Education and training	
Dates	April 2015-March 2017
Title of qualification awarded	<i>Master in management and conservation of species subject to international trade: the international framework (12th Edition).</i>
Dates	January 2006-December 2006
Title of qualification awarded	<i>Certificate of Aptitude for Teaching Secondary Education (CAPES).</i>
Name and type of organization providing education and training	Higher Normal School of Natitingou (ENS-NAT), University of Parakou
Dates	<i>October 2000-Août 2004</i>
Title of qualification awarded	Diploma in Environmental Planning and Protection Works Engineering (DIT)
Name and type of organisation providing education and training	Polytechnic School of Abomey-Calavi (EPAC), University of Abomey-Calavi.
Personal skills and competences	
Mother tongue(s)	Yoruba
Other language(s)	French, English
Computer skills and competences	Computer proficiency: Word, Excel, PowerPoint software
Driving licence	Driving licence, B category

Cotonou, 5 July 2022

TCHOUGOUROU Epiphane Ernest Arnaud Ayétchoro

Annex 3. Terms of reference personnel and consultants funded by ITTO

Personnel/experts to be provided	Tasks and duties
<u>Project coordinator (forest engineer)</u>	<ul style="list-style-type: none"> - <u>Responsible for project management;</u> - <u>Develop and submit annual work plan to Project Steering Committee;</u> - <u>Coordinate all project activities in accordance with developed work plan;</u> - <u>Liaise with the ITTO through progress reports on project progress;</u> - <u>Liaise with collaborating agencies;</u> - <u>Report to executing agency and Project Steering Committee on project management;</u> - <u>Authorize disbursements.</u>
<u>Project assistant In charge of monitoring and evaluation</u>	<ul style="list-style-type: none"> • <u>Assist Coordinator in project management tasks;</u> • <u>Develop the detailed project work plan;</u> • <u>Conduct monitoring and evaluation of project implementation;</u> • <u>Draft terms of reference for procurement contracts and consultants, and monitor their field implementation;</u> • <u>Monitor the implementation of studies;</u> • <u>Organize validation workshops for studies/training workshops;</u> • <u>Take charge of outreach and awareness-raising campaigns targeting project stakeholders;</u> • <u>Prepare the final pre-project technical report, including summary of conducted studies and formulated project proposal as annexes.</u>
<u>Project Secretary-Accountant</u>	<ul style="list-style-type: none"> • <u>Assist Coordinator with secretariat duties;</u> • <u>Typing, editing, filing and storage of project documents;</u> • <u>Manage Coordinator work schedule;</u> • <u>Edit reports of meetings chaired by Coordinator;</u> • <u>Design recording media for project accounting and financial operations;</u> • <u>Record all project accounting transactions;</u> • <u>Prepare the cash flow plan;</u> • <u>Prepare all documents required for project accounts auditing.</u>
<u>National consultant in charge of inventory, identifying and selecting priority forest species for which improved seeds will be produced. Agricultural engineer geneticist or plant breeder</u>	<ul style="list-style-type: none"> - <u>Compile and analyze all existing data in nursery operators on the production of forest species seed and seedlings;</u> - <u>Analyze and summarize the forest species needs of private and community planters;</u> - <u>Identify and describe and characterize rare or threatened forest species for which seed production is urgent;</u> - <u>Map the habitat areas of these forest species;</u> - <u>Assess the potential for multiple use of resources by communities;</u> - <u>Describe the methods used for collecting seeds and the use of these species by local communities;</u> - <u>Identify the problems related to the collection, conservation of these forest seeds;</u> - <u>Identify and evaluate existing seed production trials (technical routes, strengths and weaknesses, constraints, etc.);</u> - <u>Assess the potential and constraints of natural regeneration and reforestation;</u> - <u>Conduct an analysis of the constraints and opportunities for the production and marketing of forest seeds;</u> - <u>Present the study carried out at a validation workshop;</u> - <u>Participate in the validation workshop of project document to be submitted to ITTO;</u>

Personnel/experts to be provided	Tasks and duties
<u>Contractor in charge of maintenance and assessment of 300 ha-area of seed plots</u>	<ul style="list-style-type: none"> - <u>Develop a methodology for the selection and development of seed plots;</u> - <u>Develop seed plots;</u> - <u>Demarcate, protect and secure seed plots;</u> - <u>Establish a repertory of seed plots and seed trees of different species;</u> - <u>Establish the methodology, planning and technique for collecting seeds;</u> - <u>Training of local communities on the management of seed plots and on the collection of quality seeds</u>
<u>Contractor in charge of constructing laboratory and cold room for the management of forest species seeds</u>	<ul style="list-style-type: none"> - <u>Construction of laboratory</u> - <u>Construction of cold room;</u> - <u>Construction of storing room;</u> - <u>Laboratory equipment;</u> - <u>Equipment and maintenance of cold room.</u>

Annex 4. Project assessment by the Fifty-sixth Expert Panel

PD 921/21 (F) Support for the Conservation and Promotion of Forest Tree Seeds in Benin

Assessment by the Fifty-Sixth Panel

A) Overall Assessment

The Panel recognized that the project aims at contributing to ensure the production of certified seedlings for forest tree species in sufficient quantity with the goal to increase national forest cover through long-term efforts on reforestation and soil conservation in Benin. The unavailability of high-quality forest tree seeds, in particular those of most used species, impedes the forest production increase and activities regarding the reforestation and soil conservation in Benin.

However, the Panel noted that the project proposal contained a number of weaknesses in the sections and sub-sections dealing with: **(1)** Sufficient information on project context was available but origin of the project remained unclear in relation to the goal to ensure the production of certified forest tree seeds; **(2)** map with non-adequate scale making it difficult to clearly indicate the project area; **(3)** there is no reference to the ITTO Environmental and Social Guidelines (PS-23) in the analysis done in both the Sub-section 1.3.2 and Sub-section 1.3.3; **(4)** expected outcomes at project completion are not clearly correlated to the outcome indicators of the project specific objective; **(5)** besides for DGEFC the institutional set-up and organizational issues are not enough elaborated for other relevant partners in relation to what could be their roles, responsibilities and organizational aspects; **(6)** stakeholder analysis not elaborated enough to provide the appropriate information allowing the interpretation and understanding of the stakeholder tables; **(7)** problem analysis not appropriately elaborated as there is no clear explanation on the how the key problem is correlated to the causes and effects; **(8)** indicators still needing improvement for development objective and specific objective; **(9)** project implementation approaches and methods not clearly describing how to address the key problem and the names of 15 species to be used for the production of certified forest tree seeds are not provided in the Section 3.2; **(10)** in the Section 3.3 (Work plan) and Sub-section 3.4.1 (master budget), 4 outputs are mentioned, in contradiction with the problem tree and solution tree; **(11)** master budget table and related budget by components have taken into account the elements of Output 4 not derived from the problem tree and solution tree; **(12)** elements on the social sustainability and environmental sustainability of the project not referring to ITTO Environmental and Social Guidelines (PS-23); **(13)** project steering committee not placed at the top of the organizational structure chart; **(14)** while some mechanisms are mentioned, the overall communication strategy is still weak and there is no description on how the project's results will be mainstreamed into national policies; **(15)** the profile of the implementing agency (DGEFC) and collaborating agency (FUPRO-Benin) are missing, as well as the CV of the project manager and key project personnel to be paid by the ITTO budget; **(16)** the TORs following the structure included in the ITTO Manual (page 68, French version), for consultants and experts, are missing as annexes.

B) Specific Recommendations

The proposal should be revised taking into account the overall assessment **and** the following:

1. Improve the project origin in relation to the goal to ensure the production of certified forest tree seeds.
2. Provide a map with an appropriate scale allowing to clearly indicate the project target sites.
3. Re-visit the Sub-section 1.3.2 and Sub-section 1.3.3 while making sure to take into account relevant elements of the ITTO Environmental and Social Guidelines (PS-23).
4. Reformulate the expected outcomes (Chapter 1.4) in consistency with the outcome indicators of the specific objective. There is a need to refer to the guidance box on page 23 of the ITTO manual for project formulation (French version).
5. Further elaborate the institutional set-up and organizational issues, in compliance with the requirements of the ITTO manual for project formulation, for key partners to be involved the project implementation.

6. Improve the stakeholder analysis with additional elements introducing in a comprehensive manner the stakeholder table and describing who might influence or be influenced by the identified key problem or by the potential solution to that problem.
7. Improve the problem analysis with appropriate causes and effects which are really correlated to the identified key problem, while adequately describing the causes and effects of the identified key problem and revising the problem tree and objective tree accordingly, in compliance with appropriate guidance of the ITTO manual for project formulation.
8. Improve the logical framework matrix in correlation with the revised problem tree and solution tree, and while making sure to have measurable and realistic indicators for a 3-year project (not by 2030 which beyond the project duration) and be in accordance with the requirements of the ITTO manual for project formulation.
9. Subsequent to the improvement of the logical framework matrix, the indicators of the development objective and specific objective should be redefined accordingly in compliance with the requirements of the ITTO manual for project formulation.
10. Subsequent to the improvement of the problem analysis, revise the Section 3.1 (Outputs and activities) accordingly, while making sure to delete Output 4 in the Section 3.3 (Work plan) and Sub-section 3.4.1 (master budget).
11. Improve the implementation approaches and methods by describing how to address the key problem in accordance with the requirements of the ITTO manual for project formulation, as well as by describing 15 forest tree species to be used for the production of certified forest tree seeds.
12. Improve the Section 3.5.2 (sustainability) in consistency with the elements described in the assumptions of the logical framework matrix, while referring to the ITTO Environmental and Social Guidelines (PS-23) for social and environmental sustainability, and in accordance with the requirements of the ITTO manual for project formulation.
13. Improve the organizational structure chart in compliance with the requirements of the ITTO manual for project formulation (refer to figure 13 on page 64, in French version).
14. Further describe the communication strategy and methods of the project team and how the project results and learning will be made useful to users in the Sub-section 4.3.1 and describe how the project results will be mainstreamed into national policies in the Sub-section 4.3.2, as per the ITTO Manual.
15. Add as annexes, the profile of implementing agency (DGEFC) and collaborating agency (FUPRO-Benin), the 1-page CV of the project coordinator and key project personnel, the TORs following the structure included in the ITTO Manual (page 68, French version) for consultants and experts mentioned to be paid by ITTO budget.
16. Amend the ITTO budget in line with the above overall assessment and specific recommendations, and also in the following way:
 - a) Prepare a new master budget table with activities to be derived from the improved problem analysis, problem tree and objective tree, while making sure to delete all activities regarding the Output 4, and it should be the source for the readjustment of budgets by component, as required in the ITTO manual for project formulation,
 - b) Adjust the budget item 81 with the standard rate of US\$10,000.00 per year for the monitoring and review costs (US\$30,000 for 3 years) of a project implemented in Africa and the budget item 83 with the standard rate of US\$15,000 for ex-post evaluation costs,
 - c) Recalculate the ITTO Program Support Costs (sub-item 83) so as to conform with standard rate of **12%** of the total ITTO project costs (on budget items 10 to 82); and
17. Include an Annex that shows the overall assessment and specific recommendations of the 56th Expert Panel and respective modifications in tabular form. Modifications should also be highlighted (**bold and underline**) in the text.

C) Conclusion

Category 2: The Panel concluded that the project proposal requires essential modifications and will be returned to the proponent. The Panel will need to assess the revised project proposal before it can commend it to the Committee for final appraisal.

Annex 5. Recommendations of the 56th Expert Panel and resulting modifications

Assessment by the Fifty-sixth Panel	Resulting modifications
A) <u>Overall Assessment</u>	
<p>A) <u>Overall Assessment</u></p> <p>The Panel recognized that the project aims at contributing to ensure the production of certified seedlings for forest tree species in sufficient quantity with the goal to increase national forest cover through long-term efforts on reforestation and soil conservation in Benin. The unavailability of high-quality forest tree seeds, in particular those of most used species, impedes the forest production increase and activities regarding the reforestation and soil conservation in Benin.</p> <p>However, the Panel noted that the project proposal contained a number of weaknesses in the sections and sub-sections dealing with: (1) Sufficient information on project context was available but origin of the project remained unclear in relation to the goal to ensure the production of certified forest tree seeds; (2) map with non-adequate scale making it difficult to clearly indicate the project area; (3) there is no reference to the ITTO Environmental and Social Guidelines (PS-23) in the analysis done in both the Sub-section 1.3.2 and Sub-section 1.3.3; (4) expected outcomes at project completion are not clearly correlated to the outcome indicators of the project specific objective; (5) besides for DGEFC the institutional set-up and organizational issues are not enough elaborated for other relevant partners in relation to what could be their roles, responsibilities and organizational aspects; (6) stakeholder analysis not elaborated enough to provide the appropriate information allowing the interpretation and understanding of the stakeholder tables; (7) problem analysis not appropriately elaborated as there is no clear explanation on the how the key problem is correlated to the causes and effects; (8) indicators still needing improvement for development objective and specific objective; (9) project implementation approaches and methods not clearly describing how to address the key problem and the names of 15 species to be used for the production of certified forest tree seeds are not provided in the Section 3.2; (10) in the Section 3.3 (Work plan) and Sub-section 3.4.1 (master budget), 4 outputs are mentioned, in contradiction with the problem tree and solution tree; (11) master budget table and related budget by components have taken into account the elements of Output 4 not derived from the problem tree and solution tree; (12) elements on the social sustainability and environmental sustainability of the project not referring to ITTO Environmental and Social Guidelines (PS-23); (13) project steering committee not placed at the top of the organizational structure chart; (14) while some mechanisms are mentioned, the overall communication strategy is still weak and there is no description on how the project's results will be mainstreamed into national policies; (15) the profile of the implementing agency (DGEFC) and collaborating agency (FUPRO-Benin) are missing, as well as the CV of the project manager and key project personnel to be paid by the ITTO budget; (16) the TORs following the structure included in the ITTO Manual (page 68, French version), for consultants and experts, are missing as annexes</p>	Required modifications were reflected in project document (highlighted in bold and underlined)
B) <u>Specific Recommendations</u>	
1. Improve the project origin in relation to the goal to ensure the production of certified forest tree seeds	Page 1

2. Provide a map with an appropriate scale allowing to clearly indicate the project target sites;	Page 7: a more detailed map including target areas was inserted
3. Re-visit the Sub-section 1.3.2 and Sub-section 1.3.3 while making sure to take into account relevant elements of the ITTO Environmental and Social Guidelines (PS-23).	Relevant elements reflected in pages 3, 5, 6
4. Reformulate the expected outcomes (Chapter 1.4) in consistency with the outcome indicators of the specific objective. There is a need to refer to the guidance box on page 23 of the ITTO manual for project formulation (French version).	Expected outcomes at project completion were reformulated (page 9)
5. Further elaborate the institutional set-up and organizational issues, in compliance with the requirements of the ITTO manual for project formulation, for key partners to be involved the project implementation.	Page 10-11
6. Improve the stakeholder analysis with additional elements introducing in a comprehensive manner the stakeholder table and describing who might influence or be influenced by the identified key problem or by the potential solution to that problem	Pages 11-13
7. Improve the problem analysis with appropriate causes and effects which are really correlated to the identified key problem, while adequately describing the causes and effects of the identified key problem and revising the problem tree and objective tree accordingly, in compliance with appropriate guidance of the ITTO manual for project formulation	Pages 14-15
8. Improve the logical framework matrix in correlation with the revised problem tree and solution tree, and while making sure to have measurable and realistic indicators for a 3-year project (not by 2030 which beyond the project duration) and be in accordance with the requirements of the ITTO manual for project formulation	Pages 16-17
9. Subsequent to the improvement of the logical framework matrix, the indicators of the development objective and specific objective should be redefined accordingly in compliance with the requirements of the ITTO manual for project formulation	Pages 16-18
10. Subsequent to the improvement of the problem analysis, revise the Section 3.1 (Outputs and activities) accordingly, while making sure to delete Output 4 in the Section 3.3 (Work plan) and Sub-section 3.4.1 (master budget).	Page 18
11. Improve the implementation approaches and methods by describing how to address the key problem in accordance with the requirements of the ITTO manual for project formulation, as well as by describing 15 forest tree species to be used for the production of certified forest tree seeds	Page 19
12. Improve the Section 3.5.2 (sustainability) in consistency with the elements described in the assumptions of the logical framework matrix, while referring to the ITTO Environmental and Social Guidelines (PS-23) for social and environmental sustainability, and in accordance with the requirements of the ITTO manual for project formulation	Pages 32-33
13. Improve the organizational structure chart in compliance with the requirements of the ITTO manual for project formulation (refer to figure 13 on page 64, in French version).	Page 32
14. Further describe the communication strategy and methods of the project team and how the project results and learning will be made useful to users in the Sub-section 4.3.1 and describe how the project	Page 36

results will be mainstreamed into national policies in the Sub-section 4.3.2, as per the ITTO Manual	
15. Add as annexes, the profile of implementing agency (DGEFC) and collaborating agency (FUPRO-Benin), the 1-page CV of the project coordinator and key project personnel, the TORs following the structure included in the ITTO Manual (page 68, French version) for consultants and experts mentioned to be paid by ITTO budget	
16. Amend the ITTO budget in line with the above overall assessment and specific recommendations, and also in the following way: a) Prepare a new master budget table with activities to be derived from the improved problem analysis, problem tree and objective tree, while making sure to delete all activities regarding the Output 4, and it should be the source for the readjustment of budgets by component, as required in the ITTO manual for project formulation, b) Adjust the budget item 81 with the standard rate of US\$10,000.00 per year for the monitoring and review costs (US\$30,000 for 3 years) of a project implemented in Africa and the budget item 83 with the standard rate of US\$15,000 for ex-post evaluation costs, c) Recalculate the ITTO Program Support Costs (sub-item 83) so as to conform with standard rate of 12% of the total ITTO project costs (on budget items 10 to 82); and	Page 30
17. Include an Annex that shows the overall assessment and specific recommendations of the 56 th Expert Panel and respective modifications in tabular form. Modifications should also be highlighted (<u>bold and underline</u>) in the text	Pages 40-43
C) <u>Conclusion</u> <u>Category 2</u> : The Panel concluded that the project proposal requires essential modifications and will be returned to the proponent. The Panel will need to assess the revised project proposal before it can commend it to the Committee for final appraisal	

Annex 6. Project assessment by the Fifty-seventh Panel

PD 921/21 Rev.1 (F)

Support for the Conservation and Promotion of Forest Tree Seeds in Benin

Assessment by the Fifty-seventh Panel

A) Overall Assessment

The importance of this project proposal was acknowledged by the Panel for its aim to ensuring the production of certified seedlings for forest tree species in sufficient quantity with the goal to increase national forest cover through long-term efforts on reforestation and soil conservation in Benin. The unavailability of high-quality forest tree seeds, in particular those of most used species, impedes the forest production increase and activities regarding the forest landscape restoration in Benin. It was recognized that efforts had been made to address most of the comments in the overall assessment, as well as most of the specific recommendations, made by the Fifty-sixth Expert Panel.

However, the Panel noted that there were still a need for improvement for some sections and sub-sections of the revised project proposal dealing with: **(1)** impact indicators of the development objective with confusing percentages of achievement; **(2)** project implementation approaches and methods not clearly describing, in the Section 3.2, how the Output 2 will be achieved through the project implementation; **(3)** in the Section 3.3 (Work plan) and Sub-section 3.4.1 (master budget), 4 outputs are mentioned, in contradiction with the problem tree and solution tree; **(4)** master budget table and related budget by components have taken into account the elements of Output 4 and associated Activities not derived from the problem tree and logical framework matrix; **(5)** elements on gender equality and empowerment of women not specifically referring to the ITTO Environmental and Social Guidelines (PS-23); **(6)** representative of donor missing in the project steering committee; **(7)** Tasks and responsibilities of the project coordinator and key project personnel missing as annexes; **(8)** the CV of the project manager and key project personnel to be paid by the ITTO budget missing as annexes; **(9)** the TORs for consultants and sub-contractors, under the budget item 20 (Subcontracting), are missing as annexes.

B) Specific Recommendations

The proposal should be revised taking into account the overall assessment **and** the following:

1. Improve the impact indicators of the development objective by appropriately adjusting the percentages of achievement.
2. Improve the re-visited Sub-section 1.3.2 and Sub-section 1.3.3 by adding appropriate elements on gender equality and empowerment of women in compliance with the ITTO Environmental and Social Guidelines (PS-23).
3. For ensuring the consistency with the problem analysis and logical framework matrix, delete the Output 4 and associated Activities in the Section 3.3 (Work plan) and Sub-section 3.4.1 (Master budget).
4. Further improve the implementation approaches and methods by clearly describing how the Output 2 will be achieved through the project implementation.
5. Improve the Section 4.1.3 (Project steering committee) by adding the representative of donors in the Project Steering Committee.
6. Add as annexes, the 1-page CV of the project coordinator and key project personnel, as well as a brief description of their tasks and responsibilities,
7. Add as annexes, the TORs following the structure included in the ITTO Manual (page 68, French version) for consultants and sub-contractors mentioned to be paid by ITTO budget item 20 (subcontracting.,
8. Amend the ITTO budget in line with the above overall assessment and specific recommendations, and also in the following way:
 - a) Improve the master budget table by deleting all activities associated to the Output 4, and it should be the source for the readjustment of budgets by component, as required in the ITTO manual for project formulation,
 - b) Recalculate the ITTO Programme Support Costs (sub-item 83) so as to conform with standard rate of **12%** of the total ITTO project costs (on budget items 10 to 82); and

9. Include an Annex that shows the overall assessment and specific recommendations of the 57th Expert Panel and respective modifications in tabular form. Modifications should also be highlighted (**bold and underline**) in the text.

C) Conclusion

Category 1: The Panel concluded that the proposal could be commended to the Committee with incorporation of amendments.

Annex 7. Assessment by the Fifty-seventh Panel and modifications made in the project

Assessment by the Fifty-seventh Panel	Modifications made
B) <u>Overall Assessment</u>	
<p>A) <u>Overall Assessment</u></p> <p>The importance of this project proposal was acknowledged by the Panel for its aim to ensuring the production of certified seedlings for forest tree species in sufficient quantity with the goal to increase national forest cover through long-term efforts on reforestation and soil conservation in Benin. The unavailability of high-quality forest tree seeds, in particular those of most used species, impedes the forest production increase and activities regarding the forest landscape restoration in Benin. It was recognized that efforts had been made to address most of the comments in the overall assessment, as well as most of the specific recommendations, made by the Fifty-sixth Expert Panel.</p> <p>However, the Panel noted that there were still a need for improvement for some sections and sub-sections of the revised project proposal dealing with: (1) impact indicators of the development objective with confusing percentages of achievement; (2) project implementation approaches and methods not clearly describing, in the Section 3.2, how the Output 2 will be achieved through the project implementation; (3) in the Section 3.3 (Work plan) and Sub-section 3.4.1 (master budget), 4 outputs are mentioned, in contradiction with the problem tree and solution tree; (4) master budget table and related budget by components have taken into account the elements of Output 4 and associated Activities not derived from the problem tree and logical framework matrix; (5) elements on gender equality and empowerment of women not specifically referring to the ITTO Environmental and Social Guidelines (PS-23); (6) representative of donor missing in the project steering committee; (7) Tasks and responsibilities of the project coordinator and key project personnel missing as annexes; (8) the CV of the project manager and key project personnel to be paid by the ITTO budget missing as annexes; (9) the TORs for consultants and sub-contractors, under the budget item 20 (Subcontracting), are missing as annexes.</p>	<p>The required changes have been made in the project document (all parts in bold and underlined in the corresponding pages).</p> <p>Output 4 has been deleted as required, and all Output 4 activities have been included under newly created Activity 1.4. ITTO budget was not affected.</p>
B) <u>Specific Recommendations</u>	
1. Improve the impact indicators of the development objective by appropriately adjusting the percentages of achievement.	Page 17
2. Improve the re-visited Sub-section 1.3.2 and Sub-section 1.3.3 by adding appropriate elements on gender equality and empowerment of women in compliance with the ITTO Environmental and Social Guidelines (PS-23).	Pages 6 and 7
3. For ensuring the consistency with the problem analysis and logical framework matrix, delete the Output 4 and associated Activities in the Section 3.3 (Work plan) and Sub-section 3.4.1 (Master budget).	Pages 18; 20; 25
4. Further improve the implementation approaches and methods by clearly describing how the Output 2 will be achieved through the project implementation	Page 19
5. Improve the Section 4.1.3 (Project steering committee) by adding the representative of donors in the Project Steering Committee.	Page 34
6. Add as annexes, the 1-page CV of the project coordinator and key project personnel, as well as a brief description of their tasks and responsibilities,	Pages 40-43
7. Add as annexes, the TORs following the structure included in the ITTO Manual (page 68, French version) for consultants and sub-contractors mentioned to be paid by ITTO budget item 20 (subcontracting.,	Pages 43-45
8. Amend the ITTO budget in line with the above overall assessment and specific recommendations, and also in the following way:	Output 4 has been deleted as required, and all Output 4

<p>a. Improve the master budget table by deleting all activities associated to the Output 4, and it should be the source for the readjustment of budgets by component, as required in the ITTO manual for project formulation,</p> <p>b. Recalculate the ITTO Programme Support Costs (sub-item 83) so as to conform with standard rate of 12% of the total ITTO project costs (on budget items 10 to 82); and</p>	<p>activities have been included under newly created Activity 1.4. ITTO budget was not affected.</p>
<p>9. Include an Annex that shows the overall assessment and specific recommendations of the 57th Expert Panel and respective modifications in tabular form. Modifications should also be highlighted (<u>bold and underline</u>) in the text.</p>	<p>Pages 51-52</p>
<p>C) <u>Conclusion</u></p> <p><u>Category 1:</u> The Panel concluded that the proposal could be commended to the Committee with incorporation of amendments.</p>	