

## **GROWTH STRATEGY DOCUMENT**

### **COCONUT SUB-SECTOR IN EAST NUSA TENGGARA (NTT)**

**JUNE 2015**

**OXFAM**



BEING UPDATED

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## 1. Executive summary

Coconut can be processed into a wide range of products, including virgin coconut oil, coconut water, desiccated coconut, coconut flour, nata de coco, coconut active carbon, coir and coir based product and coconut sugar. **Global demand for fresh coconut and desiccated coconut has been increasing consistently in last decade. However, demand for copra, copra cake, coconut copra oil (CCO) has decreased.**

**Indonesia is one of the major exporting countries of fresh coconut, desiccated coconut, copra, copra cake, and coconut copra oil (CCO). Despite the fall in global demand for copra, Indonesia's supply was stable, mainly because of price competitiveness.** With an increased industrial use, domestic demand for Copra in Indonesia has increased. There is an increasing demand for virgin coconut oil (VCO) as well. Production of fresh coconut remained stable (between 3.0 and 3.3 million metric ton) over the last decade in Indonesia

**NTT supplies around 2% of the total national production of fresh coconut, with potential to improve production and productivity further.** Majority of coconut farmers live in 6 districts - Malaka, Kupang, East Flores, Ende, Nagekeo and Sikka (110,000 or more than 45 % of total coconut farmers). Moreover, those 6 districts have more than 79 % (71,000 Ha) of the total plantation of coconut trees in NTT. Fresh coconut, copra and VCO are the dominant coconut products in the 6 major coconut districts of NTT. Of the 110,000 coconut farmers (House Holds), 78,000 are in Flores and the rest are in Timor Island. Around 32,000 HHs are involved in copra production, 23,500 of which are in Flores. There are about 3,300 VCO producers (HHs), 2,350 of which are in Flores. There is on-farm as well as off farm copra production in NTT. In Flores all copra farmers make copra individually. While in Timor, there are different practices. Farmers produce copra in Belu; where as in Kupang district, village collectors buy fresh coconut from farmers and then make them into copra.

**NTT is the third poorest province in Indonesia.** Copra and VCO are more profitable products than fresh coconuts. Generally VCO is a home-based industry, largely dominated by women entrepreneurs, while there are strong involvement of women in copra production as well.

**The overarching problem (or rather the “symptoms”) faced by the coconut, copra and VCO farmers in NTT are the declining productivity of coconut, low quality of copra and low quality and inadequate production of VCO.** This leads to reduced income from coconut and its products. Productivity of coconut trees is decreasing, particularly in Sikka and Nagekeo because of old trees. High yield coconut seedling is produced and supplied by specific nurseries for government rejuvenation project. Farmers do not get better quality of seedlings regularly. Farmers often produce seedlings by themselves. Farmers rarely use of fertiliser and apply better practices in coconut production. Rejuvenation is not a common practice among farmers. Low quality of copra in NTT is due to applying old technology and low provision of information on better technologies. On-farm and off-farm copra producers operate on sub-optimal capacity as they do not have enough capital for expanding their production. Limited interest in, and access to, financial services worsens the problem. Current VCO production is not significant enough to attract industrial buyers, though there is potential for expansion.

**Public extension service lack incentive to provide information on coconut, copra and VCO. No private sector is providing relevant information on rejuvenation of coconut and quality standards of copra.** Provincial traders have weak capacity and knowledge on improving existing drying techniques of copra. Financial Institutions are not motivated to invest in developing this market segment. They do not understand the need of copra and VCO

markets. **Limited number of aggregators and buyers of VCO and absence of tools and technology results in stagnant growth in VCO production in NTT.**

**The vision of the coconut sub-sector in NTT is to increase the income of coconut farmers by strengthening the diversified use of fresh coconut in better quality copra production and increased VCO production.** To achieve this vision, 2 outcomes need to take place through changes in the service markets - Improved availability of knowledge, tools / technology, market linkages and financial services for VCO and copra producers, and improved availability of high-yield coconut seedling for farmers

To address the constraints and underlying causes, and unlock the potential of the cashew sub-sector in NTT for benefiting the poor farmers, by improving the service markets in the support functions, following interventions are proposed.

1. To build capacity of Inter-island traders and develop a model for providing information on quality standard and drying technique to copra makers and farmers in Flores and Timor Islands.
2. To support Industrial users of VCO to develop a sourcing model from VCO producers in Flores.
3. To support tool producers to make appropriate tools and technology available to small scale VCO producers in Flores.
4. To support Financial Institutions to develop appropriate credit disbursement model targeting Copra production in Timor & Flores island.
5. To support financial institutions to develop and offer appropriate financial product and business management knowledge to VCO producers for expanding production.
6. To support capacity building of seedling producers in promoting usage of certified seedling and systematic management of rejuvenation plan among coconut farmers (women and men) in Sikka and Nagekeo districts.

## 2. Background

The Australia-Indonesia Partnership for Promoting Rural Income through Support for Markets in Agriculture (AIP-PRISMA) is a multi-year program that is a part of the Government of Indonesia's midterm development strategy to accelerate poverty reduction through inclusive economic growth. With the support from the Government of Australia, the program aims to achieve a 30% increase in the net incomes of 300,000 male and female smallholder farmers in eastern Indonesia by June 2017. AIP-PRISMA works in East Java, West Nusa Tenggara (NTB), East Nusa Tenggara (NTT), Papua, and West Papua.

This Sub-Sector Growth Strategy Document aims to provide a logic and rationale for market-based interventions which can support the coconut sector to the benefit of smallholder farmers in NTT Province.

## 3. Sector description

### 3.1 Sector profile

The sector profile provides information on the current status and potential of the target sector. This has been derived mainly from secondary data and literature relevant to the sector.

#### 3.1.1 Overall context (International and national)

Coconut can be processed into a wide range of products, including virgin coconut oil, coconut water, desiccated coconut, coconut flour, nata de coco, coconut active carbon, coir and coir based product and coconut sugar.<sup>1</sup> **Global demand for fresh coconut and desiccated coconut has been increasing consistently in last decade. However, demand for copra, copra cake, coconut copra oil (CCO) has decreased.**

**Indonesia is one of the major exporting countries of fresh coconut, desiccated coconut, copra, copra cake, and coconut copra oil (CCO).** Indonesia is a major exporter of fresh coconuts and copra while for desiccated coconut, copra cake and coconut copra oil, Indonesia is the second largest exporters after the Philippines. **Despite the fall in global demand for copra, Indonesia's supply was stable, mainly because of price competitiveness.**<sup>2</sup>

**With an increased industrial use, domestic demand for Copra in Indonesia has increased. There is an increasing demand for virgin coconut oil (VCO) as well. Production of fresh coconut remained stable (between 3.0 and 3.3 million metric ton) over the last decade in Indonesia.** It is estimated that almost 60% of the national production is consumed in the form of fresh coconuts, while the remaining 40% is consumed by the coconut-industries. Of around 1.25 million ton coconut that is consumed by the industry, 80% is processed into copra and crude coconut oil or CCO, while the remaining (20%) is processed into desiccated coconut, coconut milk and cream by the industries<sup>3</sup>. Moreover, industrial buyers for VCO is promisingly increasing. They need copra and VCO as raw material. VCO is further processed into soap, shampoo etc. VCO is also exported besides being sold to domestic consumers without further processing.

#### 3.1.2 Local context

**NTT supplies around 2% of the total national production of fresh coconut, with potential to improve production and productivity further.** In 2013, NTT produced about 67,000 ton of fresh coconut while total national production in the same year was 3.65 million ton. In terms of productivity, NTT shows slight increase from 1,057 kg/Ha in 2010 to 1,073 kg/Ha in 2014 (0.19 % increase). At the national level productivity decreased slightly; from 1,159 kg/Ha to 1,128 kg/Ha during the same period.<sup>4</sup> However, productivity can increase further in NTT.

<sup>1</sup> Market and trade coconut product. APCC. 2013

<sup>2</sup> FAO stat, 2013

<sup>3</sup> Samuel Lodowik Paskah, An analysis of Indonesia's export competitiveness in coconuts, 2009

<sup>4</sup> [http : //aplikasi.deptan.go.id/bdsp/newlok.asp](http://aplikasi.deptan.go.id/bdsp/newlok.asp)

According to data of NTT Agricultural agency (2012) about 16% of coconut trees in NTT are unproductive. The biggest percentage of senile trees are in Alor, Manggarai & Sumba West Sumba Districts.

**Fresh coconut, copra and VCO are the dominant coconut products in the 6 districts of NTT.** Majority of coconut farmers live in 6 districts - Malaka, Kupang, East Flores, Ende, Nagekeo and Sikka (110,000 or more than 45 % of total coconut farmers). Moreover, those 6 districts have more than 79 % (71,000 Ha) of the total plantation of coconut trees in NTT.

Fresh coconut is the dominant commodity, sold by small holder farmers, in Timor Island, where as copra is dominant in Flores and in some parts of the Timor. Small holder farmers sell their fresh coconut to village collectors or in the local markets. On the other hand, copra is sold either to village collectors or directly to inter-island traders. Then it goes to processing companies via agents in Surabaya. VCO is sold both to local markets and to traders in Yogyakarta.

**Around 30% of coconut farmers produce copra and 3% produce VCO in Malaka, Kupang, East Flores, Ende, Nagekeo and Sikka districts.** Of the 110,000 coconut farmers (House Holds), 78,000 are in Flores and the rest are in Timor Island. Around 32,000 HHs are involved in copra production, 23,500 of which are in Flores. There are about 3,300 VCO producers (HHs), 2,350 of which are in Flores. **Generally VCO is a home-based industry, largely dominated by women entrepreneurs, while there are strong involvement of women in copra production as well.**

**Copra and VCO are more profitable products than fresh coconuts.** Farmers get IDR 800 to IDR 1,000 for one coconut. If they sell copra, they get IDR 5,000-6,000 /kg and can make more profit than selling fresh coconut. Moreover, farmers can make use of the coconut water for their livestock and coconut shell for producing charcoal. If farmers sell VCO, they can get IDR 25,000-35,000/litre with maximum potential margin of 40 %. Price of fresh coconut increases with increased demand for VCO and copra.

**NTT is the third poorest province in Indonesia.** Majority of farmers involved in coconut, copra and VCO production are poor. Table 1 shows household income by selling coconut, copra and VCO in the six major districts<sup>5</sup>.

Table 1: income from coconut, copra and VCO

District	HH Income (IDR) by selling		
	Fresh coconut	Copra	VCO
Belu (Malaka)	184,742.03	242,473.92	461,855.08
Flores Timur	176,092.27	231,121.11	440,230.68
Ende	162,234.10	212,932.25	405,585.24
Sikka	76,397.46	100,271.67	190,993.65
Kupang	101,637.36	133,399.03	254,093.40
Nagekeo	68,114.03	89,399.66	170,285.07

<sup>5</sup> The data is based on the number of coconut trees that farmers have and the price of fresh coconut, VCO and copra

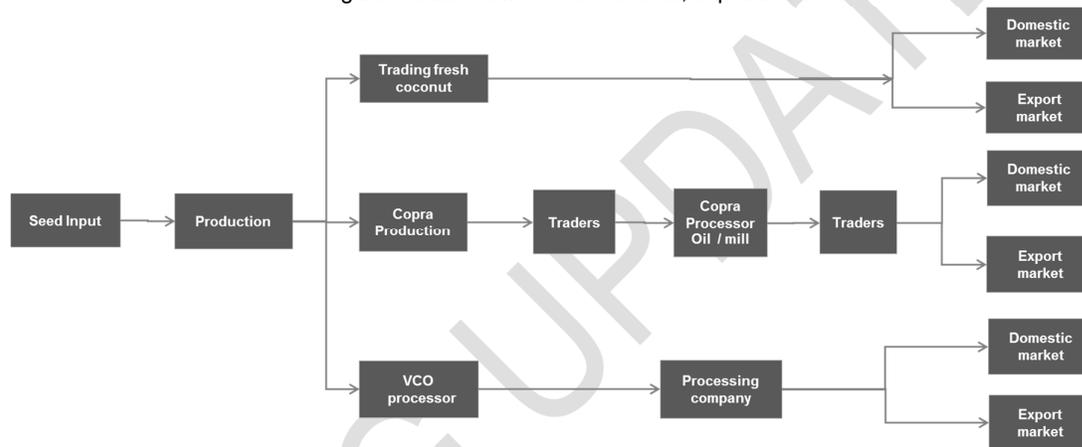
## 3.2 Sector dynamics

### 3.2.1 Market overview

As mentioned earlier, fresh coconut is the dominant product in Indonesia and in NTT. More profitable is copra production. Besides on-farm copra production by the farmers, there are off-farm copra production in larger scale. The off-farm copra producers buy fresh coconut from the farmers and often work as coconut collectors. VCO production in NTT is on-farm, predominantly by women.

Figure below depicts the basic flow of the three commodities: fresh coconut, copra and VCO. Next section shows detail market map of the three products.

Figure 1: basic flow of fresh coconut, copra and VCO

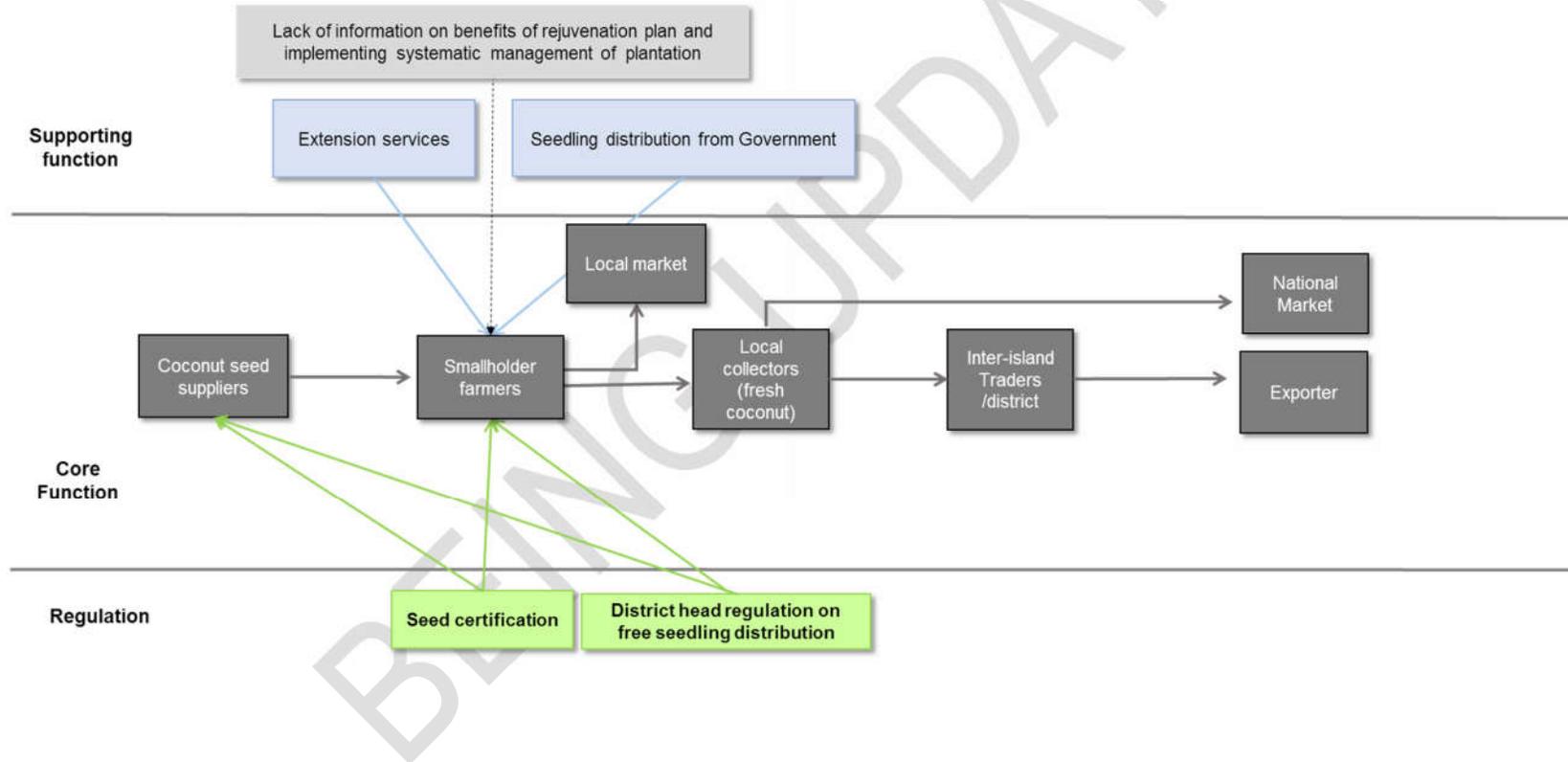


**3.2.2 Sector map**

Figures below show the market maps of fresh coconut, copra and virgin coconut oil (VCO)

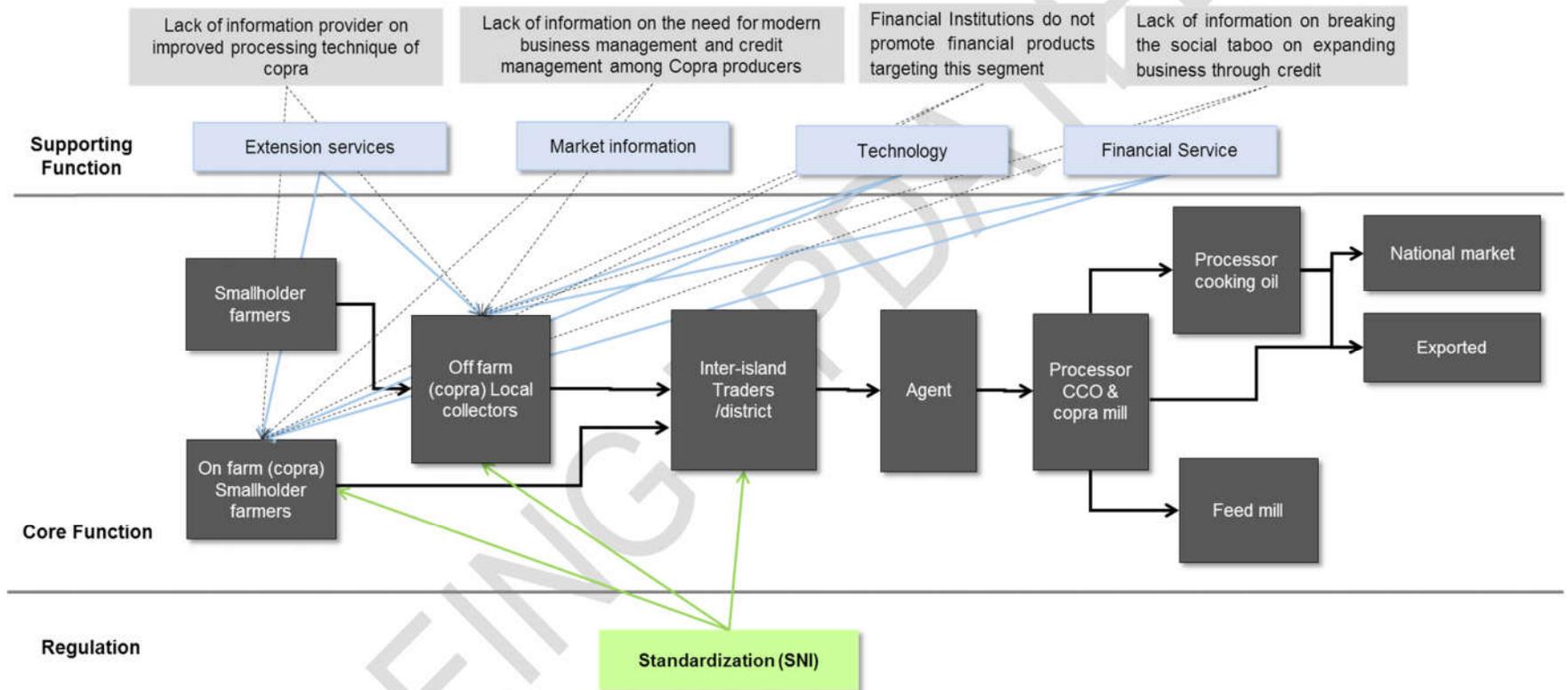
**Fresh Coconut**

Figure 2: market map - fresh coconut



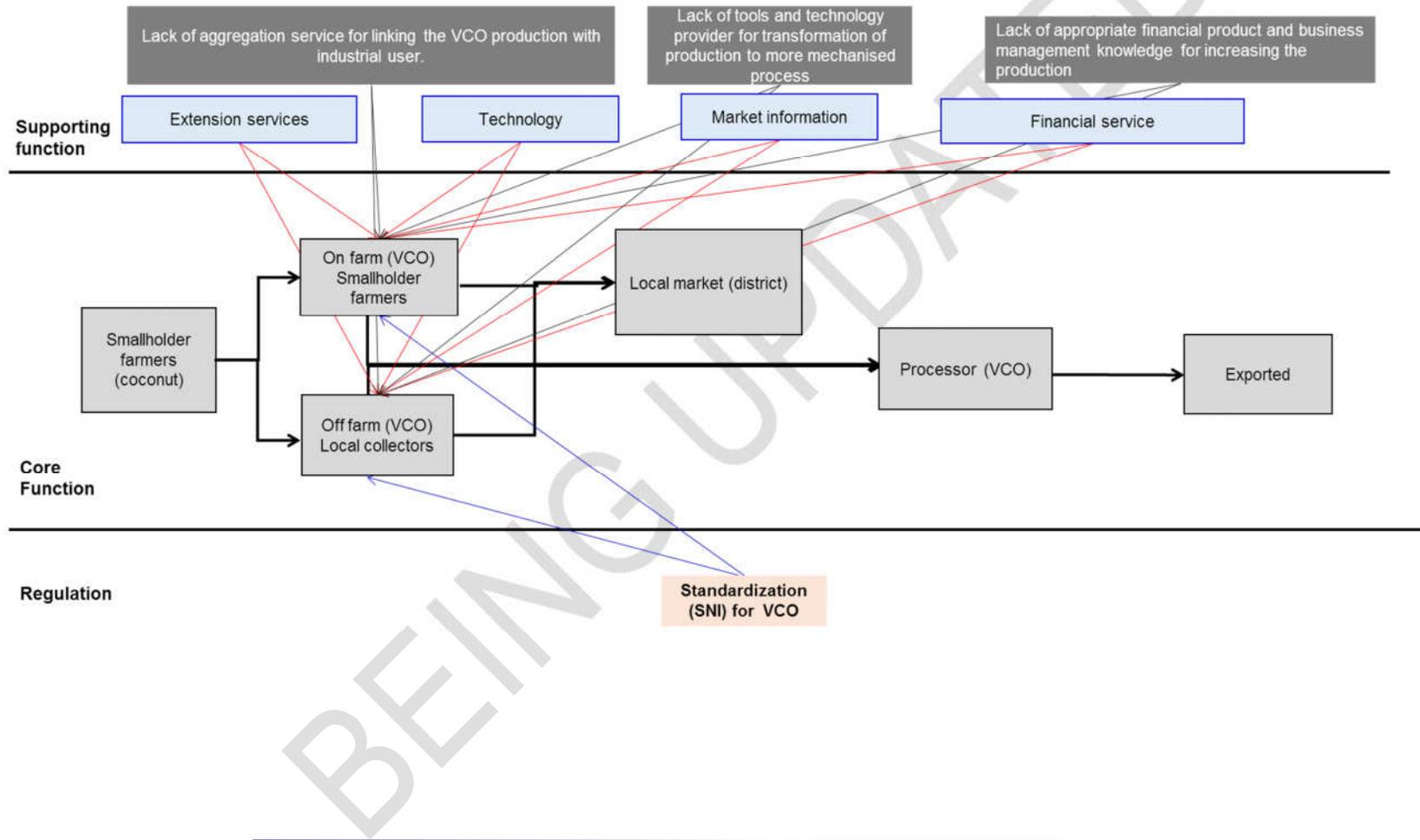
**COPRA**

Figure 3: Market Map – Copra



**VCO**

Figure 4: Market map – VCO



### 3.2.3 Core Function

#### Input (seedling of coconut)

**High yield coconut seedling is produced and supplied by specific nurseries for government rejuvenation project.** There are 3 and 6 coconut nurseries in Nagekeo and Sikka respectively. They have capacity to produce 50,000 to 70,000 coconut seedling per year. Nurseries produce seedling regularly, only produce at their maximum capacity if there is government project on coconut rejuvenation. The nurseries produce seedling from the trees and coconuts in the “high yield block” (Block penghasil tinggi) that have been certified by Coconut Research and Development Centre in Manado, South Sulawesi, through series of years observation. **Farmers do not get better quality of seedlings regularly. Farmers often produce seedlings by themselves.**

#### Production

**Farmers rarely use of fertiliser and apply better practices in coconut production.** They focus on other crops and let coconut grow naturally. In some areas the trees are very old or unproductive. **Rejuvenation is not a common practice among farmers.** Some time they do not plant new seedling after felling trees.

**There is on-farm as well as off farm copra production in NTT.** Different actors produce copra in Flores and Timor Islands. **In Flores all copra farmers make copra individually.** While in Timor, there are different practices. Farmers produce copra in Belu; where as **in Kupang district, village collectors buy fresh coconut from farmers and then make them into copra. VCO is produced, mostly by women, on-farm.**

#### Trade

Coconut farmers sell coconut directly in the local markets, or to collectors of fresh-coconuts in general, and also to copra producers (in Kupang). Local collectors sell fresh coconut directly to buyers in Surabaya or to inter-island traders who then sell that to exporters in Surabaya.

**Farmers in Kupang prefer selling coconut to copra producers, despite receiving the same price they would have got in the market, as it reduces their transportation cost. Copra farmers in the other islands sell copra to village collectors.** In some places inter-island traders come to village to buy copra directly from the farmers. Traders buy directly from farmers if farmers can sell minimum quantity requested by traders. VCO production and trade is still very low in NTT, mostly produced and consumed with the small local market. There is no active aggregation point which can collect VCO from VCO producers to market it to processing companies. There is however potential to increase VCO production and export to other islands.

**There are a handful of agents who buy copra from inter-island traders and then sell to processing companies. Inter-island traders do not directly supply to the processing companies.** Agents meet the requirements and standards requested by the processing companies. Some of them also make sure that the price offered by the processing companies is profitable for the inter-island traders. Processing companies prefer to deal with limited number of suppliers (agents) than with several inter-island traders.

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**VCO produced in NTT is sold mainly in the local markets.** The VCO farmers market their VCO using local networks, local government supports, and through local exhibitions. Amount of VCO produced by individual farmers' groups (women) is very low. **There is no effective aggregation service to gather the amounts interesting for the processing companies in other islands. If any processing company buy VCO from NTT, they further process that and then export refined VCO to other countries.**

#### Processing

**There are no processing companies in NTT buying copra and VCO.** All processing companies which use copra and VCO as their raw material are in Java. There are 8 potential processing companies, namely UD Surya, CV Alam Subur, PT Sinar MAs Permai, PT Ivoy, PT Global Trinity, PT Tunas Baru Lampung while for VCO there are two potential partners namely, Green Coconut Island and Tropicana Nucifera Industry.

Copra is then processed into CCO and copra mill which are used as raw material for producing cooking oil and feed mill. Cooking oil is traded in the domestic markets besides export. **Processing companies set the copra prices according to the price in international market.** The price of copra is set by commodity index in Rotterdam and New York. After the price is set, exporters share the price to processing companies and it goes along the chain to the inter-island traders, collectors, and finally to farmers. Price of copra from Sumatra and Kalimantan is cheaper than that of NTT because lower quality.

#### 3.2.4 Supporting Functions / Services

**Limited extension service is provided to coconut farmers by the government extension agency.** According to the head of extension service in NTT, there are 2,854 villages while there are only 2,560 extension workers. Ideally, each village should have one extension worker as regulated by Law 16, year 2006 on agricultural extension system.<sup>6</sup> Extension service workers lack innovation and capacity to assist coconut farmers. They cannot manage to provide all the farmers with even the information about the government programmes. For example, replanting/rejuvenation programme is not known by most of the farmers. Neither do they know of the standards for quality of copra or knowledge of making other derivative products in most of the cases. **Other market actors also do not provide extension services to the coconut farmers in NTT.**

**Copra-farmers who make copra in Sikka, Ende, and East Flores districts do not make use of the existing financial services for their business of making copra.** If they borrow money from financial institutions, they would use it for consumption purposes. In Malaka district copra makers do not borrow money from financial institutions even for consumption purposes. There is common perception among farmers that borrowing from the bank is difficult and a matter of shame for farmers.

<sup>6</sup> <http://www.nttonlinenow.com/berita-ntt/daratan-timor/2504-provinsi-ntt-kekurangan-294-penyuluh-pertanian>

**Different from small holder farmers, village collector and traders access financial services for coconut business either from the banks or cooperatives or credit unions.**

But there is inter-island traders in Kupang who buy copra using own capital. In Kupang, there are village collectors who borrow from local money lenders with higher interest rate because borrowing from bank takes time while the collectors need money immediately for buying fresh coconut to make them into copra.

**The technologies of making copra are inherited from generations to generation. There are two types of drying methods applied in NTT, namely - smoked-drying and sun-drying. The technology of drying is very traditional and no complex inputs and tools are applied.** Currently, there is increased demand for better-dried copra both from processing companies in Surabaya and from the inter-island traders. If the quality of copra is low, Inter island traders would further dry the copra before selling it to the processors. The VCO producers (women groups) got the skill and equipment from the government after attending training on how to make VCO both individually and in groups. But VCO producers do not maintain quality standard that is required by VCO processors. Coconut farmers do not use any modern technology for growing coconuts.

**Market information for coconut farmers and VCO and copra producers is limited.** The coconut farmers get price information only from collectors and inter island traders. There is no opportunity for them to intently seek information of where the market is, the price, and the other potential buyers.

As explained earlier, copra producers are price-takers as price is set by processing companies in Surabaya and passed to the Inter island traders in Timor and Kupang island, and then to the copra collectors. With only one VCO processing company in Jogjakarta interested in VCO from NTT, the price of VCO is actually determined by that processing company.

**Distribution of seedling is subsidised and limited. No commercial production and distribution of seedling is in place.** Government buy the coconut seedling from the high yielding blocks and then distribute those to coconut farmers for free. Government replanting/rejuvenation programme has very low success so far.

### 3.2.5 Supporting Rules and Regulations

**There is no specific policy support at provincial or district for coconut in East Nusa Tenggara.** Ende, Sikka and east Flores and Malaka governments state that coconut sub sector is priority crop. However, this statement is not supported by regulation and government budget. Government gives priority to field-crops.

Each year either provincial government or District government distributes free seedlings to farmers. **Free Seedling distribution/ district regulation requires farmers' groups to get themselves listed and make a proposal request in order to receive free seedlings from government.** The seedlings are bought by government from the nurseries in specific high-yielding areas.

**Quality standards for copra is not fully followed by farmers and village collectors.**

According to Indonesia National Standard (Standar Nasional Indonesia or SNI) on copra, there are 3 grades for copra (A, B, and C grade)<sup>7</sup>. Based on observation, most of the copra sold in NTT fall in either B or C (lower quality than A) category. This leads to lower price for both local collectors and farmers. On the other hand, inter-island traders buy any quality of copra sold to them and dry the copra to reach the moisture level demanded by the processing companies to acquire the minimum quantity needed to ship copra to Surabaya. There is assumption among local collectors and farmers that whatever quality they sell they will always get the same price. Similar to copra, VCO does not meet the required standards demanded by processing companies. The majority of VCO is sold at small local market.

**Standard operational procedure on coconut seed and its certification** have objective to ensure the quality of coconut seed<sup>8</sup>. Certified coconut seedling must be produced from the high yield block that have been identified by the Coconut Research and Development Centre in Manado, South Sulawesi trough years of observation.

## 4. Analysis

The intervention logic analysis framework (ILAF) table (Annex 1) summarises the problems, underlying causes, and the weaknesses in the support functions and the rules/ regulations. This section analyses that more elaborately.

### 4.1 Problems in the Core Function and underlying causes

#### 4.1.1 Problems and their underlying causes faced by farmers

The overarching problem (or rather the “symptoms”) faced by the coconut, copra and VCO farmers in NTT are the declining productivity of coconut, low quality of copra and low quality and inadequate production of VCO. This leads to reduced income from coconut and its products. The specific problems faced by farmers and their underlying causes are summarised below.

- Productivity of coconut trees is decreasing, particularly in Sikka and Nagekeo because of old trees and slow rejuvenation.
- Low quality of copra in NTT because of applying old technology and low provision of information on better technologies
- On-farm copra producers operate on sub-optimal capacity as they do not have enough capital for expanding their production. Limited interest in, and access to, financial services worsens the problem.
- Current VCO production is not significant enough to attract industrial buyers, though there is potential for expansion.

<sup>7</sup> SNI 01-3946-1995. Quality standard for copra

<sup>8</sup> PERATURAN MENTERI PERTANIAN NOMOR 93/Permentan/OT.140/9/2013

**The declining productivity of coconut trees, particularly in Sikka and Nagekeo, is caused by the increased percentage of old trees.** On the other hand, the rejuvenation process is very slow. The problem persists as farmers are not aware of the benefits of maintaining a proper rejuvenation plan for their coconut plantation. Lack of information provision on benefits of rejuvenation and implementing a systematic management of plantation, and limited supply of good quality seedlings are root causes of low productivity.

**Copra producers usually use traditional methods of drying and producing copra. Farmers lack knowledge on quality standard, drying and other processing techniques.** They use the knowledge they inherited from their family. No or limited information provision on improved processing technique of copra by the market actors and the government extension services underlies the problems of low quality.

**On-farm Copra producers are operating at sub-optimum capacity in Timor and Flores Islands.** On-farm copra producers do not have enough capital to expand their production and are reluctant to borrow from informal money-lenders. The copra producers also have limited access to formal financial services. Financial Institutions do not promote financial products targeting this segment.

**Current VCO production is not significant enough to attract industrial buyers, though there is potential for expansion.** VCO producers do not have access to credit and knowledge on business management to expand the production. They also do not have knowledge on industrial quality requirements. Industrial users are not aware of the potential of Flores for VCO production. Limited provision of financial products and business management knowledge for increasing the production and lack of tools and technology providers for transformation of production to more mechanised process, and lack of aggregation services for linking the VCO production with industrial users are the underlying causes leading to inability of VCO producers to produce more quantity with quality required by industrial buyers.

#### **4.1.2 Problems and underlying causes faced by other actors and their impact on farmers**

There are problems and underlying causes faced by the other market actors as well, that eventually also affect the on-farm copra and VCO producers. Two key problems faced by the market actors are summarised below –

- On-farm copra producers operate on sub-optimal capacity as they do not have enough capital for expanding their production. Limited interest in, and access to, financial services worsens the problem. Coconut farmers are often indirectly affected by this as they cannot sell all their coconut to the copra producers and bear additional transportation cost to sell coconuts in the markets.
- VCO processors do not get enough VCO in NTT to start sourcing from NTT regularly. As there is no consistent demand, VCO producers also produce at suboptimal capacity as the local market cannot absorb much.

**Like the on-farm copra producers, despite producing at a larger scale than the on-farm producers, off-farm copra producers do not operate at an optimal capacity, particularly in Kupang.** They often have the capacity and assets to secure loans from the banks and other financial institutions, but are reluctant to avail that. Financial institutions also do not have targeted products for the off-farm copra producers. Sometimes the copra producers take loan from local money lenders at a higher interest rate when they need cash in quick time. As the copra producers do not expand their production, they often have to return coconut farmers without buying their coconuts. Coconut farmers indirectly affected by this as they cannot sell all their coconut to the copra producers and bear additional transportation cost to sell coconuts in the markets.

**VCO processors do not get enough VCO in NTT to start sourcing from NTT regularly. As there is no consistent demand, VCO producers also produce at suboptimal capacity as the local market cannot absorb much.** This vicious circle is not broken as the processors are not investing time and resources to develop the VCO production in NTT. Absence of aggregation services also do not create a critical mass to attract the processors regularly. This makes VCO producers producing at a sub-optimal level and not making the best of their potential.

#### 4.2 Weaknesses in services and rules / regulations

Key weaknesses in services and rules/ regulations (also mentioned in the ILAF table - annex 1) are elaborated in this section and are also summarised in the box below.

- De-prioritisation of the product by public extension service and lack of incentive for public extension service providers to provide information on coconut, copra and VCO.
- No private sector in providing relevant information on rejuvenation of coconut and quality standards of copra.
- Weak capacity and knowledge of provincial traders on improving existing drying techniques of copra.
- Financial Institutions are not motivated to invest in developing this market segment. They do not understand the need of copra and VCO markets.
- Limited number of aggregators and buyers of VCO. Absence of private sector providing tools and technology

**Provincial and district governments focus on food sub sector (tanaman pangan) instead of estate crops.** At province level, maize is prioritized as a sub sector, although at district level there is specific regulations supporting the coconut sub sector. No major incentive for public extension service officers is there for them to focus on coconut and its products. Extension service officers do not provide proper assistance to farmers in meeting quality standards for copra. **They also lack capacity and resources to provide information for a diverse set of sectors.**

**No private sector service provider is providing relevant information to coconut and copra and VCO producers.** Benefits of rejuvenation plan and implementing systematic

management of plantation is not provided by the nurseries as they lack commercial interest and rely only on government programmes for their business in coconut seedlings. **Weak capacity and knowledge of provincial traders on improving existing drying techniques also affect the quality of copra at the producers' level.**

**Financial Institutions (FIs) do not understand the need of coconut product market segment and are not motivated to invest in developing this market segment.** FIs do not have specific products for coconut sub – sector and mainly serve farmers for non-productive needs. Because of limited exposure to this sub sector, they don't have understanding of this market segment. In addition, because of low understanding for this sub-sector, they are also reluctant to invest to develop service for this segment. Similar to copra, financial institutions have limited exposure to VCO products and are reluctant to provide appropriate financial products for increasing the VCO production

There are aggregators who usually collect VCO from VCO producers, some of which focus on local markets. The ones who focus on local market are not able to collect VCO from all VCO producers because they are not able to sell it. In addition, **the small number of aggregators who are interested in selling VCO to industrial buyers also have limited access to other industrial buyers.**

VCO producers depend on tools and technology from government provided after attending the trainings conducted by government. But because of low demand of VCO, they are not eager to purchase other tools to expand production and meet the quality required. Because of lack of demand, there is no private sector which are willing to provide tools and technology.

### **4.3 Cross cutting issues (gender and environment)**

For fresh coconut men take responsibility for planting, harvesting and selling the coconut to local market. But if village collectors buy at villages, women sell the fresh coconut. Almost similar to fresh coconut, men and women are involved in producing copra. Men take role especially for activities which needs physical works such cleaving coconut and drying coconut meat. However, if there are no men, women take this role. Women sell copra to village collectors but men will sell the copra to inter-island market. Different from the two above, women are involved in producing VCO because there is tools used so make their work easier. Both women and men sell the VCO products to market.

Copra and coconut wastes are used to other activities like cooking and producing charcoals. Waste of VCO is used for feeding livestock.<sup>9</sup>

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<sup>9</sup> More insights into gender and environment issues in coconut sub-sector will be included in the next iteration

## 5. Strategy for Change

### 5.1 Market potential

Following tables attempt to calculate the market potential of coconut, copra and VCO should the respective intervention areas can address the relevant constraints and underlying causes.

Table below calculates market potential for providing information on quality standard and drying technique to copra makers and farmers: provided we can leverage Inter-island traders with feasible business models

Table 2: market potential calculation - 1

Description/Years	Total Business in the target area (s)		
	Total	Up to 2016	Up to 2018
Average Selling Price/kg	5,250	5,750	6,500
Current Value of Production (million IDR)	7,156,934	276,839	502,057
Total value of potential production (million IDR)	7,531,996	835,756	1,133,876
Total value of potential production (AUD)	753,199,566	83,575,615	113,387,586
Total potential value of increased production (million IDR)	375,062	558,917	631,819
Total potential value of increased production (AUD)	37,506,179	55,891,691	63,181,911
Market share due to program		8%	9%

Table below calculates market potential for developing a sourcing model - from VCO producers in Flores to the Industrial users of VCO, making appropriate tools and technology available to small scale VCO producers, provided we can leverage the industrial users and tool producers with feasible business models.

Table 3: market potential calculation - 2

Description/Years	Total Business in the target area (s)		
	Total	Up to 2016	Up to 2018
Average Selling Price/kg	19,000	25,000	35,000
Current Value of Production (million IDR)	2,713,468	2,690,509	5,947,442
Total value of potential production (million IDR)	4,070,834	5,120,583	9,349,544
Total value of potential production (AUD)	407,083,436	512,058,275	934,954,440
Total potential value of increased production (million IDR)	1,357,366	2,430,074	3,402,103
Total potential value of increased production (AUD)	135,736,646	243,007,350	340,210,290
Market share due to program		90%	125%

Table below calculates market potential for developing appropriate credit disbursement models targeting copra production in Timor & Flores islands, provided we can leverage financial Institutions with feasible business models

Table 4: market potential calculation - 3

Description/Years	Total Business in the target area (s)		
	Total	Up to 2016	Up to 2018
Average Selling Price/kg	5,250	5,750	6,500
Current Value of Production (million IDR)	7,156,396,406	148,050,317	586,290,291
Total value of potential production (million IDR)	7,531,430,025	729,714,959	1,263,771,272
Total value of potential production (AUD)	753,143,002,500	72,971,495,875	126,377,127,159
Total potential value of increased production (million IDR)	375,033,619	581,664,642	677,480,981
Total potential value of increased production (AUD)	37,503,361,875	58,166,464,156	67,748,098,073
Market share due to program		<b>8%</b>	<b>9%</b>

Table below calculates market potential for developing appropriate financial products and providing business management knowledge to VCO producers for expanding their production, provided we can leverage financial Institutions with feasible business models

Table 5: market potential calculation - 4

Description/Years	Total Business in the target area (s)		
	Total	Up to 2016	Up to 2018
Average Selling Price/kg	5,250	5,750	6,500
Current Value of Production (million IDR)	749,774	66,619	2,019,942
Total value of potential production (million IDR)	1,124,836	625,536	2,651,761
Total value of potential production (AUD)	112,483,581	62,553,597	265,176,077
Total potential value of increased production (million IDR)	375,062	558,917	631,819
Total potential value of increased production (AUD)	37,506,179	55,891,691	63,181,911
Market share due to program		<b>75%</b>	<b>84%</b>

Table below calculates market potential for developing capacity of seedling producers in promoting usage of certified seedling and systematic management of rejuvenation plan among coconut farmers (women and men) in Sikka and Nagekeo districts, provided

Table 6: market potential calculation - 5

Description/Years	Total Business in the target area (s)		
	Total	Up to 2016	Up to 2018
Average Selling Price/kg	17,500	22,500	22,500
Current Value of Production (million IDR)	5,074,228	2,780,622	6,488,118
Total value of potential production (million IDR)	6,324,434	4,967,688	8,675,184
Total value of potential production (AUD)	632,443,420	496,768,815	867,518,415
Total potential value of increased production (million IDR)	1,250,206	2,187,066	2,187,066
Total potential value of increased production (AUD)	125,020,595	218,706,615	218,706,615
Market share due to program		<b>43%</b>	<b>43%</b>

## 5.2 Vision of change

To increase the income of coconut farmers by strengthening the diversified use of fresh coconut in better quality copra production and increased VCO production

To achieve this vision, 2 outcomes need to take place through changes in the service markets

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1. Improved availability of knowledge, tools / technology, market linkages and financial services for VCO and copra producers.
2. Improved availability of high-yield coconut seedling for farmers

## 5.3 Interventions

To unlock the potential of the cashew sub-sector in NTT for benefiting the poor farmers, by improving the service markets in the support functions, following interventions are proposed.

1. To build capacity of Inter-island traders and develop a model for providing information on quality standard and drying technique to copra makers and farmers in Flores and Timor Islands.
2. To support Industrial users of VCO to develop a sourcing model from VCO producers in Flores.
3. To support tool producers to make appropriate tools and technology available to small scale VCO producers in Flores.
4. To support Financial Institutions to develop appropriate credit disbursement model targeting Copra production in Timor & Flores island
5. To support financial institutions to develop and offer appropriate financial product and business management knowledge to VCO producers for expanding production.
6. To support capacity building of seedling producers in promoting usage of certified seedling and systematic management of rejuvenation plan among coconut farmers (women and men) in Sikka and Nagekeo districts.

**Intervention 1: To build capacity of Inter-island traders and develop a model for providing information on quality standard and drying technique to copra makers and farmers in Flores and Timor Islands.** Improving knowledge and technique of copra producers of quality standards (in terms of moisture content) will enable copra producers to increase quality of copra and earn more. Under this intervention inter-island traders will train copra collectors who then become advisors to copra producers. The incentive for the traders is that they will get high quality of copra and better price. Because women take the main responsibility of selling copra to collectors the role of women will evidently increase.

**Intervention 2: To support Industrial users of VCO to develop a sourcing model from VCO producers in Flores.** This intervention will facilitate the aggregation of VCO produced by VCO producers for reaching the minimum quantity required by industrial buyers. Industrial buyers will develop and train VCO aggregator on quality standards which then is disseminate to VCO producers. There will be a critical mass of VCO through aggregation for industrial buyers with required quality while VCO producers will have the certainty of market for VCO they produce with certain price.

**Intervention 3: To support tool producers to make appropriate tools and technology available to small scale VCO producers in Flores.** This intervention is closely related to second intervention as this intervention supports VCO producers to produce VCO in better quality as required by industrial buyers. Industrial buyers will train VCO aggregator on tools so that they can advise VCO producers how to use tools and ensure quality of VCO. As VCO producers will have certain demand of VCO, they will need tools so that they can expand their production. VCO aggregators and producers will get higher income as the volume increase.

**Intervention 4: To support Financial Institutions (FIs) to develop appropriate credit disbursement model targeting Copra production in Timor & Flores islands.** This intervention will help copra producers to get more coconuts and increase their copra production and income. Under this intervention the financial institutions will be linked to inter-

island traders. The copra collectors will get fund from inter-island traders, to buy more coconuts for the copra producers. They will also be trained on quality standards that they can disseminate to the copra producers. Copra producers will produce more and better quality copra with additional coconuts and information. Inter-island traders will ensure the purchasing of copra by issuing the purchase order, and as agreed with FIs, Inter-island traders will pay back instalments to the FIs.

**Intervention 5: To support financial institutions to develop and offer appropriate financial product and business management knowledge to VCO producers for expanding production.** Under this intervention financial institutes will give loans to the aggregators of VCO. The aggregators will buy coconut from farmers and give it to VCO producers. By having more coconut, they will be able to produce more VCO to the aggregator. Price of the fresh coconut will be deducted when they sell VCO to the aggregators. VCO aggregators will ensure the purchasing of VCO by issuing the purchase order, and as agreed with FI, VCO aggregators will pay back instalments to the FIs.

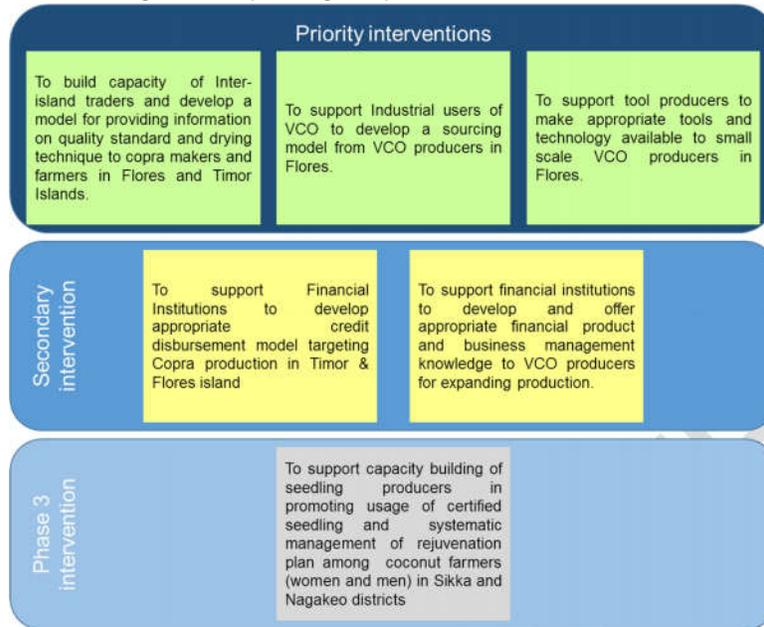
**Intervention 6: To support capacity building of seedling producers in promoting usage of certified seedling and systematic management of rejuvenation plan among coconut farmers (women and men) in Sikka and Nagekeo districts.** This intervention will try to commercialise the seedling supply to the farmers. Copra or VCO collectors, under this intervention, will also work as an intermediary between the nurseries and the farmers. To get more coconuts for increased production of VCO and copra, the collectors will create the link between the nurseries and farmers by distributing the seedlings to the farmers. The intervention will increase the availability of high yielding seedlings that will enable coconut farmers to rejuvenate their coconut trees and increase the future production and income. The incentive for copra/ VCO collectors is that they get additional income as they get profit by selling coconut seedling. Nurseries also can expand their business as the demand for coconut trees expand

## 5.4 Sequencing and prioritization of interventions

Three interventions, related to increased quality of copra by information on quality standard and drying technique to copra makers and farmers, the sourcing model with the industrial VCO users from VCO producers in Flores and to the availability of tools and technology for better VCO production are designed, are designed for the first phase of intervention.

It is expected that the production quality copra and VCO and demand for that will increase because of the first three interventions. To respond to the increased demand, the need for additional capital will emerge. Two interventions related to the financial institution will be implanted at that stage. With all those interventions, increased demand for fresh coconut will set the stage for the sixth intervention: capacity building of seedling producers and distributing high yielding seedling among coconut farmers (women and men) in Sikka and Nagekeo by the copra/ VCO collectors. Figure 5 shows the sequencing and prioritization of interventions.

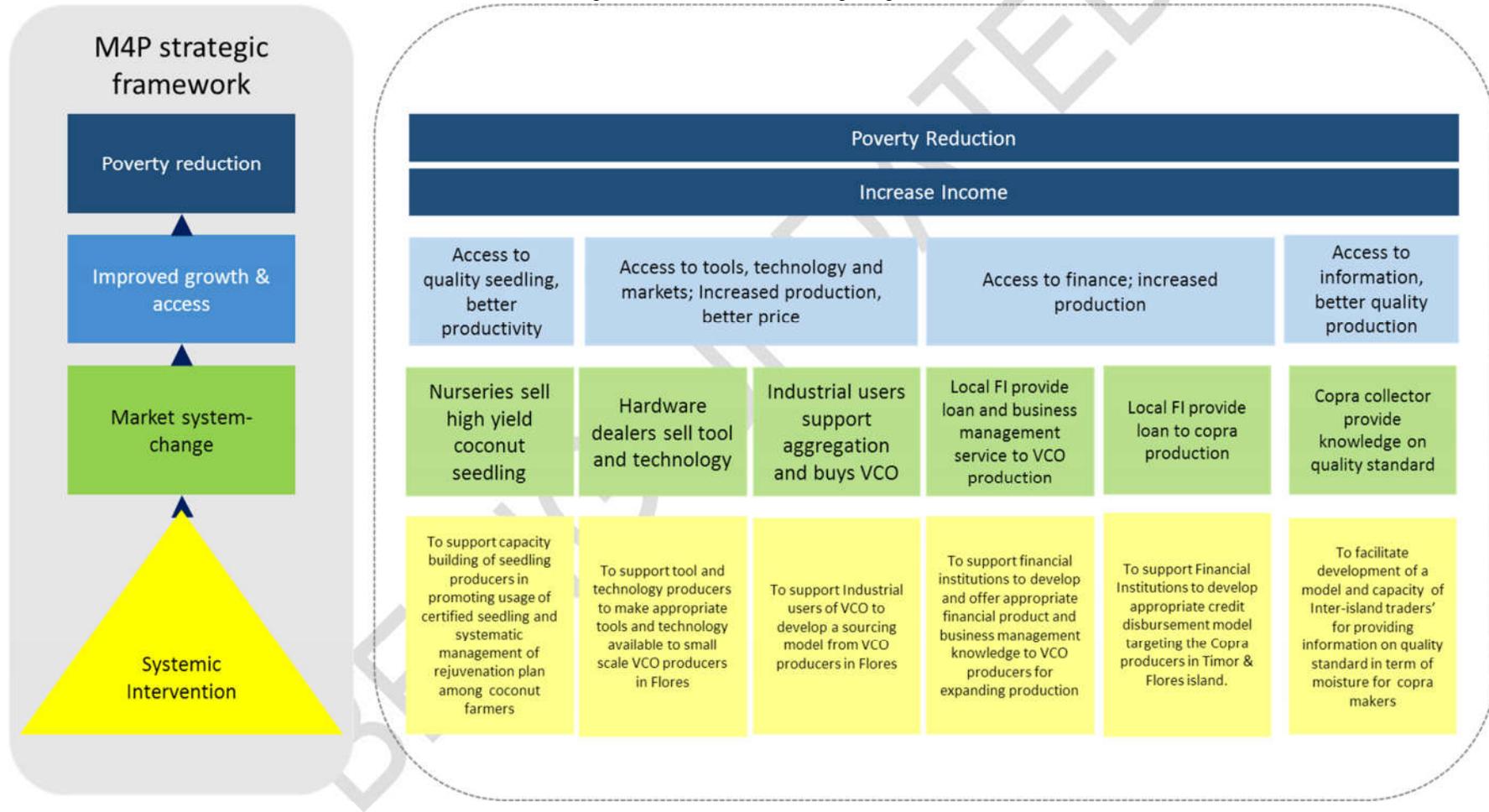
Figure 5: Sequencing and prioritization of interventions



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### 5.5 Sector Vision of Change Logic

Figure 6: Sector Vision of Change Logic



## Annex 1: Intervention Logic Analysis Framework (ILAF)

(1) Problem/ Symptom	(2) Underlying cause	(3) (4) Supporting function / rules	(5) Weaknesses	Intervention name	Service Providers/ Partners
<p>(1) <b>Problem :</b> Productivity of coconut trees is decreasing in Sikka and Nagekeo <b>Why:</b> Coconut trees are old and rejuvenation is very slow</p> <ul style="list-style-type: none"> <li>• Farmers are not aware of the benefits of maintaining a proper rejuvenation plan for their coconut plantation</li> </ul>	Lack of information on benefits of rejuvenation plan and implementing systematic management of plantation	Information and Knowledge	<p>De-prioritisation of the product by public extension service and lack of incentive for public extension service provider</p> <p>No private sector in providing relevant information.</p>	To support capacity building of seedling producers in promoting usage of certified seedling and systematic management of rejuvenation plan among coconut farmers (women and men) in Sikka and Nagekeo districts	Local nursery : Framsiskus Lae, Brono, Daniel.
<p>(2) <b>Problem:</b> Lower quality of copra produced in NTT <b>Why :</b> Traditional method of drying and producing copra</p> <ul style="list-style-type: none"> <li>• Farmers lack knowledge on quality standard, drying and other processing techniques.</li> </ul>	Lack of information provider on improved processing technique of copra	Information and Knowledge regarding production and processing.	<p>Non-existent public or private service provider</p> <p>Weak capacity and knowledge of provincial traders on improving existing drying techniques</p>	To facilitate development of a model and capacity of Inter-island traders' for providing information on quality standard and drying technique to copra makers and farmers (f/m) in Flores and Timor Islands .	Inter-Island Traders : : UD Bintang Laut Timur, UD Paris Indah (Malaka). UD Fajar; Ikun (Sikka)
<p>(3) <b>Problem:</b> On-farm Copra producers are operating at sub-</p>	<ul style="list-style-type: none"> <li>• Lack of information on the need for modern business</li> </ul>	Financial service	FI are not motivated to invest in developing this market segment	To support Financial Institutions to develop appropriate credit	Financial Institution : BRI, Bank NTT, Komdit Swastisari,

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(1) Problem/ Symptom	(2) Underlying cause	(3) (4) Supporting function / rules	(5) Weaknesses	Intervention name	Service Providers/ Partners
<p>optimum capacity in Timor and Flores Island</p> <p><b>Why:</b> The off-farm copra producers do not have enough capital to expand their production</p> <ul style="list-style-type: none"> <li>• Copra producers are reluctant to borrow from informal moneylenders</li> <li>• The copra producers have limited access to formal financial services</li> </ul>	<p>management and credit management among Copra producers</p> <ul style="list-style-type: none"> <li>• Financial Institutions do not promote financial products targeting this segment</li> <li>• Lack of information on breaking the social taboo on expanding business through credit</li> </ul>		<p>FIs do not understand the need of this market segment</p>	<p>disbursement model targeting Copra production in Timor &amp; Flores island</p>	<p>Flores Mandiri.</p>

(1) Problem/ Symptom	(2) Underlying cause	(3) (4) Supporting function / rules	(5) Weaknesses	Intervention name	Service Providers/ Partners
<p><b>(4) Problem:</b> Current VCO production is not significant enough to attract industrial buyers, though there is potential for expansion</p> <p><b>Why:</b> VCO producers are unable to produce the volume</p> <ul style="list-style-type: none"> <li>• VCO makers does not have access to credit and knowledge on business management to expand the production</li> <li>• The VCO producers do not have knowledge on industrial quality requirement</li> <li>• Industrial users are not aware of the potential of Flores for VCO production</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of aggregation service for linking the VCO production with industrial user</li> <li>• Lack of appropriate financial product and business management knowledge for increasing the production</li> <li>• Lack of tools and technology provider for transformation of production to more mechanised process</li> </ul>	Finance, Knowledge and Information Aggregation Tools, Knowledge and Information	Lack of knowledge of FI on business opportunities of VCO  Limited number of private sectors who aggregates VCO  Absence of private sector providing tools and technology	<ul style="list-style-type: none"> <li>• To support financial institutions to develop and offer appropriate financial product and business management knowledge to VCO producers for expanding production</li> <li>• To support Industrial users of VCO to develop a sourcing model from VCO producers in Flores</li> <li>• To support tool and technology producers to make appropriate tools and technology available to small scale VCO producers in Flores</li> </ul>	Industrial User of VCO : The Green Coconut Island, Tropicana Nucifera Industry, Kiara Cosmetic. Financial Institutions BRI, Bank NTT, Kpdit Swastisari, CU Flores Mandiri Industrial tools and Machinery producers : : The Green Coconut Island, Tropicana Nucifera Industry, Kiara Cosmetic.

## Annex 2: Identified market actors

There are groups of market actor that will support copra makers in Malaka and Sikka Districts.

1. In Timor Island there are 2 inter-land traders that will be potentially involved in intervention, namely UD Bintang Laut Timur (Bp. Tanel & Abelino HP 081249999772 & 081246309598), Toko Paris (Esther; 0389-21781), in Malaka District while in Sikka District the potential ones are UD Fajar and Ikun. These inter-island traders are trading copra to Surabaya and buying from copra makers or collectors. Further potential collaboration with inter-island traders are still needed to be identified
2. There are many potential collectors that could be involved both in Malaka and Sikka districts. However, the name of the potential collector will be further identified.

## Annex 3: People Interviewed

### Government

1. Charles Pania Kaban Penyuluhan Pertanian, Perikanan perkebunan
2. Gabriel Koordinato Penyuluh Kabupaten
3. Charles Amekan Kadis perindustrian dan Perdagangan
4. Hafiz Bank Indonesia
5. Johanis vincentius Roma (Kepala BP3K kec. Nita)
6. Hengki B. Sali (Kepala Dinas pertanian dan Perkebunan
7. G.K. De Manda staff Distanbun
8. Mustakim, Bendahara Penerimaan kantor Kesyahbandaran dan otoritas pelabuhan L. Say maumere
9. Hamzah Sekretaris Dinas Ketahanan Pangan dan penyuluh Pertanian Florest Timur.
10. Yan sadi Dinas Pertanian dan perkebunan Flotim.
11. Evi Nange, SH..HP..kantor Penanaman modal dan pelayan terpadu satu atap
12. Martin dan danil W. Klakik kantor UPP klas III larantuka
13. Kletus Kepala Bp3k Kec. Nengapanda
14. Fidelis Bofa, Kabid perkebunan, Dishutbun Ende
15. Tony Basuki, M.Si : Peneliti dari Badan Penelitian dan Pengembangan Pertanian
16. Agustinus Klau - Kasi Pertanian (Bibit, Pupuk & Hama) Kab. Malaka
17. Laurens Dinas Pertanian Kab. Malaka
18. Yakob Ngongobili: Kabid. Perkebunan Kab. Belu.
19. Fernandus, Kabag Perekonomian Pemkab Sikka
20. Tay Renggi, Dinas Perkebunan Provinsi NTT
21. Yohanna, Bgn PHP, Dinas Perkebunan Provinsi NTT
22. David, Bgn PHP, Dinas Perkebunan Provinsi NTT
23. Jimmy, Bgn PHP, Dinas Perkebunan Provinsi NTT

24. Johnny, kasubbag perencanaan KP3 NTT, Kupang,
25. Agustine, Kabid Perkebunan, Kab Kupang
26. Kletus Kepala Bp3k Kec. Nengapanda
27. Fidelis Bofa Kabid perkebunan, Dishutbun Ende

**Traders**

1. Abdul Haid UD DK
2. Erlan UD Makmur)
3. Ludvina Lince UD Sakura (bp. Konsalis Madium.
4. Alexander Rusli
5. Gina Gudang UD Kelapa
6. Muharram, Renovita Adonara Barat
7. Yoim UD Usaha Bersama. Wolowaru, Ende
8. Reinya, UD Kawi Jaya
9. Roys, UD fajar
10. Muhsir Toko Mulia Jaya
11. Jarius Mansura, Toko Gajah Mada, Atambua
12. Esther Pemilik Toko Paris Indah di Belu, Atambua
13. Angelita Luruk Pedagang kelapa di pasara Baru Atambua
14. Oktovina Bui Pedagang kelapa di pasaran Belu, Atambua
15. Tanel & Abelino UD Bintang Laut Timur, Atapupu (Belu)
16. Robby, Kupang, NTT
17. Dody, Kupang, NTT
18. Reinya, UD Kawi Jaya.
19. Roys, UD fajar,

**Village collectors**

1. Hironimus, di desa Webriamati, Kec. Wewiku
2. Charles, Pedagang pengumpul Kabupaten
3. Pardi & Winarsih, Pedagang pengumpul Kabupaten
4. Ismail Sulong Desa Uring Belle ,Kec. Witihama

**Bank**

1. Boy Nunuhitu, Head Group Mikro, Bank NTT
2. Wira, staff Bgn Mikro Bank NTT

**Processor**

1. Anthoni, Surabaya

**Trader & Copra Supplier**

1. M. Rizal, Makassar, Sulawesi

**Farmers**

1. Matinus Tubo/ Ibu Bernadetta Pire, Uring Belle, kec Titihama,
2. Jeremias Doni Petun,
3. Andreas
4. Ferdinan Horinara, kec. Klubagolit

5. peka (perempuan kelapa keluarga) klp pengrajin minyak Goreng dan kelompok Gelekat Lewo (VCO), desa Horinara, kec. Klubagolit
6. Marselus, Petani di desa Kletek, Kec. Malaka Tengah
7. Kris Leto, Petani di desa Rainawe, Kec. Kobalima
8. Andreas, petani kelapa di Ndorurea
9. Silvester Surirayon : Pemilik perkebunan Kelapa & Mete, di desa Lakeku, Kec. Kobalima Induk
10. Elisabeth Seu, Pengolah minyak kelapa, di desa Rabasa, Kec. Malaka Barat
11. Yuliana laruk, Pengolah kopra di desa Weowe, Kec. Wewiku
12. Markus, Pasar Inpres Oeba, Kupang
13. Edwin, Pasar Inpres Oeba, Kupang
14. Fanus Meti & Ishak, desa Tesbaten 2, Kab. Kupang
15. Petrus & Regina, desa Amarasi, kab. Kupang
16. Andreas Zacharias, pengrajin VCO, Staff Dinas Koperasi NTT, Kupang,
17. Herman Nitti, Soleman Biaaf,
18. Ansegar neon, Desa Rekraen di kec. Amarasi Selatan
19. Nika Neno, Desa Rekraen di kec. Amarasi Selatan
20. Ripka tapehen, Desa Rekraen di kec. Amarasi Selatan
21. Sarlola banneas, Desa Rekraen di kec. Amarasi Selatan
22. Thomotius manni, Desa Rekraen di kec. Amarasi Selatan
23. Benedikta kanau, Desa Rekraen di kec. Amarasi Selatan
24. Tina Biaf, Desa Rekraen di kec. Amarasi Selatan
25. Marten hamah, Desa Rekraen di kec. Amarasi Selatan
26. Maksem bannesesi, Desa Rekraen di kec. Amarasi Selatan
27. Frorida Hamah, Desa Rekraen di kec. Amarasi Selatan
28. Maria bannesesi, Desa Rekraen di kec. Amarasi Selatan
29. Derpen Banesse, Desa Rekraen di kec. Amarasi Selatan
30. Hanni Pattianese, Desa Rekraen di kec. Amarasi Selatan
31. mayorita Foni, Desa Rekraen di kec. Amarasi Selatan
32. Joni Suba, Desa Rekraen di kec. Amarasi Selatan
33. Nomensen Phoni, Desa Rekraen di kec. Amarasi Selatan
34. Kadir Kopong Notan, Desa Horinara, kec. Klubagolit
35. Asmiya, Desa Horinara, kec. Klubagolit
36. Mardiyah, Desa Horinara, kec. Klubagolit
37. Hayati, Desa Horinara, kec. Klubagolit
38. Andreas, di Ndorurea Ende

## **Annex 4: Investigation Team**

Include the names of the team members, their organization and their function.

Data collectors and analysis :

1. Erwin Simangunsong
2. Qorinilwan Ishaq
3. Juhnier Mahdalena
4. Yosfialdi