

GROWTH STRATEGY DOCUMENT

CASHEW SUB-SECTOR IN EAST NUSA TENGGARA PROVINCE (NTT)

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WAHANA VISI INDONESIA

Wahana Visi

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Abbreviations

HH	Kepala Keluarga / Household
IDR	Indonesian Rupiah
IMO	Institute of Marketecology
NTB	Nusa Tenggara Barat / West Nusa Tenggara
NTT	Nusa Tenggara Timur / East Nusa Tenggara
PPL	Petugas Penyuluh Lapangan / Agriculture Extension Personnel
PT	Perseroan Terbatas / Company
RCN	Raw Cashew Nut / Gelondongan
TOT	Train of Trainers
WVI	Wahana Visi Indonesia
YSC	Yayasan Sahabat Cipta

1. Executive summary

Cashew is one of the major foreign currency earners in the most of the producing countries. **Global production of RCN (Raw Cashew Nut) in 2013 was 2.60 million tons, having grown from 0.29 million tons in 1961 with an average annual growth rate of 4.13%.** India leads the production of RCN with 29% of the global share in 2013.

Global annual demand (import) for RCN currently stands at 1.55 million tons. Kernel has an annual demand of around 0.5 million tons. Demand for kernel is expected to continue to rise at an average rate of around 10% per year. USA is the largest kernel importer, followed by China and the Netherlands. Viet Nam has been the largest supplier of kernel to the global market since 2006, well ahead of the second largest exporter, India.

In 2013, with 13% of the global cashew plantation area, Indonesia produced 5% of the world RCN. Quantity of exported Indonesian kernel was a little more than 1% of the world export market in the same year. **On an average, more than 40% of RCN produced in Indonesia is directly exported to Viet Nam and India, another 40% is processed as kernel for the domestic market;** and the rest is processed into kernel and exported to USA (42% of kernel export), Australia and other countries. Average export price of Indonesian RCN is stable while kernel price saw a sharper rise, almost three fold from 2009 to 2013.

In the last 10 years, however, production has decreased gradually in Indonesia. Plantation area covering 572,870 ha in 2009 has reduced to 554,315 ha in 2013 and in the same period production decreased from 147 thousand tons to 108 thousand tons.

Despite the decline in the national yield, cashew production in East Nusa Tenggara (NTT) remained relatively stable, with the area under production having slightly increased over the years. NTT currently has the largest plantation and the highest production of cashew in Indonesia. Around 99% of RCN produced in NTT is exported to other islands and countries, and the rest is locally processed as kernel

NTT is the third poorest province in Indonesia (20.24%) with the total population of around five million (1.06 million households). **Cashew is one of the major commodities in NTT.** With the sparse rainfall and the long dry season, **NTT is one of the most suitable cashew production zones in Indonesia. Around 273 thousand farming households, spread in all districts in NTT, produce RCN.**

Productivity of cashew in NTT is low and declining. Cashew trees are almost 30 years old. **Farmers do not have access to rejuvenation and grafting techniques and seedlings. They lack knowledge of better farming practices, do not have business and financial literacy, and cannot access market information.** Cashew processing and value addition (kernel) is extremely limited. Only a handful of women farmers' group produce kernel with heavy support from the government and little market linkages. **The government extension service has low interest in cashew and insufficient knowledge about cashew production**

practices. With limited resources, they focus on other major crops; except from the occasional free distribution of seedlings to cashew farms. **Input suppliers and financial institutions do not target cashew farmers as their clients. They do not have the vision and lack capacity to expand their business in cashew sector.** Farmers rely on the price set by the traders and have limited bargaining powers. Farmers' associations and cooperatives do not have services for cashew farmers.

There is a good potential for interventions in cashew sub-sector in NTT by introducing services and products for cashew farmers with input sellers, financial institutions, and cooperatives. **The vision of change for the cashew sub-sector in NTT is to improve farmers' income from cashew by increasing RCN productivity, as well as kernel production.** This will happen if farmers have improved access to grafting services and better farming practices, access to inputs and financial services, and if they have better bargaining power and improved access to market information. Convincing the relevant market actors to expand their business by targeting cashew farmers, and promoting better inputs and practices among cashew farmers form the crucial elements of the intervention ideas.

This document proposes the following interventions to realize the vision for the cashew sub-sector in NTT -

- To Support the supply and promotion of grafting services that have embedded services (grafting technology, total plantation management) for cashew farmers in NTT.
- To Support Development of Input supply services that provide embedded service (better farming practices) for cashew farmers in NTT.
- To support FIs / Cooperatives to design and promote loan product with embedded services (business analysis and financial literacy) for cashew farmers in NTT.
- Facilitate Collective selling through cooperative/association that provide market information and provide embedded service in Flores.
- To assist traders / inter island traders / national buyers and financial institution in developing local unit kernel processing at the farmers level in NTT.

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 cashew sub-sector to the benefit of smallholder farmers in NTT.

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 context¹

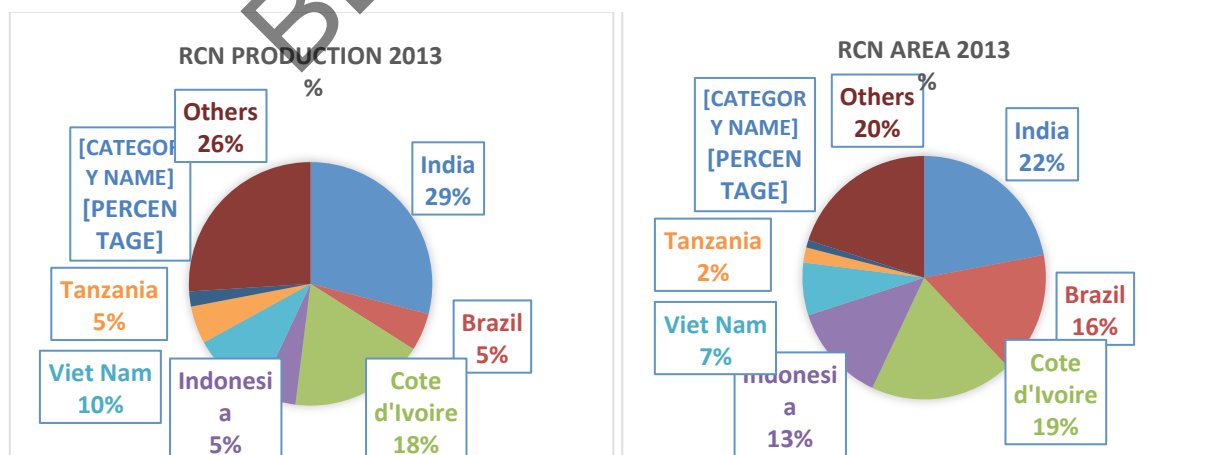
Cashew (*anacardium occidentale*), originated in Brazil, and introduced in other countries in South America, Africa and Asia from the 16th century mainly to control ‘soil erosion’, is now one of the major foreign currency earners in the most of the producing countries.

International context

Global production of RCN (Raw Cashew Nut) in 2013 was 2.60 million tons, having grown from 0.29 million tons in 1961 with an average annual growth rate of 4.13%. India leads the production of RCN with 29% of the global share in 2013, ahead of Cote d’Ivoire (18%), Viet Nam (10%), Indonesia (5%), and Brazil (5%). India also employed the highest area under RCN production (22% of the global RCN area) in the same year, followed by Cote d’Ivoire (19%) Brazil (16%), Indonesia (13%), and Viet Nam (10%).

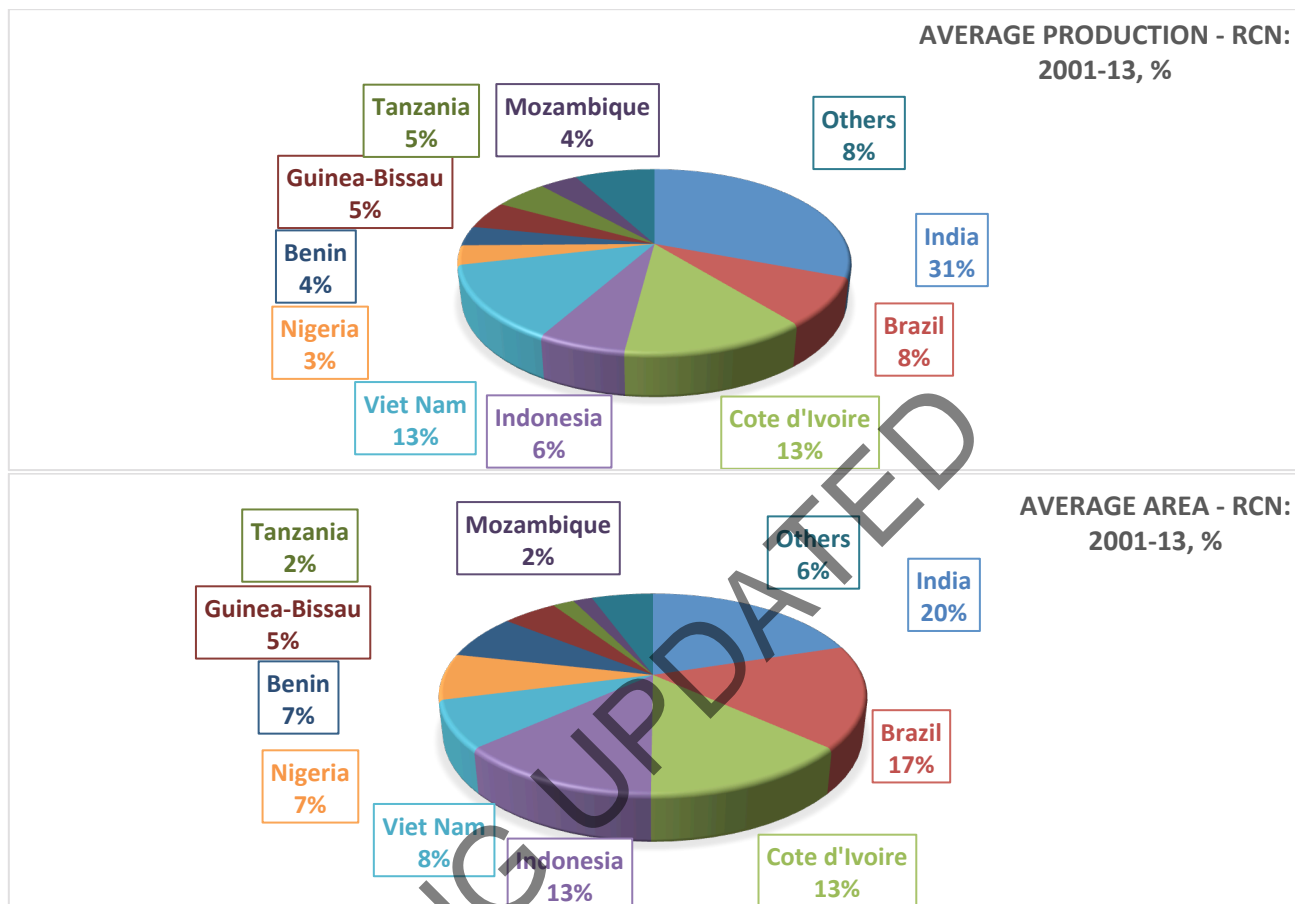
Between 2001 and 2013, the average annual production of RCN and the area under production are also led by the abovementioned countries. India and Viet Nam show better average productivity (0.7-0.8 ton/ha) during that period, with Cote d’Ivoire in the middle (0.45 ton/ha) and Brazil and Indonesia at the bottom (0.25-0.20 ton/ ha), against the global average of 0.47 ton/ha.

Figure 1 Country wise percentage share of global RCN production and RNC Area in 2013



¹ Information and data in this section, unless mentioned otherwise, have been taken or calculated from the “CASHEW HANDBOOK 2014: GLOBAL PERSPECTIVE”: A product of www.cashewinfo.com

Figure 2 Country wise percentage share of global average annual RCN production and RNC Area from 2001 - 2013



Since 2001 global production of RCN has been increasing at a rate of 5% whereas the area is growing by 2.5%. Some countries, however, are experiencing slow growth. Brazil in particular is having a negative growth. The last decade has seen Africa emerging as one of the major RCN regions. Africa produces 42% of the global RCN every year, exporting 90% of this to the rest of the world.

Global annual demand (IMPORT) for RCN currently stands at 1.55 million tons. Kernel has an annual demand of around 0.5 million tons. Demand for kernel is expected to continue to rise at an average rate of around 10% per year. USA is the single largest kernel importer, followed by China and the Netherlands. Viet Nam has been the largest supplier of kernel to the global market since 2006, well ahead of the second largest exporter, India. Both Viet Nam and India are also the main importers of RCN.

The global price of kernel has been increasing steadily over the years although RCN price remained fluctuating. Price of Vietnamese kernel is relatively cheaper than that of India. Broken kernels usually fetch much lower price than the whole kernels, although they bear identical nutritional value. Over the years, food safety requirements have increased in the importing countries across the world.

National context

Commercial cultivation of cashew started in Indonesia only in the recent past, not until the mid-seventies. Cashew was introduced in Indonesia primarily for afforestation programme. Commercial plantation first started in the mid-seventies, exports began in the eighties, and by the nineties Indonesia became one of the major cashew producers in Asia.

East Nusa Tenggara (NTT) is currently the highest producer in Indonesia followed by Southeast Sulawesi, West Nusa Tenggara (NTB), and East Java.

In 2013, with 13% of the global cashew plantation area, Indonesia produced 5% of the world RCN. Quantity of exported Indonesian kernel was a little more than 1% of the world export market in the same year.

On an average, more than 40% of RCN produced in Indonesia is directly exported to Vietnam (57.6% of export) and India (41.7%); another 40% is processed as kernel for the domestic market; and the rest (about 20%) is processed into kernel and exported to USA (42% of kernel export), Australia (11%), Germany (9%), India (8%), Canada (6.0%) and other countries. Indonesia is one of the major suppliers of RCN for India and Viet Nam. Indian traders gather in the main production centres of Indonesia from November to January every year and directly export RCN to India. There are a number of Indonesian companies involved in the trading and processing of cashew nut, gradually increasing their market share and drying up the supply for the Indian traders. PT Comextra Majora, PT Olam, PT Phoenix Mas, PT Sekar Laut, PT Supa Surya Niaga, and PT East Bali Cashew are some of the major processors. Organic cashew processors include PT Kampung Kearifan Indonesia (Javara), PT Profil Mitra Abadi, and PT Indo Agro Forestry (Agri food). Cashew is exported from the major Indonesian ports like Surabaya and Ujung Pandang.

Average export price of Indonesian RCN in 2009 was 1.04 USD/kg, rising to 1.34 USD/kg in 2011, and settling to 1.21 USD/kg in 2013. Average kernel price saw a sharper rise, from 1.17 USD per lb FOB in 2009 to 3.05 USD per lb FOB in 2013. Indonesian cashew enjoys some competitive advantages such as different harvest time

Figure 3: Major area and production of cashew in Indonesia

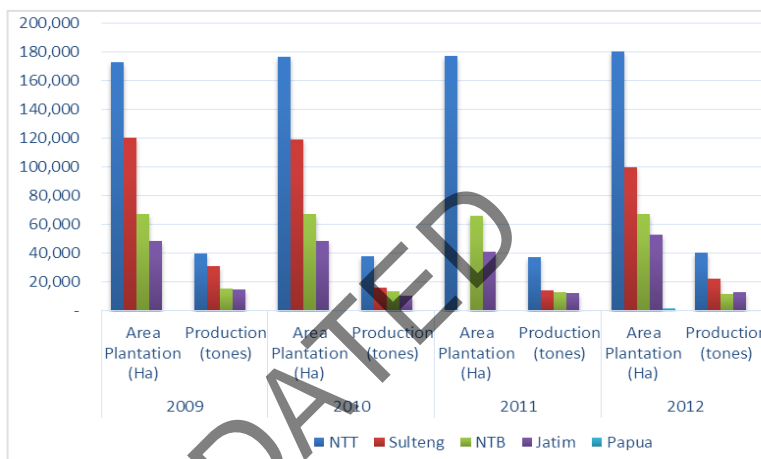
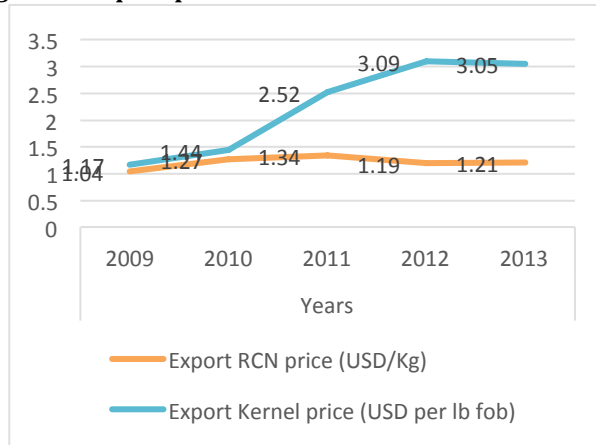


Figure 4: Export price of Indonesian RCN and Kernel



compared to other countries, lower transportation cost to India and Viet Nam than that from Brazil and Africa, and the overall good quality.

Production of cashew and the land coverage in Indonesia has increased steadily since 1975 till the end of the nineties. In the last 10 years, however, production has decreased gradually. Plantation area covering 572,870 ha in 2009 has reduced to 554,315 ha in 2013² and in the same period production decreased from 147 thousand tons to 108 thousand tons.

3.1.2 Local context

Despite the decline in the national yield, cashew production in East Nusa Tenggara (NTT) remained relatively stable, with the area under production having slightly increased over the years. NTT currently has the largest plantation and the highest production of cashew in Indonesia. Around 99% of RCN produced in NTT is exported to other islands and countries, and the rest is locally processed as kernel. Total production of RCN in NTT reached 39.9 thousand tons (37% of Indonesian Production) in 2013. Plantation area covers 180,642 hectares (33% of total plantation in Indonesia). Table 1 shows the major production hubs of the three islands in NTT.

Table 1: The largest cashew areas in NTT and their production: Year 2012

No.	District / City	Plantation Area (Ha)	Production (ton)	Productivity (KG/Ha)	Number of Household	% of Poor HH	Number of Cashew HH
Flores Island							
1	East Flores	29,224	10,258	693	51,127	43.74%	44,633
2	Sikka	21,858	8,320	805	64,487	35.07%	33,420
Sumba Island							
1	Southwest Sumba	14,772	4,553	568	49,251	71.36%	21,606
2	East Sumba	10,035	2,026	521	46,863	62.92%	15,921
Timor Island							
1	TTU	11,298	1,373	329	53,396	46.34%	10,580
2	Kupang	9,715	890	174	68,942	47.16%	15,599

NTT is the third poorest province in Indonesia (20.24%) after Papua and West Papua with the total population of around five million (1.06 million households). **Cashew is one of the major commodities in NTT. With the sparse rainfall and the long dry season, NTT is one of the most suitable cashew production zones in Indonesia. Around 273 thousand farming households, spread in all districts in NTT, produce RCN³.** Most of the farmers in NTT sell their cashew in unprocessed form on an individual basis. Processing of the miniscule amount of kernels within NTT (less than 0.5%) involves mainly women.

² Ministry of Agriculture RI, 2014

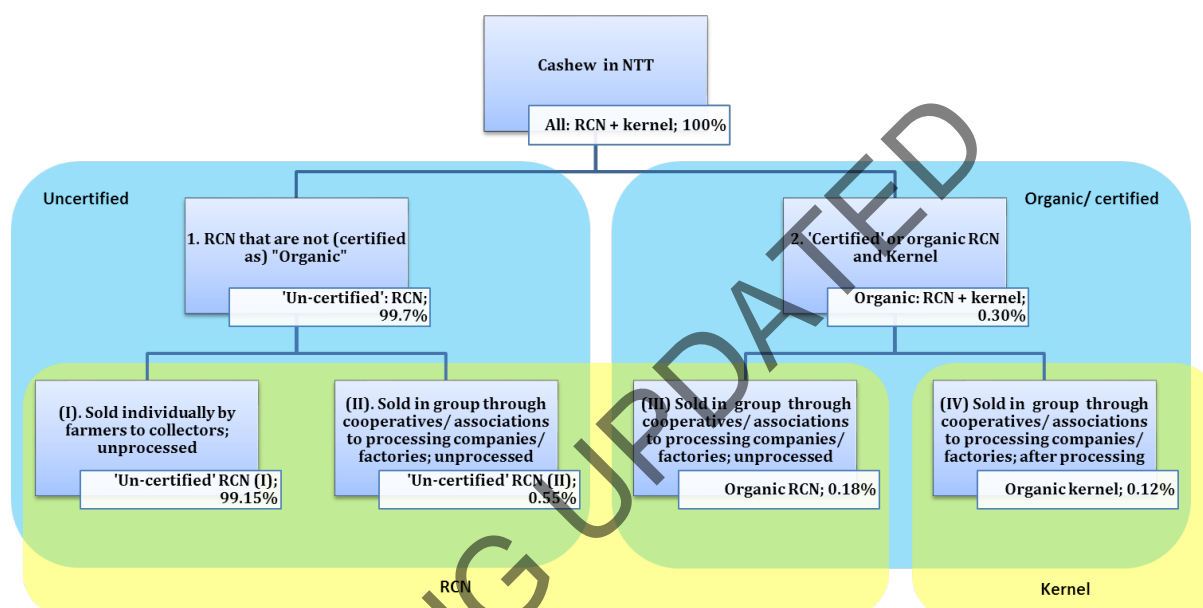
³ Dinas Pertanian dan Perkebunan NTT

3.2 Sector dynamics

3.2.1 Market overview

Cashews in NTT (RCN and kernels) can be broadly categorized into two types: (1) RCN that are not (certified as) 'organic', and (2) Organic 'certified' RCN and kernel. More than 99% of cashew produced and sold in NTT fall under the type (1). Across the islands in NTT, there are four patterns how farmers sell their cashews. (See figure 5)

Figure 5: different patterns how farmers sell their cashews



- (I) Around 99% of all cashew farmers in NTT sell unprocessed cashews (RCN; both brown-skin and white) individually to the collectors. This pattern does not involve certification⁴ and is labelled 'un-certified' in figure 5 and 6.
- (II) Around 1,500 households (HH) of farmers (0.55%) sell RCN, that are also 'un-certified' (i.e. not organic), collectively through cooperatives/ associations to processing companies/ factories in unprocessed form.
- (III) Around 825 HH of farmers (0.30%) sell organic "certified" cashews collectively through cooperatives/ associations to processing companies/ factories. Of those farmers, around 500 HH sells unprocessed organic cashew in unprocessed form (organic RCN; both brown-skin and white) and
- (IV) Around 325 HH of farmers sell organic cashew in processed form (organic kernel).

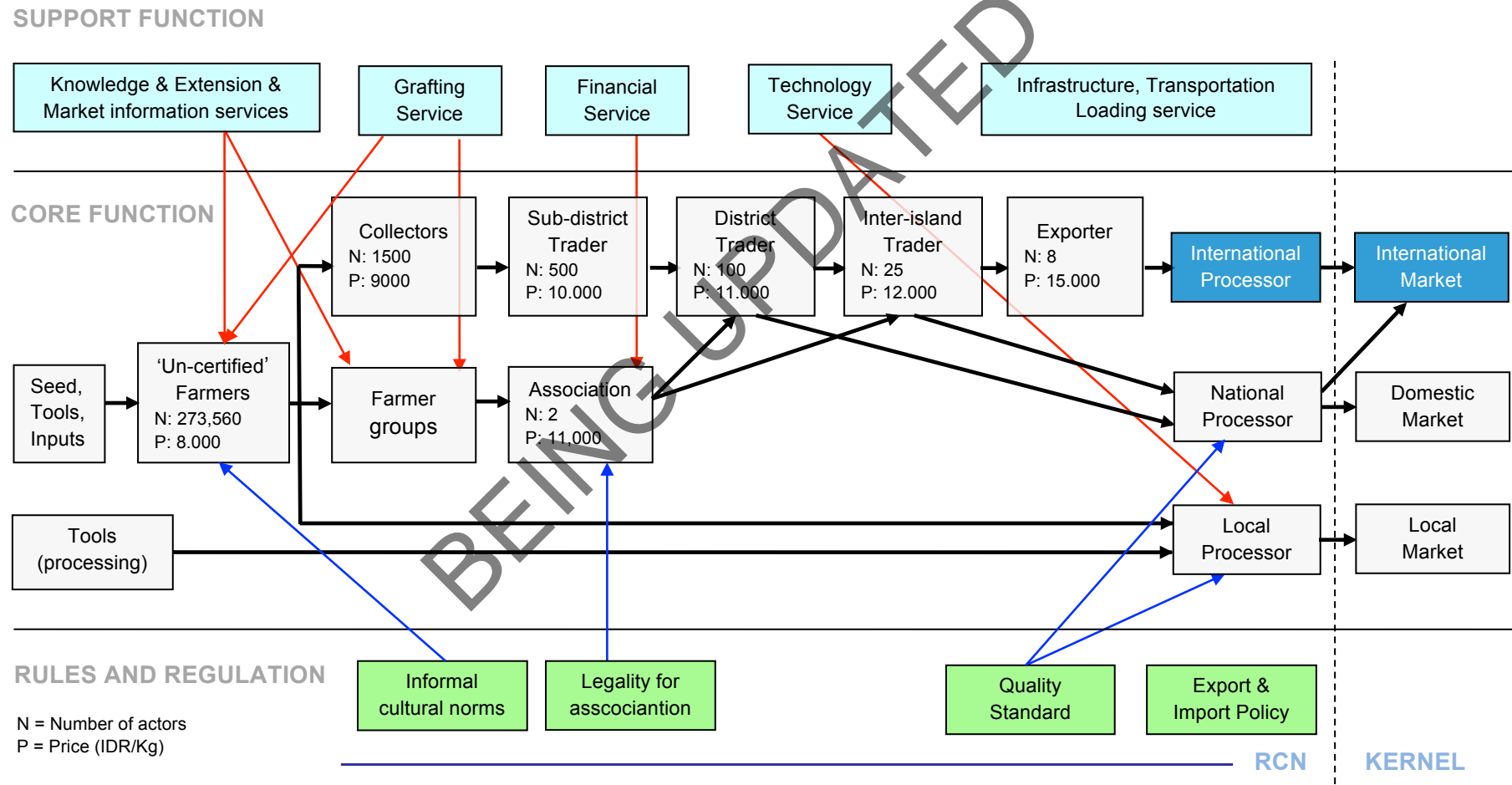
Pattern II, III and IV are only visible in East Flores District while the rest of Flores, Sumba, and Timor follow the dominant channel: pattern I.

⁴ "Certification" in this case refer to a "form of recognition granted by a special competent agency – such as IMO (Institute for Marketecology) and BIOCert – for a particular agricultural product. The product concerned is declared to have followed specified standards related to the handling of production aspects (including the use of organic fertilizer) and to post-harvest handling. This certification provide a guarantee from the farmers who offer their products to purchasers that the quality of the product is in accordance with the standards set by the certification institution"

3.2.2 Market map

Market map of RCN and kernel that are not (certified as) organic

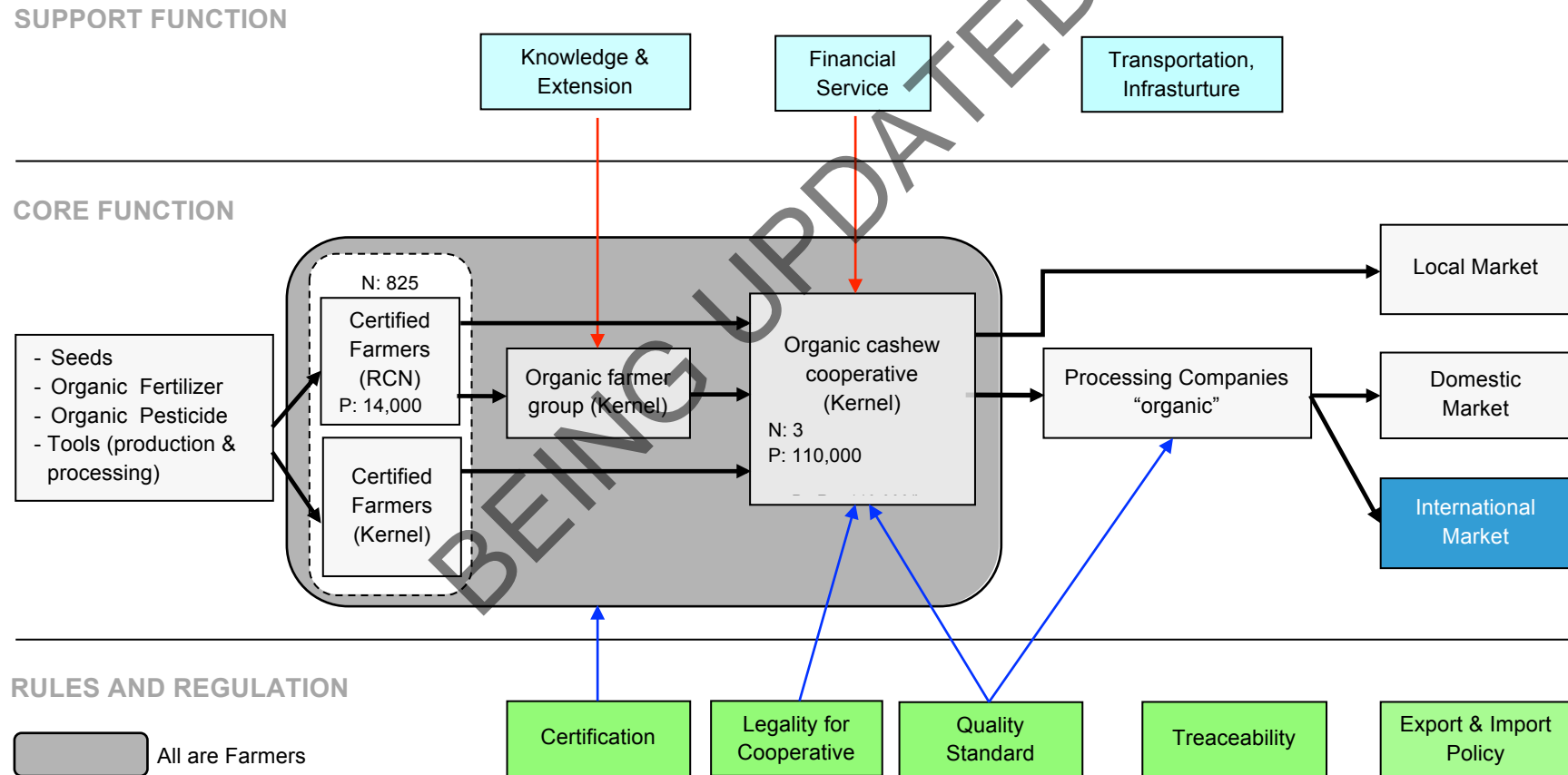
Figure 6: Market map: 'un-certified' RCN and kernel



Market Map of organic 'certified' RCN and kernel

Although less than 0.5% of farmers produce and sell “certified” organic RCN and kernels in NTT, it is worth looking also at the market map for the organic cashew, which is different than that of the dominant one – the “un-certified” cashew.

Figure 7: Market map: Organic certified RCN and kernel



N = Number of actors
 P = Price (IDR/Kg)

3.2.3 The core value chain

Inputs

Farmers largely depend on the nature to grow cashew in NTT. They do not use chemical fertilizer, insecticides, and pesticides. Rejuvenation is rarely observed and there is limited supply of planting materials. In general, they are not willing to buy and apply fertilizer although fertilizer is somewhat available in the market, distributed by the local government through local input suppliers. Farmers often relate the declining productivity of cashew to 'climate change'. Although this complete dependence on the nature results in low productivity, in some cases in East Flores it provides the farmers with the opportunity to look for 'organic certification' and to fetch higher price for their products. In the organic system, some farmers apply organic fertilizer and pesticide produced by themselves. This number, however, is minuscular (less than 0.50%) compared to the total number of cashew farming households in NTT.

Production

Cashew plantations in NTT are mostly owned and managed by smallholder farmers. Total number of cashew farmers are 273,560 households (HH), spread in 21 districts in NTT. Cashew production and harvests involve both men and women. After they grow cashews depending on 'the wisdom of the nature', farmers harvest the matured cashew, cut and cashew fruits (red or yellow), and separate the "in-shell cashew". Most of the farmers dry the cashews on-farm, for one or two days, and sell the RCN directly to collectors. A few farmers (around 1,500) sell RCN to the association. Only 825 are the 'certified' organic cashew farmers; all in the East Flores district. Especially for the organic ones, farmers dry the cashew for 4 days, until reducing the moisture content to 10%.

A lot of farmers depend on the 'ijon' system. Under this informal and traditional local system, they take loan from the traders/ collectors in the time of cash crunch, typically before the harvest time, for meeting household expenditures (and mostly, NOT for cashew production). This credit is adjusted when they sell RCN to the collectors/ traders.

Trading

Around 99% of farmers depend on the local collectors to sell their RCN. Apart from those village level collectors, there are sub-district and district level collectors, carting to the inter-island traders. District and inter-island traders at the end supply RCN to the exporters and the national processors. There are 2 associations of farmers that conduct collective selling at the farmers' level and sell cashew directly to traders in the district level. There are around 1,500 village level collectors buying RCN from individual farmers for an average price of IDR 9,000/kg. Around 500 collectors at sub-district level buy RCN from the village-level collectors for an average price of IDR 10,000/kg. A total of 100 district collectors buy RCN for an average price of IDR 11,000/kg. There are around 25 inter-island traders. Some of the district collectors also play the role of inter-island traders. They buy cashew on an average for IDR 12,000/kg.

Three (3) cooperatives with around 825 cashew farmers manage the organic 'certified'

cashew production. They buy RCN from the ‘certified’ farmers/ farmers’ groups for an average price of IDR 14,000/kg, “brown-skin” cashew for IDR 72,000/kg, and “white” cashew for IDR 110,000/kg and sell it to organic cashew companies and exporters.

Mostly all exporters are based in Surabaya and Jakarta. Some of the exporters, companies, and their representatives stay in NTT during harvest season. They make annual contracts with the wholesaling/inter-island traders to buy cashew at an average price of IDR 15,000/kg (un-certified’ cashew, not organic). **Around 80% of the RCN from NTT still goes to the Indian traders-exporters. However, the growing demand from the national processing companies has gradually started altering this scenario.**

Processing

Table 2 summarises useful information about 9 major national-level cashew processing companies in Indonesia.

Table 2: Nine major processing companies in Indonesia

No	Name	Products	Location	Other Information
1	PT. Comextra Majora	Not organic; RCN, Brown-skin, and Kernel	Makassar, Sulawesi	<ul style="list-style-type: none"> Has a cashew storage warehouse in Maumere, Flores Buys unprocessed RCN at, on an average, IDR 13,500/kg (grade A) and IDR 12,500/kg (grade B) Exports Kernel Demand: “Unlimited” as in significantly high demand and rapidly growing unmet demand.
2	PT. East Bali Cashew	Not organic; RCN	Bali	<ul style="list-style-type: none"> Buys 20 tons RCN from East and west Sumba Buys RCN at IDR 12,000/kg Demand : 240 tons/year
3	PT. Sekar Laut	Not organic; RCN	Surabaya	<ul style="list-style-type: none"> In the past, bought cashews in Flores (PT. Sekar Alam). Demand : “Unlimited”
4	PT.Supa Surya Niaga	Not organic; RCN	Surabaya	<ul style="list-style-type: none"> Sells Kernel in domestic markets and also exports Demand : “Unlimited”
5	PT. Eka Prima	Not organic; RCN	Jakarta	<ul style="list-style-type: none"> Has a cashew storage warehouse in East Flores Buys unprocessed RCN at, on an average, IDR 12.000/kg (mixed grades) Demand : “Unlimited”
6	PT. Phoenix Max	Not organic; RCN	Lombok, NTB	
7	PT. Kampung Kearifan (Javara)	Organic; Brown-skin, Kernel, and Not organic; Kernel	Jakarta	<ul style="list-style-type: none"> Plans to establish a cashew processing unit (collaboration with local investor) in Flores in 2015 Buys brown-skin and kernel from farmer cooperatives, with contracts and embedded services. Manages 3 types of certifications (organic, Fair trade, and Bio Swiss) and willing to pay for the certification fees. Buys organic cashew with premium price and provides pre-financing before harvest. Promotes originally product (story)

				<ul style="list-style-type: none"> Exports Kernel Demand : Minimum 400 tons/year
8	PT. Profil Mitra Abadi (PMA)	Organic; RCN, Brown-skin,	Serpong, Banten	<ul style="list-style-type: none"> Buys brown-skin and kernel from farmer cooperatives, with contracts and embedded services. Interest in buying certified organic cashew certified Buys organic cashew with premium price and provides pre-financing before harvest. Promotes “original product” stories Exports Kernel Demand : Minimum 400 tons/year
9	PT. Indo Agro Forestry	Organic; Kernel	Bogor, West Java	<ul style="list-style-type: none"> Demand : Minimum 150 tons/year

Based on the “Political Economy Study Report” on the “Business Enabling Environment for the Commodity of Cashews in East Flores District, East Nusa Tenggara, 2014”, processing of cashews (certified) at the farm level can generate an aggregated additional income of IDR 2.0 million per year for farmers, or 36% more than the income from selling the cashews unprocessed, with the labour costs included in the calculation. If labour costs are not included, since the work is usually done by the farmers themselves, the additional income goes up to IDR 3.9 million per year or 70% more than the income from selling the cashews unprocessed. However, as mentioned earlier, most of the farmers (more than 99%) sell their cashews in unprocessed form on an individual basis.

For organic cashew, nevertheless, there are some 526 households of cashew farmers that process RCN mainly to brown-skin cashews and sell that to the 3 cooperatives. Those cooperatives then process the brown-skin cashews to kernels and sell the kernels to the organic cashew exporters and processors.

On top of that, there are 10 local processing units managed by farmers’ groups that produce kernels that are not certified as organic. This processing mainly involves women. Those farmers’ groups had received training and the processing equipment and from the local government in the past. With the low and often diminishing capacity, they mainly sell the kernel to the local market in NTT.

3.2.4 Supporting Functions

Agriculture extension services by the government at the sub-district level (PPL staff) are the main source of knowledge for individual farmers and farmer-groups. The agricultural extension (PPL) in NTT consist of 2,504 personnel in total, of which 1,199 are Government employees, 933 contracted workers, and 372 are self-help *swadaya* ⁵

Cashew farmers get price information from the traders; mostly from the collectors. The Government extension services do not provide market and price related information to the farmers. Most of the farmers’ groups are also not capable of providing that information.

⁵ Data of Agency of Agriculture extention and humanresources development. 2013

Grafting service for rejuvenation is conducted by seedling suppliers to the government, only when there is a demand from the government. Those seedling producers usually do not directly cater to farmers. Rejuvenation and expansion programmes by the Government do not always supply grafted seedlings. Natural seedlings that are often distributed for free by the government take more than 8 years to get the first harvest, whereas the grafted seedlings can reduce the time to 2 – 3 years after grafting. Grafting can increase productivity by 30%. Side grafting for cashew to have rapid improvements of yield is under government research and experiments now, with little success so far. There are around 50 seedling suppliers in NTT, but only 30% of them are certified by the government.

Government banks (BNI, BRI), private banks (Bank NTT, BPR) provide financial services to farmers in general. There are also micro-finance products⁶ and other sources of finance from credit unions and farmers' groups. However, farmers seldom take financial support for cashew from those providers. **Farmers often rely on the informal sources (traders, money lenders) when in need for urgent cash. When cashew is available, farmers prefer to go to the traders first and sell cashew for funding their regular expenses. When cashew is not available but farmers are in need for urgent cash, they go to the collectors and take "ijon" or advance money from the collectors.** The collectors may even buy cashew, by giving advance/ *ijon* when the trees start to flower, and take the fruits during harvest time, adjusting the advances/ loans. Farmers do not necessarily take *ijon* for production of cashew. They use *ijon* to fund daily expenses when they run out of cash and cashew.

Government has programmes for women that give them tools to process RCN into kernel. Manual cracking tools, mostly from national companies in Java are sold to government for free distribution to women groups. Women do not buy those tools from the companies and suppliers.

Depending on the distance, farmers use own or public transports to bring cashew to the traders. Cashew goes out of NTT through water ways. 60 to 70% of the roads are in good condition. Most of the seaports in the province has limited facilities. Most ports have only one dock, which makes ships have to queue to lean if arriving on same time. Loading-unloading services engage workers in every harbours, especially in container service harbours and labour costs are expensive. For inter-provincial trade of cashew, sea transportation (Shipping) are provided mostly by ships except in some areas in NTT where they use truck and ferry services There are some companies who provide container services.

3.2.5 Supporting Rules and Regulations

⁶ Kredit Usaha Rakyat (KUR), Kredit Ketahanan Pangan dan Energi Nabati – Revitalisasi Perkebunan (KKPEN-RP), Program Kemitraan dan Bina Lingkungan (PKBL), Kredit Usaha Pedesaan (Kupedes)

Besides the daily consumption needs, **culture norm of spending a lot of money on different ceremonies** is one of the reasons why *ijon* system has been running for a long period of time.

There are rules related to farmer groups and the association of farmer groups. Farmer groups should have a legal form and should be inaugurated by the village leader.

“Cashew Kernel Specifications (SNI 01-2906-1992)” defines four grades of cashew (grade A, B, C, D) based on the number of kernel per lb (between 210 and 450 kernel per lb). Ideal moisture level is 10% in cashew and 5% in kernel.

Food safety and standards of hygiene is becoming more important day by day in the major importing countries in Europe and North America. Sophisticated and precise test for adulterants, contaminants such as pesticide residues and mycotoxins are influencing the pattern of trade of some nuts and other foods, but cashew is not much affected so far. Pesticide is rarely used in cashew. Aflatoxin or any microbial problems are dealt with by farther roasting in the consuming markets. Traceability is becoming important day by day for the EU countries. For cashew the European roaster needs to trace back the packer who supplies a consignment of nuts but not the producer or the shellers. **So the growing safety standards and traceability and other compliance issues in the international market are not significantly affecting cashew trade at present.**⁷

Based on Political Economy Study Report on the Business Enabling Environment for the Commodity of Cashews in East Flores District, there are six local regulations (*peraturan daerah, perda*) that could be related to cashew. None of those six regulations specifically regulate cashew sub-sector; most of these regulations are of a general nature (83%) and the rest are specific to sectors/subsectors (17%). **Of those six regulations, five are seen as “problematic” in terms of their substance and principle aspects.**

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 cashew farmers in NTT is the low and often declining productivity. This leads to reduced income from cashew. The specific problems faced by farmers and their underlying causes are summarised below.

⁷ IFC, 2007, current trend in the cashew kernel market

Most of the cashew trees are already more than 30 years old. **There are no information available to farmers about modern rejuvenation techniques.** Grafting technology and seedling are rarely supplied.

Farmers do not apply good farming practices. Cashew farms are considered too large (often referred to as cashew forest) and too far away by the farmers to be able to apply better practices. There is limited knowledge / information about good farming practices and pest control.

- Farmers harvested low numbers of cashew from the old trees. Rejuvenation is rarely practiced
- Farmers do not apply better farming practices. Cashew gardens are often too big and too remote for farmers to apply better practices.
- Farmers have limited knowledge on good farming practices.
- Farmers do not find pesticides and fertilizer in the villages and need to travel to the districts. But more often than not farmers lack interest and capital to use those inputs
- Farmers have limited information about market price. Price is often fluctuated. Farmers lack bargaining power in a long supply chain.

Fertilizers and pesticides are not found in the villages and are only available in the district centres. **Farmers often do not have enough capital to use those inputs. Financial institutions do not attract cashew farmers due to their complicated procedures.**

Cashew can grow in dry land but need rain before blooming season. But in the last five years, time and intensity of rain became irregular, affecting the blooming of cashew trees and reducing production.

Farmers do not get uniform price for cashew. Different farmers at the same time, with similar quality of cashew, are offered different price by the collectors or traders. Farmers do not have market price information, buyers determine the price. Farmers mostly sell individually (only 20 farmer groups in East Flores District conduct collective selling) and lack bargaining capacity in a long supply chain. Government assistance programmes with farmer groups mostly focus on production, rarely touching the marketing side (price, quality, conditions that prompted the market). Depends on *ijon* system (taking cash advance from traders/ collectors) to pay for their daily needs also reduces the bargaining power of the farmers.

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 cashew farmers. Two key issues affecting the farmers due to the problems faced by the market actors are summarised below -

- Traders / collectors are unable to meet market demand (quantity, quality and continuity). Competition among traders reduces the importance on the quality of cashew. Farmers loose interest in giving efforts in maintaining better quality.
- Processors do not get significant volume of brown-skin cashew (semi-processed) from farmers. The number of farmers producing brown-skin is too low for the processors to invest in buying it from farmers. So the farmers also do not see the market potential of producing it.

Traders are unable to meet the market demand. Production of cashew has declined and competition among traders intensified. Farmers often harvest cashew too early to sell and get cash for urgent needs. Particularly in the rainy season, quality deteriorates farther as farmers do not conduct proper drying processes. Because of the fierce competition traders do not focus on quality. Farmers do not get incentive to focus on quality as a result.

Processor do not get significant volume of brown-skin (semi-processed) cashew. Farmers do not perform processing to produce brown-skin because of limited information and knowledge about the price, the market and technology. Training and support in the form of for processing activities at the farm level is also very limited. Financial services have too complicated procedures for farmers to access the services. Processing mostly carried out by the exporters or wholesalers where they buy raw cashew. The number of farmers producing brown-skin is too low for the processors to invest in buying it from farmers. So the farmers also do not see the market potential of producing it.

The number and types of ground transportation is very limited in some places. In case of sea transportation, departure schedule is irregular (especially in of Sumba). This affects the business of the traders.

4.3 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.

- Knowledge and information services for cashew is not provided by the input sellers as they do not see the value of extending business with cashew farmers. Government extension service lack resource, knowledge.
- Grafting services is weak and dependent on government buying orders. Weak marketing capacity of the providers.
- Input supply providers lack capacity and vision to give services to cashew farmers and expand their client base and business.
- Cooperative/farmer associations do not have capacity to provide aggregation, bulk selling, and price information services.
- Financial Services are not targeted to cashew farmers. Financial service providers do not see cashew farmers as target worthy clients who they can provide embedded services with finance.

Government extension service with limited resources focus on major crops and do not give services to cashew farmers. **Knowledge of PPL staff about better farming practices of cashew is also limited. Private input companies do not provide information services to the cashew farmers as they do not see them as major clients.** Farmer organizations do not have the capacity to assist farmers with better information services.

Number of grafting service (seedling) providers is very low. They also lack knowledge about modern rejuvenation practices. Input used for grafting are not always of better varieties. **Seedling providers have limited marketing capacity** and do not promote their products and techniques to farmers. They rely mostly on government as a buyer.

Number of input (fertilizer, pesticide) is low. They often are located in the district centres far away from villages. Input sellers do not see cashew farmers as clients as the demand is very low. They often do not have the capacity and vision to give services to cashew farmers and expand their client base and business. Subsidised fertilizer is restricted by the rules relating to the quota of fertilizer (Regulation of the Minister of Trade No. 7 / M-DAG / PER / 2/2009). Drying machines that are available in the market are suitable only for the big processors.

Cooperatives / farmer association do not focus on giving market information services to the members. Price set by the buyers and farmers, selling individually, do not have enough bargaining power. Collective bargain by cooperatives or farmers groups is rare. **Cooperatives and farmers groups usually do not have the capacity to extend aggregation and bulk selling services for its members.**

Financial services are not functional for cashew farmers. Financial service providers do not see cashew farmers as target worthy clients who they can provide embedded services with finance. It is not easy for cashew farmers to access financial services due to complicated procedures in many cases.

A few groups of women farmers are involved in kernel production but this is heavily supported by the government programmes. Technology services for farmers is not there to help more women to do the processing,

4.3 Cross cutting issues (gender and environment)

Men and women work together in the cashew farms. Men are responsible for clearing the land, Women focus on harvesting and selling raw cashew nut. Small number of women are also involved in processing RCN to kernels.⁸

Cashew is a dry land crop, can be grown in areas with less water. Cashew tress can reduce land erosion. One of the major reasons for cashew plantation had been tackling erosion.

⁸ More insights into gender in cashew will be included in the next iteration

5. Strategy for Change

5.1 Market potential

Increasing productivity, price and added value will impact to increasing income of significant number of cashew farmers (men and women).

Table 3: market potential calculation

Market/Production Value			
	Total	Up to 2016	Up to 2018
Average Selling price per kg (IDR)	7.500	7.500	7.500
Current Value of Production (million IDR)	443.572.773	1.430.888	17.325.000
Total value of potential production (million IDR)	465.751.412	1.430.888	20.790.000
Total value of potential production (AUD)	46.575.141.165	143.088.750	2.079.000.000
Total potential value of increased production (million IDR)	22.178.639	-	3.465.000
Total potential value of increased production (AUD)	2.217.863.865	-	346.500.000
Market share due to program		0%	1 %

5.2 Vision of change

Farmers have better income from cashew by increasing RCN productivity, as well as kernel production.

Vision of Change in Service Level

Farmers have

- Improved access to grafting services and better farming practices
- Improved access to inputs financial services
- Better bargaining power and improved access to market information
- Improved access to processing technology

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

- Intervention 1. To Support the supply and promotion of grafting services that have embedded services (grafting technology, total plantation management) for cashew farmers in NTT.
- Intervention 2. To Support Development of Input supply services that provide embedded service (better farming practices) for cashew farmers in NTT
- Intervention 3. To support FIs / Cooperatives to design and promote loan product with embedded services (business analysis and financial literacy) for cashew farmers in NTT
- Intervention 4. Facilitate Collective selling through cooperative/association that provide market information and provide embedded service in Flores.
- Intervention 5. To assist traders / inter island traders / national buyers and financial institution in developing local unit kernel processing at the farmers level in NTT.

Intervention 1 – To Support the supply and promotion of grafting services that have embedded services (grafting technology, total plantation management) for cashew farmers in NTT. This intervention will focus on commercialise the grafting service (seedling) providers. The project, in partnership with the service providers, will promote the better quality seedlings and strengthen the demand. The project will also work on improving the quality of the seedlings and the marketing and distribution of the seedlings.

Intervention 2 – To Support Development of Input supply services that provide embedded service (better farming practices) for cashew farmers in NTT. Under this intervention the project will show the input sellers the value of extending services and products to cashew farmers and expanding their businesses. It will also demonstrate the use better inputs and practices, in partnership with the input sellers, to the farmers.

Intervention 3 – To support FIs / Cooperatives to design and promote loan product with embedded services (business analysis and financial literacy) for cashew farmers in NTT. Similar to intervention 2, this intervention will show the financial service providers the value of extending services and products to cashew farmers and expanding their businesses. The project will try to develop dedicated financial products suitable for cashew farmers with the financial institutions.

Intervention 4 – Facilitate Collective selling through cooperative/association that provide market information and provide embedded service in Flores. The project will work with the cooperatives to diversify their services for the member farmers. Cooperatives that are giving aggregation and bulk selling services will be assisted to expand it to additional members. Showcasing the learnings with those cooperatives, additional cooperatives will be encouraged and assisted to follow the similar models.

Intervention 5 – To assist traders / inter island traders / national buyers and financial institution in developing local unit kernel processing at the farmers level in NTT. This will be a targeted intervention for women, commercializing and expanding the existing production of kernel. This intervention will work with buyers and financial institutions to build on the existing skill of the small group of women producing kernels and engage additional

women farmers as their suppliers by giving appropriate supports, skills.

5.4 Sequencing and prioritisation of intervention

Figure 8: Sequencing and prioritisation of intervention

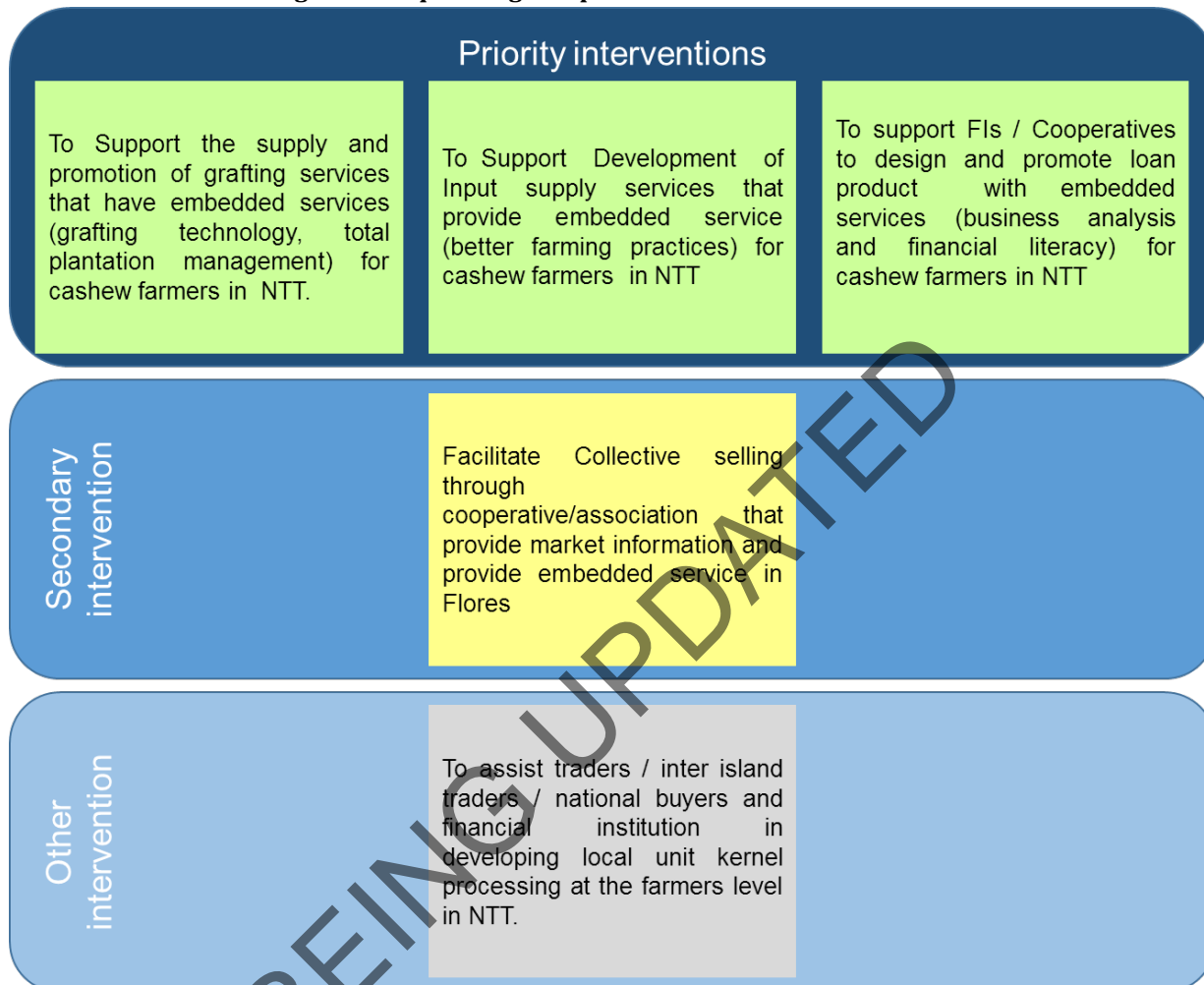
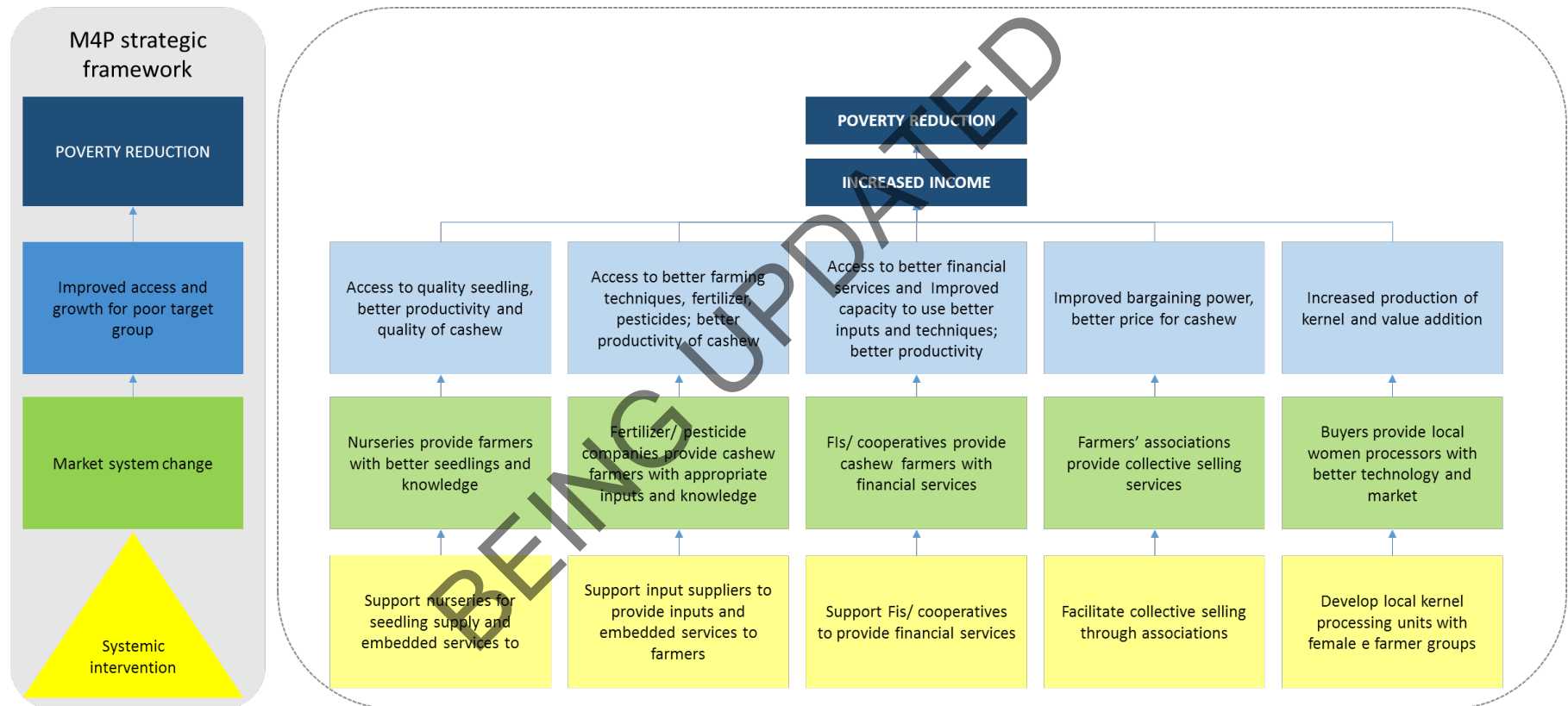


Figure 8 depicts the sequencing and the prioritization of the interventions. Three interventions that focus on increasing the productivity by better availability and application of inputs, technology, and by better access to finance are prioritised as the first tire of the implementation. Besides working on productivity, the intervention with the cooperatives for diverse services to cashew farmers is designed as a secondary line of effort to boost bargaining power of cashew farmers. Finally, the intervention related to kernel production with women farmers' groups has been designed as a targeted intervention at a later stage.

5.5 Sector Vision of Change Logic

Figure 9: Sector vision of change



Annex 1: Summary Table - Intervention Logic Analysis Framework (ILAF) – Cashew NTT

(1) Problem/ Symptom	(2) Underlying cause	(3) (4) Supporting function / rules	(5) Weaknesses	Intervention	Actors
<p>Problem 1. Farmers harvested in low numbers of RCN (RCN Production is sub optimal)</p> <p>Why 1: Many of the trees are old. Why 1a : Less & late rejuvenation Why : Limited knowledge and awareness among farmers regarding rejuvenation</p>	<p>There is limited provision of information regarding grafting technology, and limited supply of grafting plants/entres</p>	<p>Information services Grafting services</p>	<ol style="list-style-type: none"> Limited number of input (grafting) provider. Small scale providers Knowledge of input (grafting) provider and PPL about modern rejuvenation are limited Input (seed, entres) use for grafting are not always of high yield variety Limited marketing capacity for grafting products 	<ol style="list-style-type: none"> To support the supply and promotion of grafting materials that have embedded services (grafting technology, total plantation management) for cashew farmers in NTT. 	<ul style="list-style-type: none"> - Input seed supplier - Cashew??
<p>Why 2: Farmers are reluctant to apply better farming practices and spend resources in fertilizer, pesticide, composting and pruning. Why 2a: Cashew farm is too large forest) and its far from farmer's home. Why 2b: Farmers don't have knowledge and awareness about better farming practices and don't see the return of better practices</p>	<p>Limited provision of information and knowledge services about better farming practices</p>	<p>Knowledge and information Services</p>	<ol style="list-style-type: none"> PPL focus on other crops Limited number of PPL (PPL accompanying 2-3 villages) Knowledge of PPL and key farmers (cadre) about better farming practices are limited No provision of information services by private sectors 	<ol style="list-style-type: none"> To Support Development of Input supply services that provide embedded knowledge (better farming and post harvest practices) for cashew farmers in NTT 	<ul style="list-style-type: none"> - PT. Nasa - PT. Nufarm - PT. Neemba? - Tk. Cinta Karya - Pintu Air Cooperative
	<p>Limited promotion of inputs for cashew production.</p>	<p>Input Supply services</p>	<ol style="list-style-type: none"> The number of providers is limited A long distance away from the village (only at the city level) Have no activity of dissemination / promotion and have no link with farmer groups Restricted by the rules relating to the quota of fertilizer (Subsidy fertilizer) Regulation of the Minister of Trade No. 7 / M-DAG / PER / 2/2009. 		

<p>Why 2c: Farmers lack capital to apply better farming practices (Fertilizer, pesticide)</p>	<p>No Financial schemes that provide loan for cashew farming and stimulate the usage of input</p>	<p>Financial services</p>	<ol style="list-style-type: none"> 1. FI doesn't focus on cashew farmers 2. Credit Disbursement take a long time (especially banks) 3. Requires guarantee / collateral and legality 4. Limited capacity of bank's staff to assist the farmers about business calculation and financial literacy. 	<p>3. To support FIs / Cooperatives to design and promote loan product with embeded services (business analysis and financial literacy) for cashew farmers in NTT</p>	<ul style="list-style-type: none"> - Bank BRI - Bank NTT - Cooperatives
<p>Why 3 : Climate change.</p>					
<p>Problem 2. RCN price fluctuate periodically and different farmers get different price for the same product on the same day Why 1 : The price is determined by the collectors, because farmers do not have any information about the market and the dependence on local traders</p>	<p>No provision of market price information</p>	<p>Market Information services</p>	<ol style="list-style-type: none"> 1. Government doesn't have any effective or updated price information 	<p>4. Facilitate Collective selling through cooperative/association that provide market information and provide embeded service in Flores</p>	<ul style="list-style-type: none"> - Cooperatives - Farmer Association - Big company
<p>Why 2 : The bargaining power of farmers is low because of individual selling</p>	<p>Most of cooperative/farmer association don't offer collective selling system</p>	<p>Collective and farmer organizing services (Cooperative/association)</p>	<ol style="list-style-type: none"> 1. Cooperative / Farmer Groups / association only focus on saving - loan services and organizing farmers for production. They don't focus on selling commodities of their members. 2. Have no link with market/private sectors 		

<p>Why 3: Dependance on <i>Ijon</i> decreasing bargaining power of farmer Why 3a: farmers have lack capacity to manage their money Why 3b: Farmer don't earn enough money to save for year round expenses</p>	<p>Limited provision about financial literacy</p>	<p>Financial services</p>	<p>1. FI doesn't focus on cashew farmers 2. Limited capacity of bank's staff to assist the farmers about financial literacy.</p>	<p><i>Indirectly Addressed by the others interventions related to increasing productivity, price, and access to finnnace</i></p>	<ul style="list-style-type: none"> - Bank BRI - Bank NTT - Cooperatives
<p>Why 4 : Price fall during the rainy season because of deterioration of quality Why : Farmers don't have drying facility and depends on sun drying</p>	<p>There is no supply of drying facilities suitable for farmers.</p>	<p>Drying facilities</p>	<p>Expensive drying machine suitable only for the big processors.</p>		
<p>Why 5: High operational cost of traders</p>	<p>(transportation, warehousing, distance)</p>	<p>Land Infrastructure and transporation</p>	<p>1. Many road are damaged 2. Inaccessible roads to the farmers land 3. Sea transport vessels do not follow the schedule (especially on the island of Sumba)</p>		
<p>Problem 3. Traders are not being able to meet the market demand RCN (quantity, quality, continuity) Why 1 : Related in problem 1 Why 2 : Collectors and traders at local level more oriented about volume target than quality. Why : Many of RCN traders and exporter in NTT (Competitiveness)</p>					

<p>Why 3 : Quality of cashew is low Why 3a: Harvest too early, cause farmers need money for daily life</p>	<p>No Financial schemes that provide loan for cashew farming</p>	<p>Financial services</p>	<p>(1). FI doesn't focus on cashew farmers (2). Credit Disbursement take a long time (especially banks) (3). Requires guarantee / collateral and legality (4). Limited capacity of bank's staff to assist the farmers about business calculation and financial literacy</p>	<p>Addressed by Intervention 3</p>	<ul style="list-style-type: none"> - Bank BRI - Bank NTT - Cooperatives
<p>Why 3b: Lack of understanding and applying good post-harvest processes.</p>	<p>Limited provision of post harvest information</p>	<p>Information & Knowledge services</p>	<p>1. PPL focus on other crops 2. Limited number of PPL (PPL accompanying 2-3 villages) 3. Knowledge of PPL and key farmers (cadre) about better farming and post harvest practices are limited 4. No provision of information services by private sectors</p>	<p>Addressed by Intervention 2</p>	<ul style="list-style-type: none"> - PT. Nasa - PT. Nufarm - PT. Neemba? - Tk. Cinta Karya - Pintu Air Cooperative
<p>Why 3c: Farmers difficult to get dry cashew i Rain season</p>	<p>There is no supply of drying facilities suitable for farmers</p>	<p>Drying services</p>	<p>Expensive drying machine suitable only for the big processors</p>		
<p>Problem 4. Short supply of kernel for the processor/buyer (brown skin and white) Why1 : Low number of kernel producers (farmers) with limited capacity Why 1a: Most of farmers have no processing tools and capacity. Why 1b: Small numbers of female farmers groups that produce kernel lack capital and capacity to expand and suply year round.</p>	<p>Limited provision of tools technology, finance and market linkages for processing kernel</p>	<p>Tools/Technology extention services</p>	<p>1. No provision of processing technology, processing at the farm level over many manuals that are a challenge for mothers (primary producers processing kernels are women) 2. Limited of processing tools providers in NTT 3. Local input provider can't provide complite processing tools, only provide manual cracking tools 4. Dependance on government supported subsidized processing tools</p>	<p>5. To assist traders / inter island traders / national buyers and financial institutiob in developing local unit kernel processing at the farmers level in NTT.</p>	<ul style="list-style-type: none"> - Cooperatives - Farmer group/Association - Processing company - FI
<p>Financial services</p>	<p>There is no financial shceme for kernel production</p>				
<p>Market linkage services</p>	<p>There is no linkage with national buyer and any service regarding quality standart</p>				

Annex 2: People Interviewed

No	Name	Position	Address	Contact Number
1	Mr. Abdul Haid		PT DK Geliting, Maumere - Sikka	0823 4024 7590
2	Mr. Erlan	Owner	UD Makmur Geliting, Maumere - Sikka	0812 4651 1111
3	Mrs. Ludwina Lince	Administration Staff	UD Sakura Geliting, Maumere Kab. Sikka	Owner :Konsalis Madium 0813 8624 6897
4	Mr. Fernandus	Kabag Ekonomi Setdakab Sikka	Kantor Bupati Sikka	0813 3916 1296
5	Mrs. Maria Dafrosa Masi	Bendahara KWT Kembang Rosela	Napunglangir Kelurahan Wolomarang Kec. Alok Barat - Sikka	082359539872
6	Mrs. Maria Yosefa Sadipun	Sekretaris KWT Kembang Rosela	Napunglangir Kelurahan Wolomarang Kec. Alok Barat - Sikka	081339042866
7	Mrs. Maria Kasilda dkk	Anggota KWT Kembang Rosela	Napunglangir Kelurahan Wolomarang Kec. Alok Barat - Sikka	
8	Mrs. Erna Dela	PPL Kelurahan Wolomarang	Kec. Alok Barat Kab. Sikka	081338995015
9	Mrs. Agnes Wangi	Ketua Kelompok KWT Kembang Baru	Nangahle Bukit Kelurahan Wuring Kec. Alok Barat - Sikka	082144444426
10	Mr. Yos Dela	Kepala BP3K	Kelurahan Wuring Kec. Alok Barat - Sikka	085337125615
11	Mr. Antonius Kelen	Collector and Trader	Larantuka	

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12	Mr. Lazarus	Negotiator for Colective Selling at Duntana, Titehena	Desa Duntana Kec. Titehena Kab. East Flores	082145123469
13	Mr. Blasius Subawara Mukin	Head of Duntana Village	Desa Duntana Kec. Titehena – East Flores	
14	1. Mrs. Theresia W Mulim 2. Mrs. Hasna Loin 3. Mrs. Monika Bunga Hera 4. Mrs. Monce Maran 5. Mrs. Siska 6. Mrs. Yeni Hayon 7. Mrs. Agustina K Hayon	Women farmers at Duntana village	Desa Duntana Kec. Titehena East Flores	
15	Mr. Dion Werang	Negotiator for Colective Selling at Tenahawang, Titehena	Desa TenahawangKec. TitehenaKab. Flotim	
16	Mr. Marcel	Ketua Asosiasi Tani Talaia	Desa Tenahawang Kec. Titehena - Flotim	
17	Mr. Yos Dollu	Camat Kota Larantuka Ex-camat Ilebura,	Larantuka, Flores Timur	082145150002
18	Mr. Florentinus Lewar & Mrs. Margareth	Local cashew processor (kernel)	Desa Lamika Kec. Demon Pagong Kab. Flores Timur	082147989366
19	Mrs. Hamzah	Sekretaris Badan Ketahanan Pangan Flotim	Larantuka, Flores Timur	
20	Mrs. Evi Nange	Kepala Kantor Penanaman Modal dan Pelayanan Perizinan Terpadu Kab. Flotim	Larantuka, Flores Timur	
21	Mr. Pak Yarisadi	Kasi P2HP Dinas Perkebunan dan Kehutanan, Flotim	Larantuka, Flores Timur	081337286606
22	Mr. Theo	Kepala Bappeda Kab. Flores Timur	Larantuka, Flores Timur	
23	Mrs. Siska	Kabid Ekonomi Bappeda Flotim	Larantuka, Flores Timur	081339119916

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24	Mr. Daniel Klakik	Petugas Wilayah Kerja Terong dan Waiwerang Pelabuhan Larantuka	Pelabuhan Larantuka, Flores Timur	
25	Mr. Martinus S Balun	Petugas Faspel dan Ketertiban Pelabuhan Larantuka	Pelabuhan Larantuka, Flores Timur	081337432609
26	Mr. Gabriel	Ketua Kelompok Mete Organik Flotim	Ilepadung Flores Timur	08127000670
27	Mr. Manda	Kabid Dinas Pertanian Kabupaten Sikka	Maumere, Sikka	081334706561
28	Owner UD Dirgahayu	Owner	Jl. Moatoda No 15 Maumere, Sikka	0382-21442
29	Mr. Joshua	Bagian Pengadaan Barang Toko Ramayana Kupang	Kupang	081328049544 08113957773
30	Mrs. Deni	Bagian Buyer Toko Hypermart Kupang	Kupang	081314485068
31	Mr. Kholiq Yakini	Asisten Direktur Eksekutif Bidang Program dan Business Development Center-KADIN Jatim	Jl. Bukit Darmo Raya 1, Graha Famili Surabaya	031 7349231 08563041999
32	Mr. Herwin Oetomo (Trader)	Owner	UD Timur Indah Songoyudan 86, Surabaya	031 3520642 0818502648
33	Mr. Budi (Trader)	Owner	Toko Berkat JayaPasar Pabean Stand A-1Surabaya	031 3526286 081357887456
34	Mr. Nanang Wirjanto Limantoro (Trader/Cashew Agent)	Owner	Songoyudan 75, Surabaya	031 3533258 08123138627
35	Mr. Antonius SE (Exporter)	Marketing Executive	CV Kota Makmur JL. Nyamplungan No. 35 Surabaya	031 3532230 08123268689 koja1969@gmail.com
36	Mr. Wahyu Sulistiyo (Saprotan)		PT Petrosida Gresik Kantor: KIG Raya Utara Blok O No 5, Gresik Pabrik: Jl. Jend. Ahmad Yani, Gresik 61118	081334488325 031 3985594 pestisida@rad.net.id

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37	Mr. Arianto Winardi	District trader	Waingapu – East Sumba	(0387) 62766 081331040000
38	Edwin Untino (Tirta Berlian)	District trader	Waingapu – East Sumba	(0387) 61053 081357351111
39	Mr. Umbu Ndilu Hamandika	Farmer and also as collector	Hanggaruru village, Rindi – East Sumba	
40	Mr. Gunawan Budiharjo/ Mr. Hakim	GM of PT. Nasa	Yogyakarta	08122732458 08112792001
41	Mr. Yohanes V Roma	Head of BPK Nita	Nita - Sikka	081339255962
42	Mr. Hengki B. Sali	Kepala Dinas Pertanian dan Perkebunan Sikka	Sikka	081334706561 (Manda)
43	Mr. Mustakim	Bendahara KSOP	Sikka	081339601597
44	Mr. Daniel Dan	Seed Suplyer	Jl. Litbang, Sikka	081237541428
45	Iwan Bapa	Staf PT. Meratus	Sikka	081227010757
46	Mr. Udin	Staf PT. Rocimena	Sikka	0382-21338
47	Mr. Rudi	Staf of PT. Dharma Lautan Utama	Jl. Nong Meak no. 30, Sikka	0382-21762
48	Mrs. Gaudensia Parera	Director of UD Sinay	Sikka	081339122222
49	Mr. Nixon	Manager of UD. Nusa Permai	Ende	
50	Mr. Yosef Misa	Cashew Farmers	Ende	
51	Mr. Sius	Collector	Magepanda, Sikka	
52	Miss Diah	Staf of Agriculture Ministry (Kemenpan)	Ragunan, Jakarta	
53	Mrs. Tuti	Kasubbid Budidaya Tanaman Tahunan - Kemenpan	Ragunan, Jakarta	0818777486
54	Mrs. Tri Sunar Pra setyanti	Kasubbid Teknologi Pasca Panen Tanaman Tahunan - Kemenpan	Ragunan, Jakarta	08158832577
55	Mrs. Anik	Staf of UD. Pasar Jaya	Pasar	081330651749
56	Mr. Gabriel	Manager of Pelita Cooperative	Ile Padung, East Flores	
57	Mr. Bernadus Blawakoten	Head of BP3K Lewolema	Lewolema, East Flores	082144439398
58	Mr. Yakob	Kabid Perkebunan	Belu	081339426771
59	Mr. Adolf W Bule	Cashew Farmer	Bondo Kodi, SBD	
60	Mrs. Ribka R Palu	Cashew Farmer	Bondo Kodi, SBD	
61	Alexander Rusli	Owner of UD. Fajar	Geliting, Sikka	

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62	Boy	Bagian Kredit – Bank NTT	Kupang	
63	Soelaiman	Bagian Kredit – Bank BRI	Kupang	
64	Christo Komala	Manager toko Cinta karya (Distributor pestiside)	East Sumba	0387 62711
65	Elton Dona	Distributor seeding	East Sumba	'085239314174
66	Victhor Agustinus Benyamin	Manager – Bank Danamon	East Sumba	'085237820110
67	Patrix	Unit simpan pinjam – Bank NTT	East Sumba	

Annex 3: Investigation Team

NO	Names	Organization	Function
1	Diana Margareth Johannis	WVI	Project Manager
2	Berwaddin Ibrani Simbolon	WVI	Intervention Coordinator
3	Paulus Moka	WVI	Field Coordinator
4	Abner Radanni Sembong	WVI	Monitoring and Evaluation
5	Setijanti Purwengtyas	WVI	Market Development Specialist
6	Etih Suryatin	YSC	Local Consultant