

# Expanding Tree Cover and Carbon Resources through Commercial Tree Crops



## LOCATION SNAPSHOT

### Location & description

The proposed Project will be implemented in the Municipalities of Lautem, Viqueque, Manufahi, Covalima and Baucau.

Through a series of activities which encourage the establishment of commercial tree crops (teak, mahogany, eucalypts, acacia, coconut, cashew, and sandalwood), improvement of related tree product processing industries, and the improvement of rural access and infrastructure, the project will generate livelihood improvements, help reduce poverty, and increase tree cover and saleable carbon stocks.

In addition, it is possible that Municipalities with access to the south coast could be supported a small general-purpose port build at Beacu (port also included in Southern Catchments Fiche)



## 1. PROJECT CONTEXT AND RATIONALE

### 1.1. Sector & Sub-sector(s)

#### Sector: **Forestry Sector**

Forests and planted trees are important parts of the landscape in Timor-Leste. Of the total land area of 1.493 million ha, 59 % (869,000 ha) had forest cover in 2012, including 21.2 % dense forest (313,000 ha with forest cover of 60-70 %), sparse forest (37.7 %: 556,000 ha) and very sparse forest (4.3 %). Over 27 % of the area is covered with grasslands.

Between 2003 and 2012, the area under dense forest decreased by 35.3 % and the area under sparse forest by 2.6 %. There is considerable regional variation in the rates and patterns of degradation and deforestation, varying from up to 30 % decrease in forest cover from 2003 to 2012 in some municipalities to less than 1 % in others. The current national deforestation rate is estimated to be a high 1.3% per annum.

Primary drivers of forest degradation include conversion of forest to agricultural land, uncontrolled grazing, and weaknesses in the institutional arrangements for forest management. Forest loss in the target Municipalities has been largely the result of clearing for subsistence agriculture. Forests remain the largest source of household energy in Timor-Leste with national fuelwood consumption estimated at 500,000 tonnes p.a., worth an estimated US\$174 million/year.

Demand for construction and furniture timbers is expanding as urban centres grow. A substantial proportion of these building timbers are imported informally from neighbouring Indonesia. Global demand for sandalwood remains strong, however Timor-Leste's production base is in decline due to overcutting.

The national coconut resources, part of Timor-Leste's tree cover and an important component of agroforestry systems and trees outside forests, has declined from 35,000 ha in 1975 to an estimated 12,000 ha - at a time when global demand for high quality coconut oil is expanding. Other commercial tree crops such as cashew offer opportunities for increasing household incomes and reducing poverty.

Processing facilities for wood, coconut oil, and nuts remain rudimentary. Improvements are needed to make best use of limited domestic resources, and to create high quality products which can compete in domestic and regional markets.

Timor-Leste's forest harbour important genetic resources of valuable timber species such as *Pterocarpus indicus*, *Toona sureni* and sandalwood (*Santalum album*). The importance of Timor-Leste's biodiversity is demonstrated by the wide international use of the genetic resources of the native *Eucalyptus urophylla*, and emerging interest in native species of *Casuarina* and *Acacia*. Popular exotic species for smallholder and community planting include teak (*Tectona grandis*) and mahogany (*Swietenia mahogani*).

Expanded tree plantings and industries based on planted trees and palms have been restricted because of poor rural access. Rural roads remain an ongoing priority in GOTL's development strategies. The absence of port access on the south coast is a proven barrier to sustainable and profitable development of agricultural and forestry initiatives in the area.

The Asian Development Bank (2020)<sup>1</sup> found that successful forestry investment will be dependent upon some key enablers which include:

1. A supportive forest policy
2. Secure access to land (not necessarily ownership)
3. Access to technical forest management and extension
4. Market transparency and knowledge
5. Developing strong and innovative forest clusters
6. A pro-active and positive regulatory framework
7. Good skills and governance
8. A supportive Government culture
9. Commitment to review, consult and report on progress

The proposed Project activities are consolidated and classified under the following NACE codes with two supporting pre-conditions:

**Proposed pre-conditions:**

F42.11 - Construction of roads and motorways (rural access roads)

F42.91 - Construction of water projects (general-purpose port on the south coast)

**Activities**

A2.10 - Silviculture and other forestry activities (wood and commercial tree crops)

A1.26 - Growing of oleaginous fruits (coconuts)

C16.10 - Sawmilling and planing of wood

## 1.2. Rationale for PPIP intervention and IFI loan

Timor-Leste's commitment to halting forest loss and increasing tree cover will require investments across a range of production, tree product processing, and supporting infrastructure initiatives (plus considerable financial and technical support) if the country is to progress towards the urgent alleviation of rural poverty and improved rural livelihoods.

Opportunities exist to increase national tree cover through the protection and restoration of remnant native forests and planting a range of commercial tree crops for products such as commercial wood, coconut, sandalwood, cashew and fuelwood. Suitable areas of land are available, adapted species grow well, and produce products which can meet market demand for both new industries (sequestered carbon and veneers) and established industries (sawn timber, coconut, cashew, sandalwood and possible wood chips). Regional demand for plantation-grown wood fibre is strongly influenced by an estimated shortage of wood fibre in excess of 10 million cubic metres annually.

In addition, Timor-Leste's commitment to accelerating decarbonization and meeting the U.N. net zero target by 2050 suggests that increased tree cover, carbon trading and carbon credits markets can become an integral part of the nation's future economy. Managing trees for wood production is consistent with the needs of carbon accumulation. Recent research<sup>2</sup> has demonstrated that GHG mitigation from harvested stands typically surpasses unharvested stands, and that commercial

<sup>1</sup> Asian Development Bank (2020). Timor-Leste Forestry Sector Investment Plan 2019 – 2030. TA-9057 REG: Building Sustainable Food and Nutrition Security in Asia and the Pacific (Phase 1) – Timor-Leste Forestry Sector Investment Plan (49305-001)

<sup>2</sup> Eilidh J. Forster, John R. Healey, Caren Dymond & David Styles. 2021. Commercial afforestation can deliver effective climate change mitigation under multiple decarbonisation pathways. NATURE COMMUNICATIONS | (2021) 12:3831 | <https://doi.org/10.1038/s41467-021-24084-x>

afforestation can deliver effective GHG mitigation that is robust to future decarbonisation pathways and wood uses

The PPIP intervention will partner with communities and individual landowners, companies and other organisations and development partners across the country. Tree planting will focus on lands generally less favourable for agriculture.

The intervention will support activities to identify and unblock barriers and bottlenecks within the supply chains for commercial products from planted trees, on the basis that the motivation to grow more trees will be increased through support for efficient and profitable local processing industries which are linked with domestic and international value chains for tree crop products.

At present, Timor Leste does not have a commercial port on the south coast. Domestic freight rates are expensive due the mountainous terrain and the long distance between the Tibar Port and the project area. Therefore, it seems logical to at least investigate the feasibility of investing in a small general-purpose port located at Beacu on the south coast. Construction of this infrastructure would allow export of tree crop related products to Darwin, Tibar and possibly Surabaya in eastern Java

The Government of Timor-Leste, in its **Strategic Development Plan (2011-2030)**, acknowledges that for most people living in rural areas, especially the poor, forests and trees are the sources of food, fuel, fodder, medicines and building materials. It lists forestry as one of five critical agricultural industries (the others being Food Crops, Cash Crops, Livestock and Fisheries). The **Plan** promotes reforestation and sustainable land management practices in Timor-Leste, and support for Community-based nurseries to plant one million trees a year. It commits to support for community-based tree and forest product enterprises that provide local communities with more opportunities to benefit from forest resources, while also giving a greater incentive to sustainably manage and protect these resources. Specifically, the **Plan** calls for development of small-scale and commercial forestry, using suitable commercial species to engage with regional markets and "... *take advantage of Timor-Leste's comparative advantage for high-value tropical hardwoods.*"

The proposal is consistent with the **National Plan to Combat Climate Change** which has aligned national development with SDG 13: "*Take urgent action to combat climate change and its impacts*" and to promote reforestation and sustainable land management practices in Timor-Leste. Similarly, the proposal is consistent with the country's **National Adaptation Programme of Action on Climate Change** (NAPA, 2010) and **First Initial National Communication to UNFCCC** (NC-UNFCCC, 2014) gave priority to building resilience of rural livelihoods to ensure national food security.

Other related policies include the **National Action Program to Combat Land Degradation (2008)**, emphasizing Community-Based Natural Resource Management (CBNRM) as an effective, preventive mitigation program for sustainable land management in the country.

The **Revised National Forest Policy (2017)** has a specific policy objective to produce 50 % of the nation's sawn timber supply from locally grown forest plantations, community forestry and agroforestry programmes by 2050; for building construction, furniture manufacture and other uses of timber. Further, the **Forest Policy** recognises that afforestation of sandalwood, and the establishment of other plantations will "*provide rural employment in the short term and attractive financial returns to rural communities and other investors.*" It notes that well managed plantations and regenerating natural (*Eucalyptus*) forests can produce fuelwood from thinnings and other management operations as well as branches from the final wood harvest.

The Policy notes that that reforestation can "*play a critical role in sustaining the health of the environment by conserving biological diversity, providing low cost, renewable energy (fuelwood) and helping to mitigate climate change*". Among the other primary policy objectives adopted in the **Policy** is a commitment to the "*promotion of participation by local communities and other stakeholders from the private sector in forest management and development*", noting that key in the actions to achieve these objectives is the "*active participation from local communities and other stakeholders*". Further, a policy objective related to institutional development in the forestry sector recognises the need to *enable sustainable and profitable forest management by communities*. The **National Coconut Industry Revitalisation Plan (2018)** encourages expanded planting of coconut and the upgrading of processing industries.

The **Timor-Leste Forestry Sector Investment Plan (2019 – 2030)** considered several commercial models to expand and develop plantation estates, but access to land remains a significant challenge to attracting investors. The Plan concludes that more success may be gained by concentrating on joint ventures with small landowners and community groups, as these are most

### 1.3. Relevance to Strategic Development Plan & overall planning framework

	<p>likely to understand land tenure in their Aldea's (small household clusters). While this model is slow to implement, it is more enduring as the trend across Asia is towards smallholder and community-based commercial forestry programmes. <b>The Plan</b> concluded that in view of the predominant mosaic land use pattern, the customary land tenure claims, the needs for an improved staff capacity and an administrative framework, "community forestry is the main option for implementing the national forest policy in Timor-Leste".</p> <p>The <b>Economic Recovery Plan (2020)</b> recognises that good management of forests is crucial to protecting the environment, biodiversity, water resources, and that the sale of carbon credits can generate much-needed rural income. The 7th Constitutional Government proposed to the National Parliament, which approved it, legislation aimed at boosting <b>forest production</b> (Law No. 14/2017, of 2 August) in steep and mountainous areas of the country.</p>
<p><b>1.4. Relevance to Sustainable Development Goals</b></p>	<p>The project is designed to address a number of the UN Sustainable Development Goals (SDGs) and through increasing tree cover, encouraging sustainable farming systems, improving livelihoods and fostering local processing industries, will realise the SDGs by helping to:</p> <ul style="list-style-type: none"> <li>• reduce poverty and hunger. and promote sustainable farming and land-use</li> <li>• promote decent work, sustainable agricultural communities, and economic growth</li> <li>• take action to combat climate change, manage forests, and reverse land degradation</li> <li>• encourage local, national and global partnerships for sustainable development</li> <li>• empower women and children, and particularly girls, by increasing family income, facilitating children's education, and creating family job prospects</li> </ul> <p>Specifically, the project will address the following 7 SDGs:</p> <ul style="list-style-type: none"> <li>&gt; Goal 1. No Poverty: Access to basic human needs of health, education, sanitation</li> <li>&gt; Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</li> <li>&gt; Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</li> <li>&gt; Goal 15. Life on Land: Reversing man-made deforestation and desertification to sustain all life on earth</li> </ul> <p>(See Section 4.5 for a more detailed description of contributions to achievement of SDGs)</p>
<p><b>1.5. Project promoter(s)</b></p>	<p>The project promoter is the Ministry of Agriculture and Fisheries (MAF), Directorate General of Forestry, Coffee and Industrial Plants (DGFCPI) who will manage the project through:</p> <ul style="list-style-type: none"> <li>• the National Directorate for Community Forestry Development which is the Government agency with prime responsibility for community forestry and commercial forestry development.</li> <li>• the National Directorate for Coffee and Industrial Plants which is responsible for coconut and other commercial tree crops.</li> </ul> <p>Financing: EIB and other partner (s)- to be determined (GoTL/EUD/JICA?)</p>
<p><b>1.6. General institutional set-up</b></p>	<p>MAF is the Government agency with prime responsibility for forestry development. The Directorate General of Forestry, Coffee and Industrial Plants (DGFCPI) is one of four directorates general within the Ministry and has broad responsibilities for community forestry, watershed management, forest protection, plantation forestry, protected natural areas development and other aspects of forestry development. The roles and responsibilities of DGFCIP, its three national directorates, and its municipal offices, are defined in the Ministerial Diploma No.10/2016. The other GoTL ministry which could have a role in project implementation and management is the Ministry of Finance (MoF), particularly if financial incentives are offered to potential commercial tree crop growers. In addition, links with microfinance NGOs, or informal banks, could also be important, depending on final project design</p> <p>It will be important for the Project to work in close cooperation with GoTL's Directorate of Roads, Bridges and Flood Control (DRBFC). This GoTL organization is responsible for the construction and maintenance of rural roads. Rural road development in Timor Leste is supported by two major Development Partners (EU and DFAT with support from ILO). Finally, if a general-purpose port is to be constructed somewhere along the south coast, it will be important that GoTL's Port Authority is involved with site selection, design, tendering, etc. Therefore, liaison and cooperation with all of</p>

these agencies will also be important if road access to areas of tree crops, and local shipping services for tree product transport, are assured.



## 2. INVESTMENT PROJECT INFORMATION

### 2.1. Scope of proposed project and type of investment measures to be implemented

The project concept aims to : (i) engage with local communities to encourage planting of trees of commercial value; (ii) adopt improved land management practices within selected Municipalities; and (iii) foster efficient wood processing industries and profitable processing of other tree crops. In addition, through tree planting and increased tree cover, trees grown with support from the project will sequester additional atmospheric carbon which can generate carbon credits for sale on international carbon markets. The processing industries will receive support in the form of improved and more efficient tools and equipment, and through improved rural access roads and basic port infrastructure to facilitate domestic and regional trade.

There are currently various initiatives in Timor-Leste that have targeted community tree planting with various and diverse objectives. However, the focus of this project will be on trees with direct commercial value – as wood (wide range of products), sandalwood, coconut oil and cashew nuts. The project will have nine components, as follows:

**Commercial Wood, Agroforestry, Trees on Farms, and Block Plantings:** The project will encourage the planting of commercial trees, focusing on smallholders, Trees on Farms and around homesteads, and in small block plantings, Species of interest include acacias, eucalypts, mahogany, and teak. Expected success is based on observations that:

- Commercial trees grow well in many parts of Timor Leste
- There is strong domestic demand – for building construction and furniture manufacture
- There is strong regional demand for veneers, woodchip for pulp and fibreboard
- Degraded forest land and marginal agricultural lands are available for planting to a wide range of commercial trees
- There are operating models elsewhere in SE Asia where growing commercial wood has proven to be very profitable for smallholders<sup>3</sup>, particularly in Vietnam, southern China and Thailand.
- The project will encourage strong private sector links
- Fuelwood will be an important national co-product

**Agroforestry, Trees on Farms:** *Enhanced cultivation and management of Sandalwood.* Sandalwood is a species native to Timor-Leste, and success is likely because:

- There is strong global demand for both the scented wood and sandalwood oil
- Most sandalwood is cultivated on private land
- There is a great deal of information and experience to support expanded sandalwood cultivation including recent work funded by the Australian Centre for International Agricultural research (ACIAR) and the DGFCIP. Prior projects have produced valuable technical manuals
- There is strong cultural support for Sandalwood from rural communities and from the GOTL.

**Agroforestry, Trees on Farms:** *Bamboo + bamboo processing.* Bamboo is native to Timor-Leste and there is an existing small processing industry focused on furniture manufacture. Globally, bamboo is popular - 2.5 billion people depend economically on bamboo and global demand for bamboo products reached ~US\$18 billion in 2018. China accounts for 60% of the global consumption but the USA/ EU are the largest potential export markets for Timor Leste. World-wide, there has been expanded industrial use of bamboo as the raw materials are cheap and plentiful, and technologies are mature and of proven performance. Commercial bamboo processing in Timor Leste is small, focussed on the small domestic market, and based on an existing government business which is very dependent on annual subsidies. Timor Leste is unlikely to be able to compete with

<sup>3</sup> Midgley, S. J., Stevens, P. R. and Arnold R. J. (2017). Hidden Assets: Asia's Smallholder Wood Resources, and their Contribution to Supply Chains of Commercial Wood. Australian Forestry 80 (1). Pp 10-25. <http://dx.doi.org/10.1080/00049158.2017.1280750> .

established global producers such as China, Vietnam and Indonesia, on international export markets.

**Agroforestry, Trees on Farms: Cashew.** There is a strong global demand for cashew nuts and there is a small resource of cashew trees on a few farms in Timor Leste. Although once popular, the area cashew of trees has declined to about 1,200 ha in recent years. A model for small farmer-based cashew production under agroforestry and other farming systems is operational in Vietnam, and could be extrapolated into Timor Leste.

**Agroforestry, Trees on Farms, and Block plantings: Revitalising Coconut Industries.** In Timor Leste, coconut contributes to rural incomes, food security, tree cover and rural timber supplies. Global markets for coconut products are strengthening at a time when the domestic resource has declined to current 12,000 ha due to unreliable markets, fire and pests/diseases. In addition, current domestic productivity is below global norms, and processing is labour intensive and inefficient. This component represents an opportunity to respond to market signals: revitalise production, improve processing and product range and improve markets via the **National Coconut Industry Revitalisation Plan (2018)**. This important activity will build upon GoTL investments in technical training and a commitment to a centre as a focus for coconut-related development.

**Agroforestry, Trees on Farms, Block Plantings: Provision of firewood.** This component embraces all tree planting and processing components, as firewood is a co-product of all wood and nut trees. Firewood is the largest single agricultural product in Timor Leste. Current production is estimated to be 500,000 tonnes per annum, worth an estimated US\$174 million/year. These figures indicate the potential to increase the scope and scale of this very important national co-product.

**Agroforestry, Trees on Farms, and Block Plantings: Carbon Farming.** This component aligns closely with the national objectives for tree planting and climate mitigation. It also aligns strongly with EU and EIB climate objectives. Activities will complement commercial tree production and focus on non-commercial, steep or remote sites which are unsuitable for commercial agriculture or forestry. This component is based on the success enjoyed by WithOneSeed (*Ho Musan Ida* – HMI) which is a community participation programme now supporting commercial carbon farming.

In summary, the effectiveness of various types of support for small holders and community groups to improve land-use and expand areas of commercial trees, regenerate degraded natural forest, and manage forests and plantations sustainably, has been clearly demonstrated in Timor Leste.

Such objectives can be achieved by investing in nurseries, financial and other incentives to adopt improved land management practices and to increase tree cover, new processing equipment and tools, supplemented by simultaneous investments in institutional development, capacity building, technical and managerial training, and public awareness/education.

**The above activities will proceed in parallel with development of supporting infrastructure activities to ensure that forestry projects are effective and cost efficient.**

**Supporting Infrastructure (1): South Coast General Purpose Port.** The south coast of Timor-Leste has high and reliable rainfall, low population densities and excellent prospects for production of commercial wood, coconut and other tree crops. Commercial agricultural/forestry development on the south coast will depend upon supporting infrastructure including a small, general-purpose port to offer access to domestic and regional markets.

**Supporting Infrastructure (2): Rural Roads.** Rural access remains critical for development progress in all sectors. Both agriculture and forestry will benefit from improved rural access roads. The component enjoys strong GoTL and development partner support – Australian Aid has recently committed to an expanded US\$47 million Roads for Development (R4D) program, and the EU has made significant contributions through its Partnership for Sustainable Agroforestry (PSAF) program.

<p><b>2.2. Level of maturity</b></p>	<p>All proposed components have been tested, refined and d and implemented in some form or other over the past 20 years. All of the recommended commercial tree species have demonstrated proven performance, and the proposed processing technologies for wood and for coconut oil are mature. In addition, the project concept has been based on success (since 2009) by WithOneSeed, the recent commitments from the EU for Rai <i>Matak</i> (Green Land Project) and JICA through their program with GCF.</p>
<p><b>2.3. Approach chosen for</b></p>	<p>The proposed Institutional set-up for project implementation is as follows:</p>

<p><b>project implementation</b></p>	<p>PMU (Project Management Unit)</p>	<p>Implementing Agency: Within the DGFCIP, comprising representatives from the Secretary of State for the Environment (SSE), Municipalities, and supported by a Technical Assistance (TA) Consultant</p>				
	<p>TA Consultant:</p>	<p>Institutional Development; Assistance with the development of national commercial tree crop production and processing systems which are supported by improved technical knowledge; technical and progress monitoring; capacity building for GOTL staff and target farmers; and public education. The TA provider will maintain strong links with the JICA and HMI, plus agencies responsible for infrastructure development, e.g., the National Port Authority and DRBFC.</p>				
	<p>Private Contractors</p>	<ul style="list-style-type: none"> <li>• Nurseries and seedling distribution</li> <li>• Roads and port improvement</li> </ul> <p>Works contracts: through contracts with PMU</p>				
<p><b>2.4. Identification of preliminary alternatives for the works</b></p>	<p>There are limited alternatives for the approach to be adopted to engage communities to achieve the objectives of the components listed above, noting that this concept design is predicated on: (i) communities being willing and equipped to participate; (ii) tree species must be adapted to the selected sites; (iii) a network of nurseries will be required to ensure effective distribution of planting material; and (iv) domestic and international markets need to be opened up for a wide range of wood-based and food products.</p> <p>The options analysis to be completed during the next phase will comprise elements such as:</p> <ul style="list-style-type: none"> <li>&gt; Delineation and characterisation of suitable sites for reforestation – degraded areas or deforested areas without tree cover for at least 10 years (and using field surveys, GIS and satellite imagery to demonstrate their additionality) will be prioritised.</li> <li>&gt; Identification and characterisation of affected stakeholders and communities through livelihoods analysis and willingness to participate assessments.</li> <li>&gt; Description of current land use and opportunities to make long-term land use changes which will result in additional carbon being sequestered.</li> <li>&gt; Identification of major contributing factors (and locations) for loss of tree cover – clearing for agriculture, high and ongoing demand for firewood, and demand for wood and tree-based products.</li> <li>&gt; Identification of sites and communities for infrastructure development.</li> <li>&gt; The need for capacity building, and technical and managerial training within Government and the target communities.</li> </ul> <p>Based on a preliminary analysis, a program of effective implementation activities will be developed, which is likely to include:</p> <ul style="list-style-type: none"> <li>&gt; Tree planting on steep and inaccessible lands which will result in increased carbon stocks.</li> <li>&gt; Tree planting of species with commercial value, in addition to fixing carbon.</li> <li>&gt; Protecting remnant forests, and enhancing vegetative cover particularly through reducing the incidence of fires.</li> <li>&gt; Upgrading, repairing and possible relocation of rural roads in target Districts.</li> <li>&gt; Construction of a small, general-purpose port on the south coast.</li> <li>&gt; Enhancing implementation capacity through appropriate institutional development and str, technical and managerial training, and public awareness/education.</li> </ul>					
<p><b>2.5. Total estimated project investment costs</b></p>	<p>The creation of commercial tree resources, effective engagement with communities, and the development of domestic and regional markets is a long-term task, requiring commitment from all stakeholders over an extended period. A <b>first order</b> indication of the investment costs (est. €43.6 mill) over 10 years (2 x 5-year phases) is shown below:</p> <table border="1" data-bbox="432 1877 1460 2027"> <thead> <tr> <th data-bbox="432 1877 1273 1928">Output</th> <th data-bbox="1273 1877 1460 1928">Approx. cost (EUR ,000)</th> </tr> </thead> <tbody> <tr> <td data-bbox="432 1928 1273 2027">Preliminary delineation and characterisation of the affected areas and identification and characterisation of affected stakeholders and communities.</td> <td data-bbox="1273 1928 1460 2027">400</td> </tr> </tbody> </table>		Output	Approx. cost (EUR ,000)	Preliminary delineation and characterisation of the affected areas and identification and characterisation of affected stakeholders and communities.	400
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	Establishment of new nurseries and maintenance of existing facilities and deployment of seedlings	1,600
	Improvement of wood processing and coconut oil processing facilities	8,000
	Rural access roads	6,000
	General purpose port (also in Southern Catchments Fiche)	25,000
	Equipment, Vehicles and materials	600
	TA project: Institutional developments, development of a national system including capacity building and public education/information, technical support	2,000
	<b>Total</b>	<b>43,600</b>
<b>2.6. Approach to finance the project</b>	<p>Considering that the EIB's contribution to a project's cost is limited to 50% of the overall investment, the following possibilities for co-financing have been identified:</p> <ul style="list-style-type: none"> <li>&gt; JICA through additional resources for its JICA/GCF project (technical assistance)</li> <li>&gt; EU through an expanded interest in PSAF (Technical Assistance)</li> <li>&gt; Private Sector – possible links with the south coast-based Bayu-Undan consortium and through their Carbon Capture and Storage (CCS) project with the GOTL.</li> <li>&gt; Other investors (including IFIs) to be identified during the Pre-Feasibility Study (PIIP).</li> </ul>	



## 3. IMPLEMENTATION ARRANGEMENTS

<b>3.1. Provisional schedule for project implementation</b>	<p>The creation of tree-based resources, revitalisation of a dormant industry, and engagement with carbon markets are all long-term tasks which require commitment from all stakeholders for an extended period. A <b>first order</b> indication of the investment costs (est €43.6.0 mill) over 10 years (2 x 5-year stages recommended) is shown above. The construction of rural access roads and a general-purpose port on the south coast can be completed within a 5-year timeframe, and are therefore exceptions to this suggested phasing</p>																		
<b>3.2. Estimated time and resources for PFS and FS</b>	<p>The estimated time and resources required are as follows:</p> <table border="1"> <thead> <tr> <th>Phase</th> <th>Time (months)</th> <th>Level of Effort (person days – KE and Backstopping)</th> <th>Level of Effort (person days – NKEs)</th> </tr> </thead> <tbody> <tr> <td>Pre-Feasibility study</td> <td>10-12</td> <td>70</td> <td>250</td> </tr> <tr> <td>Feasibility study</td> <td>18</td> <td>200</td> <td>800</td> </tr> <tr> <td>Total</td> <td>28-30</td> <td>270</td> <td>1,050</td> </tr> </tbody> </table>			Phase	Time (months)	Level of Effort (person days – KE and Backstopping)	Level of Effort (person days – NKEs)	Pre-Feasibility study	10-12	70	250	Feasibility study	18	200	800	Total	28-30	270	1,050
Phase	Time (months)	Level of Effort (person days – KE and Backstopping)	Level of Effort (person days – NKEs)																
Pre-Feasibility study	10-12	70	250																
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Total	28-30	270	1,050																
<b>3.3. Main barriers to develop the project</b>	<p>The main barriers to develop and implement the project identified at this stage are:</p> <ul style="list-style-type: none"> <li>&gt; Engagement and agreement with GoTL at all levels, particularly agreement on spheres of responsibility between DGFCIP and authorities responsible for roads and ports with co-financing agencies</li> <li>&gt; Coordination of project activities with those of donors, IFIs, NGOs and the private sector</li> <li>&gt; Institutional arrangements between national and municipal authorities and between GOTL agencies.</li> </ul>																		
<b>3.4. Estimation of required TA activities to implement the planned investment</b>	<p>Considerable Technical Assistance will be required for: (i) the development of commercial tree crop and forest production and processing systems which are supported by improved technical knowledge; (ii) technical and progress monitoring; (iii) capacity building for GOTL staff and target farmers; and (vi) public education. In addition, there will need to be support for: (i) the division of responsibilities between National, regional, and municipal entities; (ii) changed/improved land tenure; (iii) tendering and contracting of access road, local infrastructure repairs and port design and construction; and (vi) marketing of a wide range of commercial tree crop products into domestic and international markets.</p>																		





## 4. SAFEGUARDS AND ELIGIBILITY

<p><b>4.1. Environmental and Social issues, recommended ESIA needs</b></p>	<p>A screening of environmental and social aspects will be performed at the pre-feasibility stage; the environmental and social safeguards that may become relevant are listed below:</p> <table border="1" data-bbox="430 403 1460 694"> <tr> <td>Assessment and management of environmental and social impacts and risks, including roads and a port</td> <td>Y</td> <td>Involuntary resettlement</td> <td>N</td> </tr> <tr> <td>Pollution prevention and abatement</td> <td>Y</td> <td>Rights and interests of vulnerable groups</td> <td>N</td> </tr> <tr> <td>Biodiversity and ecosystems</td> <td>Y</td> <td>Labour standards</td> <td>Y</td> </tr> <tr> <td>Climate-related standards</td> <td>Y</td> <td>Occupational and public health, safety and security</td> <td>Y</td> </tr> <tr> <td>Cultural heritage</td> <td>N</td> <td>Stakeholder engagement</td> <td>Y</td> </tr> </table>	Assessment and management of environmental and social impacts and risks, including roads and a port	Y	Involuntary resettlement	N	Pollution prevention and abatement	Y	Rights and interests of vulnerable groups	N	Biodiversity and ecosystems	Y	Labour standards	Y	Climate-related standards	Y	Occupational and public health, safety and security	Y	Cultural heritage	N	Stakeholder engagement	Y
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<p><b>4.2. Eligibility: Alignment with Paris Agreement</b></p>	<p>The proposed investment falls within the following sector(s) supported by the EIB Group under the Paris alignment framework:</p> <ul style="list-style-type: none"> <li>&gt; Investment in subsectors such as sustainable forestry and sustainable, resilient agricultural land management, and erosion control (LULUCF).</li> </ul> <p><i>As the EU Climate Bank, the EIB Group commits to aligning all its financing activities with the principles and goals of the Paris Agreement. Investments proposed to EIB should be consistent with the Paris alignment framework to adopt low-carbon pathways in support of the European Union (EU) pathway to net zero emissions. Investments should also build greater resilience to future climate change.</i></p> <p>This proposed concept addresses these climate-related issues through creating a positive carbon balance generated by incremental tree planting, improved forest management and enhanced vegetative cover. Through adopting changes to agricultural practices and adoption of sustainable agricultural and tree planting practices to minimise soil loss and in line with conservation farming, the project will ensure resilience to future climate change.</p>																				
<p><b>4.3. Eligibility: Alignment with EU Taxonomy</b></p>	<p>A summary of the technical screening criteria for “substantial contribution” and “do-no-significant-harm” (DNSH) in relation to the six environmental objectives of the EU Taxonomy is shown below.</p> <p>The current technical screening criteria on climate mitigation focuses on 1.1 afforestation; 1.2 rehabilitation and restoration of forests, including reforestation and natural forest regeneration after an extreme event; 1.3 forest management; and 1.4 conservation forestry. In addition, the agriculture sector is not included in the first Delegated Act. Thus, only limited activities/ project components will be aligned with the EU Taxonomy, despite the obvious benefits of tree planting and increased tree cover.</p> <p>The following project activities are/will be aligned with the EU Taxonomy:</p> <table border="1" data-bbox="430 1478 1460 2072"> <thead> <tr> <th>Environmental objective</th> <th>Afforestation: Activity NACE A02.10 Silviculture and other forestry activities related to trees for commercial wood, coconut and commercial tree crops</th> </tr> </thead> <tbody> <tr> <td>Climate change mitigation</td> <td> <p>Substantial Contribution:</p> <ol style="list-style-type: none"> <li>1. Afforestation plan and subsequent forest management plan or equivalent instrument</li> <li>2. Climate benefit analysis</li> <li>3. Guarantee of permanence</li> <li>4. Audit</li> <li>5. Group assessment</li> </ol> <p><i>Note: Meeting the requirements for afforestation and forest management plans in a smallholder context will be administratively burdensome and time consuming for all concerned, especially for smaller forest holdings, agroforestry systems and Trees on Farms.</i></p> </td> </tr> <tr> <td>Climate change adaptation</td> <td>DNSH: Climate risk and vulnerability assessment performed. The PPIP anticipates this for the PFS and FS stages.</td> </tr> <tr> <td>Water and marine resources</td> <td>DNSH: Environmental degradation risks related to preserving water quality and avoiding water stress are identified and addressed with the aim of achieving good water status and good ecological potential (EU Water Framework Directive), and a water use and protection management plan is developed for the potentially affected water bodies</td> </tr> </tbody> </table>	Environmental objective	Afforestation: Activity NACE A02.10 Silviculture and other forestry activities related to trees for commercial wood, coconut and commercial tree crops	Climate change mitigation	<p>Substantial Contribution:</p> <ol style="list-style-type: none"> <li>1. Afforestation plan and subsequent forest management plan or equivalent instrument</li> <li>2. Climate benefit analysis</li> <li>3. Guarantee of permanence</li> <li>4. Audit</li> <li>5. Group assessment</li> </ol> <p><i>Note: Meeting the requirements for afforestation and forest management plans in a smallholder context will be administratively burdensome and time consuming for all concerned, especially for smaller forest holdings, agroforestry systems and Trees on Farms.</i></p>	Climate change adaptation	DNSH: Climate risk and vulnerability assessment performed. The PPIP anticipates this for the PFS and FS stages.	Water and marine resources	DNSH: Environmental degradation risks related to preserving water quality and avoiding water stress are identified and addressed with the aim of achieving good water status and good ecological potential (EU Water Framework Directive), and a water use and protection management plan is developed for the potentially affected water bodies												
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		in consultation with relevant stakeholders. However, no assessment is needed if such risks are considered in an EIA in accordance with the EU EIA Directive and Water Framework Directive.
	Circular economy	NA
	Pollution prevention & control	DNSH: The use of pesticides is reduced and alternative approaches or techniques used; the activity minimises the use of fertilisers and does not use manure. Well documented and verifiable measures are taken to avoid the use of active ingredients that are listed in Annex I, part A, of Regulation (EU) 2019/1021. Pollution of water and soil is prevented and cleaning up measures are undertaken when pollution occurs.
	Biodiversity and ecosystems	DNSH: In areas designated by the national competent authority for conservation or in habitats that are protected, the activity is in accordance with the conservation objectives for those areas. <u>The project proposes no activities in protected areas.</u> There is no conversion of habitats specifically sensitive to biodiversity loss or with high conservation value, or of areas set aside for the restoration of such habitats in accordance with national law.
	Activity A1.26 - Growing of oleaginous fruits (including coconuts) may be covered under Crop Production in the second Delegated Act of, but it is still in draft form.	
<b>4.4. Eligibility: Clean Oceans Initiative</b>	N/A	

#### 4.5 Relevant Sustainable Development Goals (SDGs) and indicators

Goals and targets	Indicators
<b>Goal 1. No Poverty: Access to basic human needs of health, education, sanitation</b>	
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day.	1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)
The project will provide: <ul style="list-style-type: none"> <li>Enhanced opportunity for livelihoods improvement through increased incomes from commercial trees crops</li> <li>Increased resilience to extreme events due to more diversified income sources (from tree crops)</li> <li>Opportunities for both men and women to improve livelihoods</li> </ul>	
<b>Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</b>	
8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	8.2.1 Annual growth rate of real GDP per employed person
8.6 By 2020, substantially reduce the proportion of youth not in employment, education or training	8.6.1 Proportion of youth (aged 15–24 years) not in education, employment or training
The Project will provide: <ul style="list-style-type: none"> <li>Improved on-farm productivity (and production) from diversified tree crops</li> <li>Improved labour efficiency for tree product processing</li> <li>Value adding for tree crop products such as sawn logs, and processed oil and nuts</li> <li>Opportunities for on-farm and off-farm employment</li> <li>Opportunities to upskill to meet new industry needs</li> </ul>	
<b>Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</b>	
9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	9.1.1 Proportion of the rural population who live within 2 km of an all-season road 9.1.2 Passenger and freight volumes, by mode of transport
9.3 Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets	9.3.1 Proportion of small-scale industries in total industry value added 9.3.2 Proportion of small-scale industries with a loan or line of credit
The Project will provide: <ul style="list-style-type: none"> <li>A general-purpose port on the south coast which will cut transport costs and increase efficiency</li> <li>Improved and more rural access roads to increase marketing efficiency and reduce transport costs</li> <li>Facilitate investment in commercial agriculture, and in forestry and industry engagement with local communities</li> </ul>	

<b>Goal 15. Life on Land: Reversing man-made deforestation and desertification to sustain all life on earth</b>	
15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	15.1.1 Forest area as a proportion of total land area
15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.	15.2.1 Progress towards sustainable forest management
15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation neutral world	15.3.1 Proportion of land that is degraded over total land area
<p>The project will provide:</p> <ul style="list-style-type: none"> <li>• Enhanced forest cover through tree planting and restoration of forest areas</li> <li>• Improved soil conservation through increased tree cover</li> </ul>	