

SECTOR REPORT

Coffee in East Java and Flores Island

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VECO Indonesia

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1 Executive Summary

Coffee is an important global commodity with significant value-addition and export potential for producing countries. Production is dominated by a small number of Asian and Latin American countries, mostly producing the Arabica variety. Global demand is growing for sustainably produced high quality (certified) coffee, and the increase in quality standardization in the industry has increased the compliance requirements for producers to produce certifiable coffees. Indonesia is a major coffee producer and exporter with specialty coffees produced regionally. The Indonesian coffee sector is dominated by decentralized production by small-holder producers, with high levels of low quality decentralized processing, often occurring at the farm level. In recent years, the number of coffee (particularly Robusta) farms in Indonesia has been declining due to conversion to other cash crops.

East Java Province (Lumajang, Malang) and Flores Island-East Nusa Tenggara Province (Ngada, Manggarai, Manggarai Timur, Ende) are known as high quality coffee producing areas. Coffee producers in East Java and Flores experience low productivity compared to their potential. Many small-holder farmers cannot meet traders' requirements for quantity and quality. Few small-holder farmers use improved agro-inputs. The system of individual processing is hindering quality for specialty coffee in East Java and Flores. Generally, the market can be characterized with a number of features: government extension efforts to improve coffee growing have not proved to be sustainable; sub-optimal GAP services; limited access of farmers to post-harvest technologies and information; limited small-holder access to formal financial services; poor transportation services, particularly in Flores; and, lack of coordination in government policy related to supporting the coffee sector.

The **key problems in the coffee sector in East Java and Flores** include: the quality of coffee does not meet the required buyer standards; improved processing facilities are often located centrally and far from the coffee growing areas; farmers often have little choice but to follow traditional methods of cultivation; farmers are not willing to take the risk to invest in improved inputs; farmers have limited access to financial institutions; a general lack of knowledge on both production and full management of processing; and, poor access to service providers of improved agro-inputs and production technologies. In this the **key services identified which can be strengthened to impact positively upon the local market system** include: agro-input retailing; GAP technical support and post-harvest services; business brokering (demand aggregation); financial services; product and sector branding; and, quality assurance (QA) services.

A vision of change is outlined for the sector and service levels. At the sector level **the vision is to realize increased productivity and higher production levels which can be sold as a high-quality coffee to meet rising global demands**. At the service level, there are a range of sustainable services which are envisioned, including: (1) Agro-input retailing through ICCRI Franchises; (2) GAP technical support services through ICCRI Franchises; (3) Post-harvest processing services through cooperative-run processing units; (4) Business brokering (demand aggregation); (5) Financial services through private FSPs; (6) Branding through PPP (Brand Forum); and, (7) Quality Assurance (QA) PPP (Brand Forum). It is estimated that through the successful implementation of interventions to increase productivity in the existing target areas, the potential new production from existing areas could reach 16,683MT in Flores and 20,603MT in East Java - unlocking a **potential market of over AUD 12M in Flores and AUD15M in East Java**.

The report recommends five inter-related interventions to achieve the vision of change. These comprise:

1. **Develop ICCRI Franchise to be implemented by Coffee Cooperatives.**
2. **Develop decentralized processing facilities for high quality coffee through Cooperatives.**
3. **Build forums for coffee sector development.**
4. **Advocate for government policies promoting a system for coffee quality standardization.**
5. **Develop business financing products that fit the needs of coffee farmers.**

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2 Background

AusAID has been a key player in supporting development activities in Indonesia. The Australia Indonesia Partnership for Decentralization-Rural aims to increase rural incomes in 5 provinces of Eastern Indonesia. Under this framework it has tendered a new project. The goal of Australia Indonesia Partnership for Promoting Rural Income through Support for Markets in Agriculture AIP - PRISMA is to contribute to a 30%, or more, increase in net incomes for 1,000,000 poor rural female and male farmers, 300,000 of which will be reached by June 2017.

To enable a quicker start for the new project by identifying potential partners, building up their capacity to take on the role of market facilitators AIP-Rural commissioned Swisscontact – the Swiss Foundation for Technical Cooperation – to implement a small project called IMDI (Introducing Market Development in Indonesia) from October 2012 till 31 March 2014. The coffee sector was selected because the sector is the one of the main income source of farmers in Indonesia such as in Flores of Nusa Tenggara Timur (NTT) Province, Lumajang and Malang Districts of East Java Province.

This Sector Report on the coffee sector in East Java and Flores has been produced by VECO Indonesia through IMDI. The document is not intended as a comprehensive sector report; rather it is to provide a logic and rationale for market-based interventions which can support the coffee sector to the benefit of small-holder producers. The report is the result of a learning process by which NGOs were mentored by Swisscontact to develop their capacity for engaging in wider market-oriented programming in specific agricultural sectors. Certain interventions identified in this report will be commissioned for implementation under the IMDI initiative.

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3 Sector Profile

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

3.1 International Context

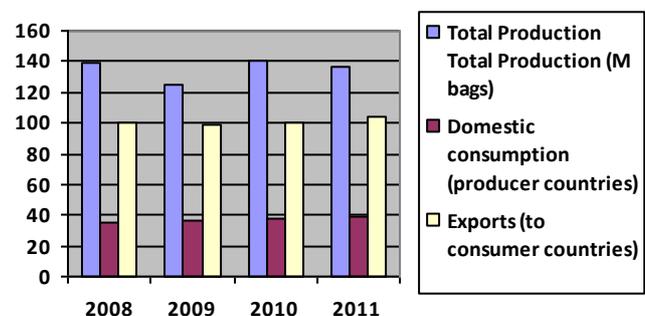
3.1.1 Coffee is an important global commodity with significant value-addition and export potential for producing countries.

Coffee is a globally traded commodity. In 2011, the total world coffee production reached over 136M bags of green beans or equivalent to 8.2M metric tonnes (MT), valued at approximately 3.8Bn USD¹. While the estimated total value of processed coffee products (roasted coffee, ground coffee, instant coffee, canned coffee, etc.) is 16.5Bn USD. Only around 30% of the total world coffee production is consumed in producing countries, with some 70% imported by consuming countries². The total world coffee production has remained relatively constant in recent years though the total domestic consumption in the producing countries has increased significantly.

3.1.2 Production is dominated by a small number of Asian and Latin American countries, mostly producing the Arabica variety

85% of the world coffee comes from the 10 largest producing countries³. In 2011, the world leading producer countries of coffee were Brazil (33.1%), Vietnam (17.8%), and Indonesia (6.8%) and Colombia (6.1%). These four countries contributed more than 60% to the total world coffee production. The world production of coffee is 62.5% and 37.5% for Arabica and Robusta varieties respectively. Arabica coffee is mostly produced in Central America and South America, particularly Brazil and Colombia, while Robusta is mostly produced in Asia and the Pacific region, particularly Vietnam and Indonesia⁴. According to ICO, Indonesian coffee (Robusta and Arabica) production in 2010/ 2011 contributed 9.13 million bags (547.8 MT).

Figure 1: Global coffee production (Million bags)



3.1.3 While global demand is growing for sustainably produced high quality (certified) coffee in Asia the trend is towards instant coffee products

Globally, most coffee is consumed in the form of roasted coffee and ground coffee. The global consumption of coffee is relatively stagnant and only grows 1.6 % every year since 2008⁵ (see table 1 above). Global trends are demanding higher quality and sustainability standards such as environmental protection and fair-trade. In 2010, coffees with

¹ LMC International (2013)

² LMC International (2013), ICO (2012).

³ ICO (2012).

⁴ LMC International (2013), Directorate General for Estate-Crop (2012).

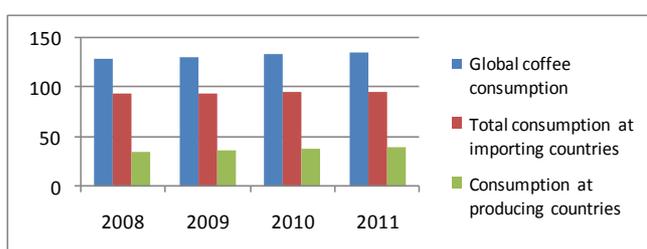
⁵ LMC International (2013), Directorate General for Estate-Crop (2012).

certifications constituted 8% of the total market, and this is expected to reach 20% by 2015⁶. Despite this trend, instant coffee consumption has continued to increase particularly in Eastern Europe, East Asia and South Asia. In the Philippines and Thailand instant coffee consumption comprises around 95% of the total coffee consumption. In East Asia and Southeast Asia instant coffee products such as 3 in 1 are very popular.⁷

3.1.4 The increase in quality standardization in the industry has increased the compliance requirements for producers to produce certifiable coffees

Coffee quality standards are authorized by international certification bodies such as the Rainforest Alliance (RA), UTZ Common Code for Coffee Community (4C), Fair trade and Fair for Life, Control Union, IMO, CAFE Practices (Starbucks) and Nestle. Large buyers are driving demand for certified coffees. Nestle has announced its intention to procure an additional 90,000 MT of Rainforest Alliance certified coffee by 2020. Sara Lee will purchase at least 350,000 MT of UTZ certified coffee by 2016. Certain prerequisites are required of producers to meet with these requirements such as applying good agriculture practices (GAP), good post-harvest practices (GPP) and good manufacturing practices (GMP).

Figure 2: Global Consumption in Million bags

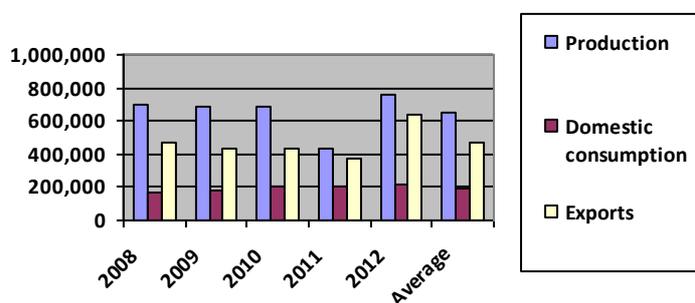


3.2 National Context

3.2.1 Indonesia is a major coffee producer and exporter with specialty coffees produced regionally.

Indonesia is the third largest coffee producer after Brazil and Vietnam, producing approximately 680,000MT annually or the equivalent of 11.3M bags of green coffee, from about 1.2M ha farms. Indonesia produces different kind of unique single origin Arabica specialty coffees include Gayo coffee, Java coffee, Toraja coffee, Lintang coffee, Flores Bajawa coffee, as well as Robusta fine coffees including Java Robusta WIB and Flores Robusta. The domestic consumption is low at only about 200,000 MT, or 3.3M bags of green coffee per year. Indonesian exports around 70% of its coffee production, in the form of both green beans and roasted coffee. Surpluses of around 450,000MT or approximately 7.5M bags of green coffee are exported annually, mainly to Germany, the USA, Japan and Italy.⁸ From the total export around 25-30 % consisted of Arabica which was sold as a high quality coffee

Figure 3. Production, domestic consumption and export of Indonesian Coffee 2008-2012 (MT)



⁶ USDA, Coffee Annual, Indonesia:

http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Coffee%20Annual_Jakarta_Indonesia_5-15-2013.pdf

⁷ Coffee "3 in 1" usually is packed in the form of small one-time brew packs (sachets) with a mixture of sugar and milk or non-dairy creamer to make preparation easier.

⁸ Directorate General for Estate Crops (2012).

(specialty coffee).⁹

3.2.2 In recent years, the number of coffee (particularly Robusta) farms in Indonesia has been declining due to conversion to other cash crops

While total production has remained stable, in the last five years the total area of coffee farms has declined by about 2.6%. There are less farms now producing Robusta coffee¹⁰, particularly in Southern Sumatra and East Java. In southern Sumatra coffee growing areas are being converted to other crops, such as palm oil, rubber, and cocoa. In East Java coffee production is often converted into sugarcane, vegetables, and timber trees. Farmers are converting coffee into other crops due to the instability of coffee prices, and the higher productivity of other crops (Robusta coffee can be harvested only once a year). However, the total area and production volumes are increasing for Arabica coffee. Arabica coffee has the advantage that Arabica beans can be stored without reducing quality.

3.2.3 The Indonesian coffee sector is dominated by decentralized production by small-holder producers

The majority of coffee producers, some 94%, in Indonesia are small-holders. The government and private estates manage only around 6% of the total production area. It is estimated that there are approximately 1.9M small-holder households growing coffee (2010)¹¹. Most of the coffee in Indonesia grows in intercropping farming systems with other crops. The crops function as shade trees for coffee and provide better micro climates. In some regions farmers are practicing coffee integrated farming with livestock so that the manure can be used to produce organic fertilizer.

3.2.4 Currently processing is also highly decentralized, often occurring at the farm level and leading to lower quality

Robusta and Arabica can be processed through two systems, process in dry and wet systems. Coffee which has been processed using a wet system results in better quality coffee, and fetches better prices¹². Almost 80% of farmers in Indonesia still use the dry-processing method as the traditional practice. Beans are dried under the sun, and often small-holder farmers are not able to provide supply that meets with export requirements (quality and quantity). Wet processing is a relatively simple technology though producers require technical support to manage and maintain this processing technique. Farmers are often not able to provide supply that meet with export requirements (both quality and quantity).

3.3 East Java and Flores

3.3.1 East Java Province (Lumajang, Malang) and Flores-East Nusa Tenggara Province (Ngada, Manggarai, Manggarai Timur, Ende) are high quality producing areas.

East Java and NTT are recognized as high quality producers for Robusta and Arabica varieties respectively. Coffee is an important commodity in the provinces of East Java and East Nusa Tenggara (NTT). East Java coffee is well known as the best quality producer for Robusta WIB coffee, especially Java Robusta AP from Dampit (South of Malang) and Java

⁹ Data 2008-2010: Directorate General for Estate Crops (2012); LMC International (2013); Data 2011-2012 compiled from http://www.ico.org/new_historical.asp?section=Statistics;

¹⁰ Directorate General of Estate Crops (2012).

¹¹ Directorate General of Estate Crops (2012).

¹² For instance Arabica-wet processed coffee can get a 5-10% higher price compared with dry processed/poor quality. Usually the Arabica-dry processed coffee is priced 30% lower than the terminal market prices of New York (ICE).

coffee named after coffee produced by large plantation companies¹³. Flores is one of the producers of high quality Arabica coffee, in the market the coffee is well known as Flores Coffee (Kopi Flores). The main production areas of Flores Coffee are in Ngada and the neighboring districts such as Manggarai, East Manggarai and Ende. These districts produce about 32 % of total coffee volume of NTT Province.¹⁴ Coffee growers in these provinces are reported to be 133,653 families in a total area of 90,242 ha and 91,593 families (63,412 ha). The total coffee production area of East Java is equivalent to 8.1% and NTT Province 5.7% to the total national coffee area.¹⁵

3.3.2 Coffee producers in East Java and Flores experience low productivity compared to their potential

The productivity of coffee in Flores and East Java (Malang and Lumajang districts) remains sub-optimal. Flores' productivity is only 310 kg GBE/kg¹⁶, well below the national average (570 kg GBE/ha); while Malang district is above this level (790 GBE/ha) the potential production of coffee in both Flores and East Java can reach more than 1MT GBE/ha. Despite efforts of the local government to implement programs to improve farm productivity, such as Integrated Pest Management Farmer Field Schools (FFS-IPM), farmers generally have limited access to training and information on good farming practices. Farmers often lack skills on farm management which has contributed to low productivity and quality of the coffee beans.

4 Sector Dynamics

The sector dynamics provide information on how the sector functions and operates; this information has been derived from both literature and engagement with market actors relevant to the sector.

4.1 Market Map

The coffee bean supply chain starts from the farmers (the bean producers), then sold to local traders in the village, next to large traders at sub-district / district level and finally to the warehouses of exporting companies. Some farmers also sell coffee directly to the merchant at the sub-district/district, especially farmers producing larger quantities. The coffee supply chain of Ngada and the surrounding districts is relatively long. Coffee from these regions needs to be transported to Surabaya-East Java and export takes place from the Surabaya port. In this case individual farmers do not sell their coffee directly to exporters. In Flores there are some groups of coffee farmers who operate shorter supply chains. These groups have direct cooperation with the exporter (PT. Indokom). The groups have established 15 farmer milling units (FMU) to produce specialty coffee and sell to PT. Indokom (the exporter). The development of this business partnership with the exporter is slow and limited to small groups only (30 farmers for one FMU); the supply is approximately 200MT GBE per year.

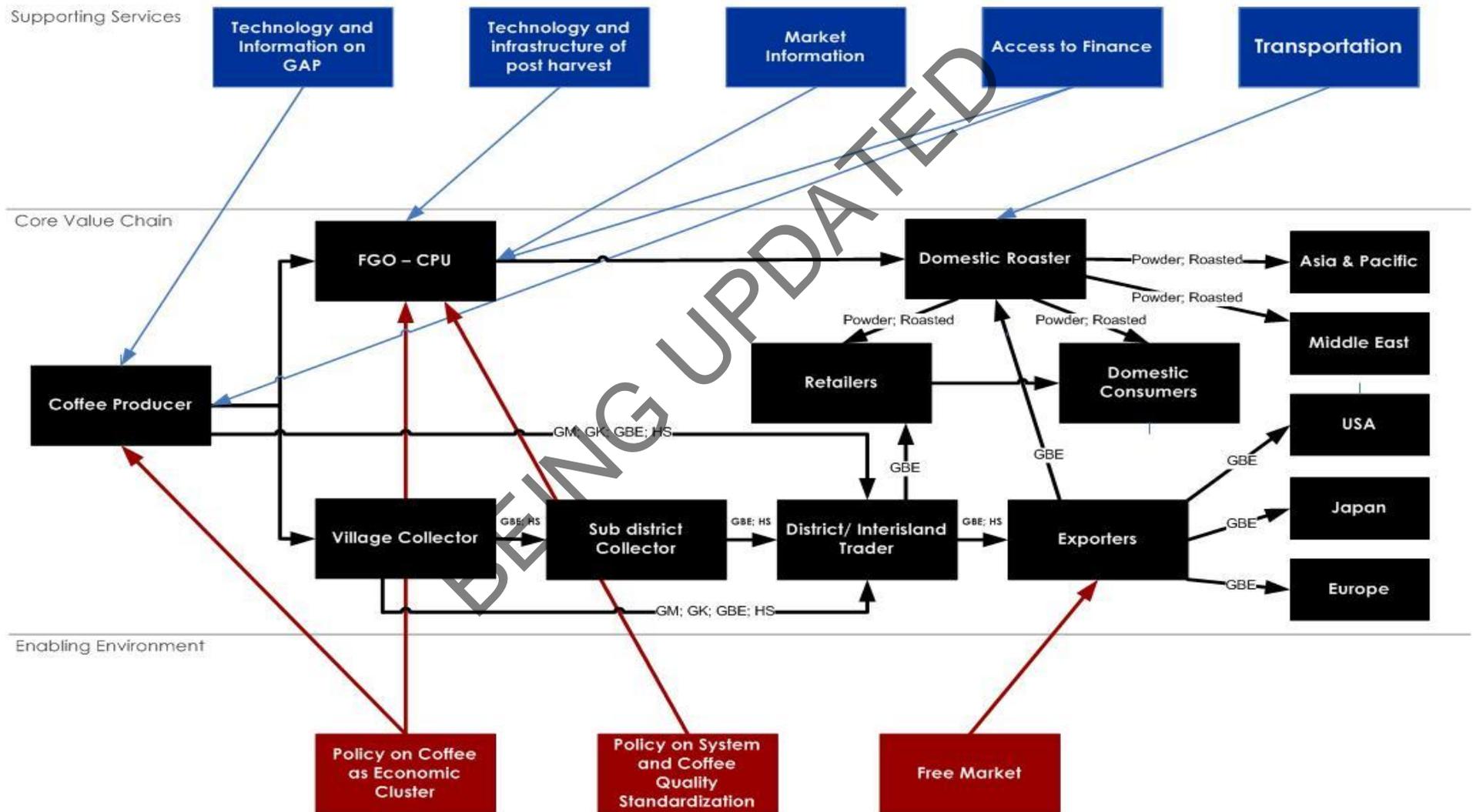
¹³ The main coffee production areas of East Java are located on the mountain slopes of Mount Kawi - Mount Semeru - Mount Bromo - Mount Argopuro. Administratively these regions are in districts of Malang, Pasuruan, Lumajang, and Probolinggo, respectively. In East Nusa Tenggara, the main coffee areas are on the island of Flores, covering the mountain ranges from west to east i.e. Poco Ranaka Mount - Mount Inerie - Mount Abulobo - Mount Kelimutu. The regions are in the districts Manggarai, East Manggarai, Ngada, and Ende, respectively.

¹⁴ Directorate General for Estate Crops (2012).

¹⁵ AEKI (2010), Directorate General for Estate Crops (2012).

¹⁶ Directorate General for Estate Crops (2012).

Market Map Coffee



4.2 Core Value Chain

4.2.1 Many small-holder farmers cannot meet traders' requirements for quantity and quality

At present small-holder farmers are not able to provide a coffee supply that meets with export quality and quantity requirements. Arabica Bajawa Flores has been accepted and preferred as specialty coffee in the U.S. market, but the supply of Bajawa coffee is still limited. Low sourcing of companies is due to coffee beans do not yet meet buyer requirements. Although there is the potential for increased production (7,304 MT GBE/year for Robusta and 3,818 MT GBE/year of Arabica in Flores) whereas in Malang and Lumajang districts production can reach 13,220 MT GBE/year for Robusta and 533 MT GBE/year for Arabica¹⁷. A single company, Indokom, has a demand of 1,000MT (approx.) of high quality Arabica from Flores every year, but the Flores suppliers (Farmers Group Processing Units in Bajawa-Flores) can supply only 200MT.

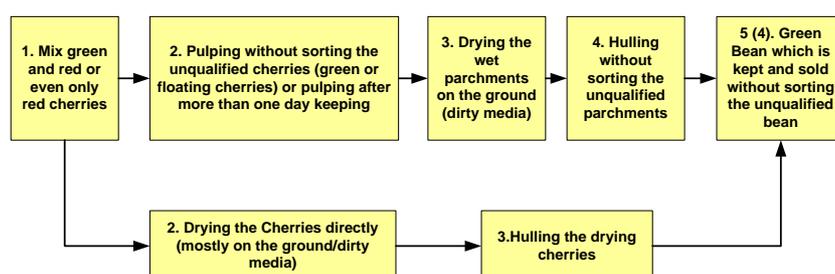
4.2.2 Few small-holder farmers use improved agro-inputs

The most important inputs for coffee production are high-yielding planting materials and fertilizers. In Indonesia, ICCRI-Jember is the main supplier of coffee seeds (90% of the national market). Farmers receive seeds from ICCRI through central and local government programs. However, the number of farmers who have access to the superior coffee planting materials is still very limited, and often this is dependent on government programs. Farmers are aware that fertilizers have a very important role in increasing the productivity of coffee though fertilizer availability is often limited. Currently less than 10 % of farmers are applying GAP such as superior clones, fertilizers and material for pest-diseases control.

4.2.3 The system of individual processing is hindering quality for specialty coffee in East Java and Flores

Most farmers still use traditional methods for harvesting and processing. There are two methods usually applied in coffee processing. In the first method farmers mix green/ red cherries and dry without pulping and hulling or breaking the skin with traditional tools before selling in green bean form (dry method). In the second method, the mixed green/red cherries harvested are pulped after several days, dried and hulled to produce green beans. Often no sorting is undertaken at this stage which results in lesser quality coffee (wet method with poor quality standardization). The mentioned described are generally not accepted by high quality coffee buyers. The flow of traditional coffee processing methods is described in Figure 4.

Figure 4. Traditional Coffee Processing Flow



4.3 Supporting Functions

4.3.1 Government extension efforts to improve coffee growing have not proved to be sustainable

Pests and diseases associated with coffee are mainly dominated by the coffee fruit powder (berry borer), parasitic nematodes and root diseases. Pest and disease control efforts using

¹⁷ Directorate General for Estate Crops (2012).

integrated coffee pest management (IPM) have been implemented through the Farmer Field School (FFS) approach, but the results have not been sustainable and many farmers were dissatisfied. The FFS was implemented as a pilot project and did not continue after the project funding finished. Moreover in Flores the related services and its providers do not exist locally, and typically trainers and FFS facilitators would travel from Java.

4.3.2 GAP services are not optimal

Currently, GAP services available to farmers are not optimal and insufficient to increase productivity and quality. Important service providers of GAP in coffee sector development in Indonesia are ICCRI, IAARD, government extension agents, consultants/ experts of NGOs. However there is a lack of sustainable service providers at the local level that can work close to farmers and provide assistance to farmers intensively. Although private companies operate engage with small-holders (through groups and associations) generally these private companies do not provide embedded technical services in addition to sourcing the coffee.

4.3.3 Farmers have limited access to post-harvest technologies and information

Post harvest technologies and information services are similar to GAP as they are generally inaccessible and ad-hoc in nature. Sub-optimal methods used for coffee processing is a major cause of poor quality coffee produced by small-holders in Flores and East Java as farmers lack the capacity to produce high quality coffee. Service providers such ICCRI, IAARD, government extension agents, SCAI are all based Java, therefore farmers find it difficult to approach them. In some cases government and NGOs help farmers to engage with the experts, though these services often are not sustained because of the short term nature of the projects.

4.3.4 Access to formal financial services remains limited

Farmers are borrowing money for harvesting and processing costs – spend mostly on labour costs. Generally they access credits from local money-lenders with very high rates of interest (up to 20%/ month). Although banks such as BRI, BNI, and Mandiri have branches locally, access to formal FSPs remains limited, due to lack of collateral on the part of the farmers preventing access to loans. Some government banks such as NTT Bank and Jatim Bank operate locally and offer small-holder financing. Yet these products are not widely accessed by farmers due to the bureaucratic process of obtaining the loans, lack of information on available schemes and low trust of banks in providing loans to small-holder coffee farmers.

4.3.5 Transportation services are poor, particularly in Flores

On Flores Island, transportation is a major problem for coffee farmers. Coffee (cherry) needs to be transported quickly to processing units. Public transportation to the villages (coffee areas) is very limited; typically only one mini bus (truck) passes the village in a day. This reduces the ability of coffee suppliers to meet timely orders and, as over fermentation occurs after more than 72 hours, reduces quality due to late delivery.¹⁸

¹⁸ Wintgens, J.N., 2004. Coffee: Growing, Processing, sustainable production (pp:639-641).

4.4 Supporting Rules and Regulations

4.4.1 Government policy has prioritized coffee as an economic cluster yet support to the sector has not been coordinated well

In some areas, including Flores (Ngada, Manggarai, etc.) and East Java (Malang, Lumajang) coffee is designated as the main agriculture commodity in the area. However, government policies do not effectively support farmers to develop their coffee business. Some policies are working against private sector investments and to develop business cooperation with coffee producers (farmers/farmer organizations). Moreover, government policies are not promoting service providers to work close with farmers because of the unclear role of services providers and weak incentive provided by the government.

5 Analysis

5.1 Problems and Underlying Causes

The problems and underlying causes are specific to the target groups the initiative seeks to support through interventions in the market system. This analysis is informed by the profile and dynamics above and generated through the Intervention Logic Analysis (ILA) tool.

5.1.1 Quality of coffee does not meet the required standards.

Farmers cannot meet the quality requirements because of the absence of post harvesting facilities, proper handling skills and an adequate processing unit that qualifies for producing high quality coffee. This presents a missed opportunity as the market for high quality (specialty coffee) products is growing. Developing a better quality product will enable small-holders to access these higher value markets. This is reflected in current prices realised by local coffee producers, in 2012 Flores coffee farmers were realising IDR 26.000/kg for unsorted coffee (poor quality coffee), while a private company (PT Indokom) was offering a price of IDR 35.500/ kg to IDR 44.375/ kg GBE for higher quality specialty coffee.

5.1.2 Currently the processing facilities (that do proper full processing) are centralized and far from the coffee growing areas.

Standardising the way farmers practice coffee processing is a key factor in producing quality specialty coffee. However the current practice of farmers is to process the coffee individually using simple pulping and poor post-harvest treatment and also a poor handling mechanism. These practices are resulting in low quality coffee beans. Higher quality processing facilities are generally located too far from small-holders and are used primarily by larger farming operations. Decentralized processing of coffee will allow farmers to standardize the flow of production of coffee beans (from cherry to parchment) and enable them to produce high quality beans (specialty coffee).

5.1.3 Farmers have little choice but to follow traditional methods of cultivation.

Farmers conduct farming employing traditional methods. Productivity is very low amongst many small-holder farmers, for example the average productivity of Arabica coffee farms in Flores was observed to be only around 300 kg/ ha for unsorted green coffee. Farmers do not manage coffee plantations well and tend to allow them grow naturally. Implementation of good agricultural practices, especially fertilizer application, pruning, development of superior clones, pest and disease control are infrequently applied.

5.1.4 Farmers are not willing to take the risk to invest in improved inputs.

Although there is some access to improved inputs, generally farmers do not want to invest in additional agriculture inputs as they are not sure of the returns they would receive for this investment. This perception is often based on poor analysis of the economic value of coffee as well as considerations related to sustainability of local agro-ecosystems. Farmers lack access to information to inform judgments regarding the business potential of investing in the means to cultivate a higher quality product.

5.1.5 Farmers have limited access to financial institutions.

Without working capital, farmers and cooperatives will not be able to produce good quality coffee and continuous supply to markets. The farmer cooperative needs cash to purchase cherries from the members/producers and to run the processing unit (labor, transportation cost, etc.). Many farmers do not understand the banking services offer that can be accessed, informal SMEs are generally not bankable (not eligible to borrow) because they do not have sufficient collateral and the monthly payments schedules are unsuitable for a revenue stream based upon seasonal harvests. Other financial facilities like credit unions (CUs), money lenders have different rules for loans, though are also often inaccessible or unsuitable for small-holders. Only CU members can access credit, while for money lenders loans can be quickly accessed by farmers but they often entail very high interest rates.

5.1.6 There is a general lack of knowledge on both production and full management of processing.

Low proficiency of knowledge and technology on coffee farming especially on Good Agricultural Practices (GAP) (organic fertilising, pest control, productive clones), Good Post Harvest Practices (GPP) and good manufacturing practices (GMP) are main constraints in achieving high productivity and premium quality green coffee. The effect of this missing knowledge and skills is that farmers' business is not competitive and access to global markets is limited.

5.1.7 Poor access to service providers of improved agro-inputs and production technologies embedded with agronomic practices.

For small-holders farmers these are obstacles related to achieving good farm management to increase farm productivity. Prices for agriculture inputs such as fertilizers, pesticides and equipment are regularly on the rise. Soil fertility of coffee farms often decreases because of lack of returning nutrients after the cherries are harvested. Local service providers of improved agro-inputs and production technologies can support the improvement of farm management practices through increasing access to the technologies and providing 'embedded' technical services on the best application of these technologies. However, in the target areas small-holders lack reliable access to such service providers.

5.2 Services, Enabling Environment and Weaknesses Analysis

The supporting functions (also known as the services, or supporting services) and rules and regulations (also known as the enabling environment), and weaknesses are developed through analysis of the information derived from above and comprise the next steps of the ILA tool. These identify the key areas in which the initiative can target interventions.

5.2.1 Agro-input retailing

There are retailers who sell agricultural equipment such as coffee pulping machines, pruning shears, grafting knives, and others, though the numbers are limited and generally only available in district towns. Beyond the physical access to these technologies, demand in

village areas for these tools also remains limited as there is little promotion undertaken by retailers. Some agro-inputs are not available at all. There are no retailers that sell superior coffee clones or seeds to improve coffee productivity.

5.2.2 GAP technical support and post-harvest services

Only around 10% of farmers¹⁹ apply some sort of GAP both in Flores and East Java. The main reasons that farmers do not apply GAP are that there are no continuous services provided to promote GAP practices. Government and NGOs provided their services based on a project-based approach. This has proven insufficient to alter the practices of small-holders. In post-harvest, technologies in both Flores and East Java are often provided by local NGOs and government in cooperation with ICCRI Jember. Most coffee growers apply simple/ traditional post-harvest and processing techniques. There is no standardized process for high quality coffee used by the farmers for post-harvest coffee processing. The current practices result in poor quality coffee produced by farmers.

5.2.3 Business brokering (demand aggregation)

Although groups of farmers are starting to sell coffee collectively through farmer cooperatives or organized groups, generally farmers hold a weak bargaining position when trading with larger enterprises. Currently farmer groups sell beans to inter-island traders or middlemen. As quality is low, farmers have difficulties to sell the beans to exporters. These groups also suffer from low working capital and poor storage facilities which lower their ability to purchase sufficient volume (aggregate demand) from coffee growers to attract larger traders and strengthen their negotiating position.

5.2.4 Financial services

Service providers that facilitate the development of business financing models that fit the needs of coffee farmers do not exist locally to serve small-holders. Many coffee farmers are unable to access formal finance due to concerns from the banks that coffee farmers are not able to repay loans, alongside administrative and bureaucratic obstacles. There are also few loan models that fit the requirements of farmers (who have a seasonal income rather than monthly). Informal producer groups have limited access to financial services with a reasonable interest rate to support their business. Although it is relatively easy to get a loan from moneylenders but the interest pretty very high (up 20% per month) impacting upon profit margins for farmers' business.

5.2.5 Branding

Presently, coffee from Malang, Lumajang and Flores is being promoted in the domestic and global market. However the branding of this coffee is not very strong. People are more familiar with coffee Toraja, Gayo coffee rather than coffee Flores and Malang. This is caused by the lack of policy support for coffee as an economic cluster in the district / region. The potential for introducing coffees from Malang, Lumajang and Flores as a single origin coffee is a good opportunity to be branded as unique quality coffee in global markets. However, there are no industry or government bodies supporting the branding and marketing of coffees in the wider market.

5.2.6 Quality Assurance

The quality assurance (QA) system for coffee at the farm level is not well developed. Farmers in the target areas are missing this skill, as they do not have standard operating procedures (SOP) on producing high quality coffee. Coffee quality standards can be introduced by external agencies but scale remains a problem. Trainings on internal control

¹⁹ Estimate based upon field research conducted by VECO in East Java and Flores.

systems (ICS) and certification have been provided to farmers by institutions such as UTZ, Rain Forest Alliance, IMO, and Control Union, yet these trainings have been limited in scale and cover only small groups of coffee growers.

6 Strategy

The strategy is designed to strengthen the weaknesses in the current service provision and enabling environment in the market system. This takes the form of (1) identifying the market potential, through calculations to show the potential of the sector; (2) a vision of change, to envisage how the value chain or market system would operate if identified problems are resolved; and (3), a set of interventions which can be targeted at specific market actors or groups of market actors which can be engaged to drive change in the system.

6.1 Market Potential

The opportunities to develop Arabica in Ngada and surrounding areas in Flores and for Robusta in Malang and surrounding areas in East Java are considerable. Good market prospects, especially for Arabica specialty coffee supported by the high potential and uniqueness of local environment are key factors for the Flores and East Java regions. It is estimated that given there are over 50,000 small-holder farmers in the target districts of Flores and East Java²⁰, and that these areas have the potential to raise productivity by 0.15 and 0.39MT/ha to an average of Flores 0.45 and East Java 1.18MT/ha²¹. Therefore based upon existing production data (of 11,122MT and 13,735MT respectively) the potential new production from existing areas could reach 16,683MT in Flores and 20,603MT in East Java. This could unlock a **potential market of over AUD 12M in Flores and AUD15M in East Java** (see table 2 below).

Table 2 Business Calculation for the Coffee Sector Development²²

Market/Production Value*		
Average Selling price per kg (IDR)	22,000	22,000
Current Production (kg)	11,122	13,735
Current Value of Production (million IDR)	244,684	302,170
Poential production (MT)	16,683	20,603
Total value of potential production (million IDR)	367,026	453,255
Total value of potential production (AUD)	36,702,600	45,325,500
Total potential value of increased production (million IDR)	122,342	151,085
Total potential value of increased production (AUD)	12,234,200	15,108,500

6.2 Vision of Change

Based on realizing the opportunities for coffee sector development in Ngada, Malang and its surrounding areas, a vision of change can be outlined for the sector and service levels. At the **sector level** the vision is to realize increased productivity and higher production levels which can be sold as a high-quality coffee to meet rising global demands. At the **service level**, there are a range of sustainable services which are envisioned, including: (1) Agro-input retailing through ICCRI Franchises; (2) GAP technical support services through ICCRI Franchises; (3) Post-harvest processing services through cooperative-run processing units;

²⁰ Total area and number of farmers is based on target of the project outreach in two years and the district actual data.

²¹ Total productivity and plot size: compiled from Data of Directorate General for Estate Crops (2012).

²² Price assumption is average price for high quality Arabica and Robusta refers to the price at harvest time in 2013.

(4) Business brokering (demand aggregation); (5) Financial services through private FSPs; (6) Branding through PPP (Brand Forum); and, (7) Quality Assurance (QA) PPP (Brand Forum).

6.3 Interventions

6.3.1 INTERVENTION 1: Develop ICCRI Franchise to be implemented by Coffee Cooperatives.

It is crucial for the strategy that farmers are able to produce product that can access the higher value markets. The supply of services on GAP, GMP, Institutional Coffee Processing Units, ICS, certification and market information are therefore necessary to farmers. The adoption of these good practices will enable farmers to have sufficient capacity to increase production and supply quality coffee as requested by the market. Such services can be provided by **developing ICCRI franchises** (Coffee Farmer Cooperatives act as ICCRI franchisee) to serve the needs of coffee farmers. The franchise model will ensure that incentives are aligned at the local level towards the provision of quality services.

6.3.2 INTERVENTION 2: Develop Decentralized Processing Facilities for High Quality Coffee through Cooperatives.

After the development of knowledge and skills of farmers, the logical next step is to ensure that farmers can benefit from capital support and facilities for post-harvest processing to produce high quality coffee. **Developing decentralized processing facilities** to produce high quality coffee through cooperatives is required to enable farmers to grow and produce export-quality coffee in a professional manner. This can be achieved through developing a business model in which cooperatives will work closely with financial institutions and coffee buyers (exporters) in long-term partnerships. The intervention is highly complementary with the development of the ICCRI franchises and therefore it is recommended that these are carried out in parallel.

6.3.3 INTERVENTION 3: Build forums for coffee sector development.

There is a need order to ensure the synergy of programs to increase their impact. This includes the framework of MPIG development, infrastructure development and agricultural development policies that support the development of integrated coffee farms, strengthening the sector so coffee farms are not replaced with other cash crops. **Building forums for coffee sector development** at the level of districts and regions (island or inter island) will enable the coffee sector to develop more optimally through seeking synergies with other initiatives at the local level. These could include district economic cluster, specialty coffee community, road to agricultural production areas, integrated coffee farming and will be a logical next step further to the first and second interventions showing good results.

6.3.4 INTERVENTION 4: Advocate for government policies promoting a system for coffee quality standardization.

If Indonesian coffee is to build upon its global position as a premium quality and specialty coffee producer, it needs to ensure there is policy development on Indonesian coffee quality standards and certifications. Therefore **advocacy** is required to encourage the central government to provide policies aimed at ensuring that Indonesia coffee quality is standardized and guaranteed under certification systems. Specifically to focus on creating a positive image of Indonesian coffee worldwide leading to increased business opportunities obtained by farmers while supporting environment protection and fair trade.

6.3.5 INTERVENTION 5: Develop business financing products that fit the needs of coffee farmers.

Financing remains a barrier to integrating coffee farmers into higher value markets, as the range of options available is currently insufficient. Products and services either for individual farmers or for informal groups are expensive or inaccessible due to high transaction costs (formal or informal). Therefore there is a need to work closely with financial services providers (FSPs) to **develop viable products** which can be deployed to strengthen small-holders in the system. This intervention is linked strongly with the development of decentralized processing facilities which will carry a relatively significant capital costs in the set up phase.

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ANNEX

Intervention Logic Analysis (ILA)

(1) Problems	(2) Underlying Causes	(3) Services/ (4) Enabling Environment	(5) Weaknesses	(6) Interventions
1. Quality of coffee does not meet the required standards (of buyers)	<p>Farmers do not have knowledge on proper post-harvest processing techniques</p> <p>Poor access to providers of post-harvest processing services in the vicinity</p> <p>Farmers do not use quality inputs and good production techniques</p> <p>Poor access to service providers of improved agro-inputs and production technologies embedded with agronomic practices</p>	<p>Agro-input retailing</p> <p>GAP technical support services</p> <p>Post-harvest processing services</p>	No incentive for stand-alone service providers	INTERVENTION 1: Development of ICCRI Franchise
2. Processors do not want to invest in complete processing machines	<p>Very little incentive for providers to provide standalone services</p> <p>There is a general lack of knowledge on both production and full management of processing</p>	Business brokering (demand aggregation)	No services being delivered for farmers	INTERVENTION 2: Development of Decentralized Processing Facilities for Specialty Coffee through Cooperatives
3. Currently the processing facilities (that do proper full processing) are centralized and far from the coffee growing areas	Very little incentive for providers to provide standalone services	<p>Post-harvest processing services</p> <p>Business brokering (demand aggregation)</p>	No services being delivered proximate to farmers	INTERVENTION 2: Development of Decentralized Processing Facilities for Specialty Coffee through Cooperatives
4. Farmers have no choice but to follow traditional methods of cultivation (low productivity)	<p>Poor access to support services for the transfer of improved agronomic practices</p> <p>Poor access to service providers of improved agro-inputs and production technologies embedded with agronomic practices</p>	<p>Agro-input retailing</p> <p>GAP technical support services</p>	No incentive for stand-alone service providers	INTERVENTION 1: Development of ICCRI Franchise

<p>5. Farmers are not willing to take the risk in investing in improved inputs</p>	<p>Poor access to support services for the transfer of improved agronomic practices</p> <p>Poor access to providers of post-harvest processing services in the vicinity</p> <p>Other commodity crops are more profitable than coffee currently</p> <p>Farmers are not utilizing existing financial products</p>	<p>Business brokering (demand aggregation)</p> <p>GAP technical support services</p> <p>Financial services</p>	<p>No incentive for stand-alone service providers</p> <p>Financial products are not suitable to coffee farmers</p>	<p>INTERVENTION 5: Develop business financing products that fit to the needs of coffee farmers.</p>
<p>6. Decline in production and limited supply of quality coffee</p>	<p>Poor management of plantations</p> <p>Poor implementation of GAP</p> <p>Farmers are converting coffee to produce other commodities</p>	<p>GAP technical support services</p> <p>Business brokering (demand aggregation)</p>	<p>No incentive for stand-alone service providers</p>	
<p>7. Indonesian coffee does not fetch high premium prices</p>	<p>Perception of poor quality</p> <p>Lack of branding for quality assurance</p> <p>Quality standards are not maintained</p>	<p>Branding</p> <p>Quality assurance</p>	<p>Lack of coordination and representation in the sector</p>	<p>INTERVENTION 3: Build forums for coffee sector development</p> <p>INTERVENTION 4: Advocate for government policies promoting that a system for coffee quality standardization.</p>

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