A Rapid Assessment on the Nature of Fresh Food Supply Chains to Supermarkets in Indonesia

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"Helping Indonesia to Grow"

A Rapid Assessment on the Nature of Fresh Food Supply Chains to Supermarkets in Indonesia

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For the

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1. Introduction

Objective of the report: The food economy in Indonesia is changing fast. Staple foods are being replaced by fresh foods. Warungs and wetmarkets are being replaced by mini-markets and supermarkets[1].

The overall objective of this report is to assess these changes in terms of the role of supermarkets in the value chains for fresh foods, with an emphasis on fresh fruits and vegetables (FFV). Specifically, the assessment looks at the current issues and constraints for improved productivity, quality, safety and consistency of supply to supermarkets, from the supermarket's perspective. It concludes with some recommended programmatic options for the USAID AMARTA project.

Information sources: The information in this report is based on (1) secondary information, (2) key informant interviews with fresh food buyers of leading supermarkets, wholesale suppliers, farmers and industry experts, and (3) visits to markets, stores (of Hero, Sogo, Makro, Ranch Market, Carrefour, Tiara Dewata), distribution centers and producers. A complete list of the key informants is included in the appendix.

2. Supermarkets in Indonesia

Market Liberalization and Foreign Direct Investment (FDI): The Indonesian government had closed the retail sector to foreign direct investment in 1969 in an effort to protect local retailers. However, a number of large foreign retailers utilized a loophole in the regulation and entered the Indonesian market through franchise and technical arrangements with local companies. In 1998, the Indonesian government opened the retail industry to foreign investment, a provision in the letter of intent between the Indonesian government and the International Monetary Fund (IMF) on reviving the Indonesian economy following the crisis of the late 1990's. Soon after the 1998 liberalization, many big foreign retailers began to invest in the huge market that is Indonesia (around 245 million people), in particular in the hypermarket sector.

Supermarket sector composition: In 2006, there were some 30 modern retail banners and the total number of modern stores consists of 6,500 mini-markets, 1,200 supermarkets, and 100 large format stores. The major modern retail banners in Indonesia include hypermarkets such as Carrefour and Giant, cash & carry stores such as Makro, supermarkets such Hero and Matahari, and mini-markets such as Alfa and Indomaret. The appendix provides a list of the major supermarket chains in Indonesia with their contact information. Table 1 provides a numerical overview of Indonesia's leading food retail banners.

[1] Supermarkets is here used as a general term describing all modern food retail outlets including supermarkets, convenience stores, mini-markets, hypermarkets and fast food chains.

Table 1 Modern Trade Retailers – Banner Names & Numbers

Type of Retailer	2004	2005	2006
Hypermarkets			
Alfa Gudang Rabat	35	34	
Carrefour	15	19	29
Hypermart	4	16	
Giant	10	12	17
Supermarket			
Hero	88	83	95
Ramayana	85	82	
Superindo	44	46	
Yogya Group (Yogya+Griya)	43	46	
Matahari	45	42	
Boma	20	21	
Gelael	13	13	
Giant	1	1	
Tiara Dewata	1	4	5
Minimarket			
Indomaret	1,001	1,420	
Alfamart	973	1,263	
Star martedì	44	52	
Yomart	25	66	

Supermarket sector growth: Supermarkets have grown faster than traditional grocery outlets which resulted in a food retail market share that increased from less than 5% in 1995, to 20% in 2000 and to 30% today. Supermarket growth in Indonesia is still strong. With supermarkets growing at nearly three times the rate of traditional retail outlets (15% vs. 5%) the share of supermarkets in food retailing is expected to reach 50% by 2010. There are other signs that the supermarket sector in Indonesia is far from saturated. Carrefour for example opened 10 new hypermarkets in 2006 and plans to open another 10 hypermarkets in 2007. Wal-Mart, its global

arch-rival, will very likely enter the Indonesian market again in 2007 (possibly by buying out Makro's 12 branches). Hero opened 25 new stores across its various banners in 2006 alone.

Supermarkets and fresh food retailing: Fresh foods represent a more difficult product category for the supermarkets to enter. The main reasons are the perishability of the product, food safety issues and (for the greater part) a lack of reliable suppliers. Fresh foods represent around 30% of the supermarket sales (or $1.5 billion), so their estimated share in fresh food markets is around 10%. Fresh fruits and vegetables (FFV) represent 1/3 of the supermarkets fresh food sales ($500 million), with fresh meats, fresh fish, dairy products and bakery products making up the other 2/3. Fresh foods represent relative minor but fast growing product categories at supermarkets.

3. Socio-Economic Profile of the Supermarket Customers

Growth drivers and consumer preferences: Urbanization and increasing disposable household incomes are the key drivers behind the growth of the consumer base targeted by the supermarkets. Related to these two drivers are the lifestyle changes of households: how and where consumers shop, what products they buy and what product characteristics they value (price vs quality, packaging, food safety guarantees) and so on. Most notably for this study here, consumers shift over time to spend less on staple foods like rice and more on fresh foods (FFV, fish, meats). For example, a recent study found that urban households in Indonesia currently spend the same amount on FFV as they do on rice. The combined result is that the future growth for agri-food firms in Indonesia lays not with selling staples (such as rice) through traditional shops but with selling high-value and value added foods (such as fresh foods) to supermarkets.

Market size and segmentation: Supermarkets initially target the higher income groups (so-called A-customers with a monthly household expenditure of more than Rp. 2.25 million) but are increasingly targeting B and C customers (with a monthly household expenditure of more than Rp.800,000). Table 2 gives indicates the size and growth of these household categories in Indonesia. An estimated 15% of Indonesia's population of 245 million belongs to the A and B groups (i.e., 37 million people). In targeting these customers, some supermarkets, like Hero for example, have developed various store formats (e.g., smaller formats that can locate closer to where lower income household live). The mini-market segment is growing the fastest (23% annually) but it is less important for fresh food sales. Supermarkets are also increasingly moving to secondary and tertiary cities (e.g., Ranch Market and Carrefour opening stores in Surabaya). Other supermarkets are specifically targeting the high income households only (e.g., Ranch Markets). Wherever supermarkets open a store, they will always adjust the product mix offered to their customers in that area. These are still full ongoing developments. These market segmentation strategies will have implications for the fresh food supply chains going into the supermarkets.

Table 2 SES Monthly household expenditure (2005-2006)

SES	Monthly household expenditure	Total	Urban	Rural
A1	More than Rp 4,250,000	0.3%	0.3%	0.2%
A2	Rp 3,250,001-Rp 4,250,000	0.2%	0.5%	0.1%
A3	Rp 2,250,001-Rp 3,250,000	1.1%	1.8%	0.4%
B1	Rp 1.750,001-Rp 2,250,000	3.4%	5.7%	1.3%
B2	Rp 1,250,001-Rp 1,750,000	9.5%	13.2%	6.3%
C	Rp 800,001-Rp 1,250,000	21.2%	25.8%	17.0%
D	Rp 600,001-Rp 800,000	29.4%	27.9%	30.8%
E1	Rp 400,001-Rp 600,000	26.5%	20.3%	32.8%
E2	Rp 400,000 or less	8.3%	4.5%	11.7%

4. Nature of the Supermarket Fresh Food Supply Chain Structure

4.1. General Characteristics

Fresh food supply chains into supermarkets are still in an early stage of development, with supermarkets trying to move away from traditional supply channels who do not address their needs well. As such there is a great variety in the ways supermarkets have built their supply chains for fresh foods. The text in this section is thus more an illustration of this variety than a description of one specific supply chain model.

Supermarkets are under heavy competitive pressure to lower costs and prices and to increase variety, quality and year-round availability. As a result, the essential driver behind the supermarket induced supply chain changes is that supermarkets want to have an efficient and reliable supply of fresh foods. They want to send out their daily orders and get the products in the quality, packaging format and volume they ordered at the location and time they were ordered for. They want year-round consistency in price and adherence to food safety standards. Traditional supply chains cannot offer this. The very poor condition of wholesale markets (congested, unhygienic, availability fluctuations) makes them the least desirable option for supermarkets.

The need for control implies that wherever possible, supermarkets will tend to order from large producers or importers who have the capacity to supply with consistent quality. Where

such suppliers are not available, supermarkets induce 4 pillars of change: (1) contracts, standards and preferred suppliers; (2) centralization; (3) global/regional sourcing; (4) technological change. These pillars are elaborated on in more detail below.

4.2. Fresh Meat Supply Chain (focus on beef)

For meat (beef), supermarkets do not rely on traditional supply chains linked to state-owned slaughterhouses and wet-markets as these lack the know-how on managing quality (there are no established cutting standards) while food safety is low due to poor sanitation, lack of Good Manufacturing Practices (GMP) and lack of cold chain infrastructure (meat may be transported in open trucks for 12 hour transports). Supermarkets want a strict implementation of the cold chain and adherence to food safety standards from their fresh meat suppliers. These two key criteria are met by two types of suppliers: importers and modern integrated meat processing factories. Imports relate mostly to beef from foot-and-mouth disease free countries like Australia and New Zealand. Integrated beef processors have their own cattle (imported from Australia) and modern HACCP (Hazard Analysis of Critical Control Points) certified slaughterhouses. The leading companies here are Kibif, Santori, Sumber Prima Anugerah Abadi (SPAA) and Sari Murni (for beef) and Aroma (for pork). These producers sell both shelf-ready products under their own brand name and large meat cuts for further cutting in-house by the supermarkets. Supermarket managers indicated that these two sources of meat supply satisfy their needs and they do not have significant supply chain problems.

The meat processing industry (its association, the National Meat Processors Association – Indonesia, NAMPA, has 80 members) complains about the cut-throat pricing of the supermarkets (who represent 55% of their sales already). Not only charge supermarkets discount fees of 20-30% they also charge a listing fee of Rp.3-5 million per Stock Keeping Unit (SKU) per store. The listing fee is paid only once and represents a lock-in investment which is lost if the producer pulls its products out of the supermarket. NAMPA with other Fast Moving Consumer Goods (FMCGs) manufacturers is currently lobbying for a government policy change which would allow retailers to ask for listing fees only if it has a direct impact on increased sales. Given these pricing strategies of the supermarkets, the meat processing industry is exploring how to improve wet-markets (currently less than 5% of their sales) so that consumers buy more processed meats from this channel and thus release the price pressure from the supermarkets somewhat.

4.3. Fresh Fish Supply Chain

Supply chain variation: Supermarkets procure fish and seafood products through imports and through relatively traditional supply channels. Imports are relatively limited and refer mostly to salmon. At a more up-scale supermarket like Ranch Market imports make up around 30% of fish supplies. For other supermarkets this percentage is lower. For the local fish, supermarkets get most of their supplies through specific buying agents (middlemen) who buy either directly from the fishermen through fish auctions (preferred) or from the fish market (avoided when possible). They also buy small quantities of their shrimp, prawns, eel, and grouper directly from fish farmers (aquaculture).

Value-adding: A wide variety of whole fish and seafood is sold in the leading supermarket chains. Fresh (chilled) processed fish products are almost all prepared locally. Some products such as fish cakes and seafood balls are made by small home industries. Sea sticks and mixed seafood pre-packs are made by the local fish processing industry. Fresh filets and marinated products are prepared, packaged and labeled by the retailer in the store's backroom. Most supermarkets also sell a variety of live fish and other seafood.

Food safety: Some supermarkets send samples of fresh fish products to laboratories for chemical and microbiological analysis and do their own testing for the presence of formaldehyde as well (especially in the case of upscale supermarkets such as Ranch Market). However this is not a common practice in most supermarkets. If problems are found, some supermarkets will work with the supplier to address the problem.

Main supply side problems for supermarkets: (1) there is no traceability system in the fish supply chain which makes it difficult for the retailer to assess quality as it relates to shelf-life; (2) they do not know how they can buy directly from the fishermen (middlemen control this supply channel).

4.4. FFV Supply Chain

Imports: Imports are an important supply source for FFV for supermarkets in Indonesia, especially for fruits which make up around 65% of sales. It is estimated that 80% of fruits are imported, although this reflects to a large extent products such as apples, pears and grapes. Imported fruits items include apples from the US and China, mandarins from Australia, pears from Korea, and durian and longan from Thailand. Other imported fruits are oranges, kiwi-fruit, strawberry and cherries. For vegetables, imports are less important (20% or less of total sales), with typical imported vegetables including onions, carrots, garlic and broccoli, mostly from China and Australia, as well as value-added products such as salad bags from Australia. These products are generally cheaper, of better quality and, most important, can be readily ordered (reliable supply). For example, where as the local price for broccoli may be Rp.14,000/kg, the import price including all transport and fees for broccoli from China may be only Rp.10,000/kg at the same time. Most supermarkets indicated that they have no problems with customs processes in importing FFV. Overall, one report estimates that the value of FFV imports by supermarkets is around $300 million. It is important to point out that while Indonesia may not hold any comparative advantages for some currently imported items such as apples or grapes, these products are taking market share away from items for which Indonesian farms can be competitive (tropical fruits such as mango or mangosteen). Quality improvements and marketing communication support are needed to address this challenge. For example, baby black water melons were promoted using in-store samples and have since become a commodity.

Export opportunities via the supermarket's regional Distribution Centers (DCs): The supermarket's global/regional procurement system with regional DCs also creates an opportunity to market FFV from Indonesia to the region. For example, baby black melons from one of Carrefour's specialized suppliers are under consideration for export from Indonesia to Carrefour's Shanghai

DC. Similarly, competitive Indonesian FFV suppliers could export to the region through the parent company of Indonesia's largest supermarket chain Hero. Dairy Farm International implements a centralized negotiating system that lists a number of FFV suppliers in the region from which the chains in the various countries can procure their FFV. Some notable opportunities for export include mango, mangosteen, rambutan, and snake fruit for export to the Middle East and vegetables (from potatoes to tomatoes) to nearby urban markets such as Singapore. The biggest challenges in developing this export opportunity will be the costs for transportation and the costs for promoting the product (and the supplier) in the export market.

Domestic supply channels: Fruits which are procured locally include: pineapple, mango, salak, rambutan, guava, passion fruit, papaya and banana. There is still a strong reliance on buying from traditional wholesalers, especially for fruits (up to 80% of domestic supermarket fruit supplies) given that fruit production in Indonesia is mostly gathered and aggregated from the few trees the average farmer has, rather than from plantation production. However, supermarkets are gradually shifting to new types of suppliers including: (1) direct supplies from large producers (e.g., Sunpride for bananas) or farmer associations (e.g., Pacet Segar, KUD Pasir Jambu); (2) buying through agents who subcontract with a set of farmers and (3) more capitalized specialized wholesalers. All of these alternative supply chain models offer a more convenient ordering process for supermarkets than the traditional channel does.

Large producers: For example, a large producer-distributor such as Sunpride which has its own ripening rooms for bananas can offer consistency in terms of both quality and volume. Other produce items supermarkets buy directly from farmers include: Salak Pondoh (Sleman), onions (Brebes-Central Java), avocado (east Java), mango (east Java), potato (Dieng), cabbage (Dieng), mangosteen, watermelon, and melon. However, FFV procurement directly from an individual farmer by a supermarket is rare since most Indonesian farmers operate on less than ½ hectare of land. This is why buying agents are a common phenomenon.

Buying agents: Buying through agents means supermarkets do not have to deal with a large number of small farmers (which would mean high transaction costs) and the cash-on-delivery needs of these farmers (which the buying agent takes care off). For example, Putri Sagar has 50 contractors who in turn manage around 1,500 sub-contractors (in total). The buying agent may be farmers themselves or they may be purely involved in the collection function. Building stable relationships between a wholesaler's agent and the farmers is a difficult task as traditional middlemen will lure farmers away. They do so by either paying higher prices (during times of shortage) or by "locking in" the farmer by financing his inputs.

Specialized wholesalers: Specialized wholesalers have made the investments in either their own production facilities or in developing an outgrower network that allows them to supply a wide range of FFV items, including value-added items such as pre-packed vegetables, to the supermarkets. For example, Saung Mirwan in Bogor produces the more demanding vegetables (e.g., paprika, beef tomato) on its own farms while for easier to grow vegetables (e.g., carrots) it contracts with smallholder farmers.

Value-adding: Value-adding in the form of grading & sorting, packaging and fresh processing of FFV sold in supermarkets is mostly done at the wholesaler level, although some sorting & grading is done by farmers and some packaging and processing by the supermarkets themselves. Labeling and barcoding, including the use of private labels is usually also done by the (specialized) wholesaler.

Contracts and standards: The use of contracts is still very much an emerging issue. An environment of corruption and lack of trust hampers this development. Supermarkets may use written contracts for the FFV suppliers but they may not stipulate more than a product standard and general agreement of a supply relationship. As trust develops specific supply volumes may be indicated guaranteeing the farmer a more secure market (Hero supermarkets for example plans to indicate volumes in contracts starting from 2007). Price is also not indicated in the contracts. They are the basis for defective behavior on both sides. Farmers are often tempted to sell their produce in the traditional channel if prices there are high, thus not adhering to their supply contract. But in a weak contractual environment, even supermarket chains will defect from the arrangement if the price difference between buying direct from the (remote) farmer and buying from the (Jakarta-based) wholesale market is more than 10%. Models that seem to work to some degree are: (1) allowing farmers to sell some of their production to traditional markets when prices are high in combination with having contracted product prices follow market prices to some degree (never below cost of production however); and (2) developing profit sharing schemes whereby the distributor and the farmer share the profit after a deduction of predetermined costs. As an illustration of the latter, one distributing agent buys duku from its farmers in Sumatra at the local market price of Rp.2,000/kg and transports it to Bali by air where it receives a price of Rp.14,000. The trading profit after subtraction of Rp.5,000 in marketing costs (which includes transportation) is split 50/50 between the farmer and the distributor.

Rejection rates, mark-ups and fees: FFV rejection rates at the supermarket's reception bay are in the 5-10% range. Price mark-ups vary widely by FFV item, but typically the farmer and the wholesaler each capture ¼ of the retail price and the supermarket captures ½. Furthermore, supermarkets charge marketing/discount fees and listing fees, although listing fees may be waved to support entry by smallholder or specialty product suppliers. As supermarkets do not generally pay prices above traditional market prices and charge these substantial fees, the main attraction for suppliers lays in the fact that supermarkets allow them to sell large volumes at low transaction costs with a relatively high reliability of both price and volume over time.

Food safety standards: While food safety standards are a concern to supermarkets as a whole, certification is very limited. Only at Carrefour are the prerequisites for HACCP certification well under way for their back and front store fresh food operations. Tiara Dewata, a 5-branch supermarket chain in Bali, has recently developed a packhouse/distribution center for fresh foods that would likely meet HACCP standards, but no certification process is underway. At the supplier level the situation is similar. Probably the only FFV wholesaler who has HACCP certification in Indonesia is Saung Mirwan in Bogor. This company has been a leader in its industry, implementing for example cold chain technologies for the first time 10 years ago. Saung Mirwan's HACCP certification is market driven as its customers McDonald's and Phillips

(a US seafood processor with factories in Indonesia) demanded it. The wholesaler produces all the shredded lettuce bags for McDonald's Indonesia operations as well as finely chopped vegetables for Philips's spring rolls (for US export). Inspections for pesticide residues are nearly non-existent due to the high costs of testing ($50 per product-chemical combination).

Centralization: for the greater part, FFV suppliers to supermarkets have to supply each store directly, rather than supply to the supermarket's distribution center. This is likely to change in the near future though (at least for Jakarta). For example, Carrefour plans to move its locally purchased FFV through a DC from 2007. Bali's Tiara Dewata supermarket moves all of its produce through its DC already. Fast food chains like McDonald's (part of the modernization of the food industry) also have their FFV inputs supplied to a (third party managed) DC.

Technology: While the presence of very rich volcanic soils creates great opportunities to produce FFV efficiently in Indonesia, major technology failures at the farmer level and further along the supply chain make that Indonesian farmers are not competitive in their own backyard. These technology failures relate to the farmer's lack of use of good agricultural practices (GAP), the difficult process of importing seeds (90% of seed is smuggled), the lack of physical infrastructure (greenhouses, irrigation, packing sheds, cold chain technology) and the high cost of transportation (although transportation costs are decreasing due to increased capacity and competition). Addressing these technology issues can dramatically improve quality and productivity and is a requirement if suppliers want to enter and remain in the supermarket's FFV supply chain.

Agricultural practices: Farmers do not implement crop rotation systematically. They do not use the varieties that supermarkets have explicitly asked for. They overuse chemicals, in part because adulterated and ineffective products being sold in the market, in part because of a lack of knowledge on GAP. The Ministry of Agriculture has developed a system of training and certifying farmers in certain GAP levels (Quality and Safety Agricultural Product Certification - PRIMA), but this system has hardly been implemented. With its direct assistance, Ranch Market supermarkets got one of their direct suppliers, Capo Verde Farm, certified as one of the first PRIMA farmers. This is an exception rather than the rule.

Cold chain technology: Supermarkets request, but do not require the use of cold chain technology for their FFV suppliers. Nevertheless, the leading suppliers do maintain the cold chain from the farm to the supermarket and as their role in the supermarket supply chain grows, cold chain technology will become more ubiquitous for FFV. Overall, domestic cold chain traffic increased 300% over the period 2002-2004. The recently ended USDA financed Cold Chain Project illustrated how the use of some innovative cold chain technologies (such as portable forced air pre-cooling devices) can have high economic benefits. These benefits include (1) a reduction in wastage (e.g., from 40% to 0% in case of cabbage, from 35% to 5% in case of mandarin oranges), (2) a preservation of quality (e.g., Kangkung Lombok, a water spinach from West Lombok had a two weeks longer shelf life), (3) an increase in value through the access to new markets (e.g., a Jakarta price that is three time the price received in Denpasar); and (4) a decrease in transaction costs because the increased shelf life allows for longer storage which in turns allows for the trading of larger volumes at a lower frequency. At the farm level, current

best practices have a specialized wholesaler drive its refrigerated truck to the produce collection point with about 4-5 hours between harvest and loading.

Transportation: Transportation costs are high in Indonesia due to high fuel costs, poor roads, long inter-island distances, and numerous police road blocks. For example, the transport of potatoes from Central Java to Jakarta in a 5t truck increases the cost from Rp.4,200/kg at the farm gate to Rp. 4,935/kg at the supermarket dock (an 18% increase) due to both the actual cost of transportation and 8% shrinkage. Transportation from Thailand to Jakarta may be cheaper than from West Sumatra to Jakarta. This high transportation costs has made the efficient use of backhauling an important issue. On the positive side, increased capacity and competition have made road and air transportation cheaper over the last few years. Furthermore, good negotiations and business strategies can reduce transportation to competitive rates. For example, air transport (of say chilies) from Sumatra to Denpasar has a rack rate of Rp.12,000/kg. By using fixed volume contracts and selecting last flights with commonly unused cargo space, one trader negotiated a rate of Rp.1,000/kg. Indicating how prices have come down in recent years, the lowest rate this trader could obtain for air transportation two years ago was Rp.2,500/kg.

5. Supply Side Challenges from the Supermarket's Perspective and Potential Solutions

Quality and price: When discussing the main challenges in their fresh food supply chains, it is notable that top issues do not relate to the absolute price. Rather they relate to the difficulty of ordering: inconsistent quality, highly variable price, the need to pay farmers in cash upon delivery, and so on. In part, this reflects the fact that supermarkets have for the greater part targeted high income households who care more about quality then they do about price. Getting the quality right is the first objective. However, as supermarkets increasingly penetrate the middle and lower income household market segments, and thus compete more directly with traditional fresh food markets (wet markets) price will become an increasingly important factor.

Table 3 provides an overview of the main FFV supply chain challenges as reported by the supermarket managers and their direct suppliers, with a listing of some potential intervention solutions.

Table 3 Overview of the main FFV supply chain challenges

Supply Chain Challenge – Problem	Potential Solutions
Low and inconsistent quality level	Technical assistance through GAP training of lead farmers and extension staff of intermediaries Training on HACCP, SQF (Safe Quality Food), sorting & grading, packaging (post-harvest) University capacity building, technical partnerships with the industry, the government and universities Stimulate cold chain investments (storage, transport) through credit support Use demo plots to show the results of agricultural and post-harvest practices known to be economically superior Organize post-harvest handling seminars for farmers
High price variability	Stimulate cold storage investments through credit support Promote successional planting Promote market price information dissemination systems
Cash-On-Delivery (COD) payment to the farmer	Design factoring solutions to support this function of the intermediary
High transportation costs	Increase scale through collection points Stimulate investment in larger transportation vehicles through credit support Look for efficient backhaul opportunities Conduct a trial-based cost-benefit analysis for transporting fruits (e.g., mango) by sea (containers)
Lack of suitable packaging	Organize study tours Facilitate import or local production of modern food packaging materials
Lack of knowledge on exact shelf life	Technical assistance on cold storage Development of traceability systems

Lack of reliable supply volumes	Support the development of village level ponds to improve water management at the farmer group level Support investment in greenhouse technologies Training of lead farmers or field extension agents of intermediaries in successional planting
Unclarity on the use of VAT in the supply chain	Analysis of the VAT regulation and practice Seminar and stakeholder workshop on VAT
Cumbersome procedure to import seeds	Work with the government to simplify and streamline the importation procedures in practice
High levels of pesticide residue	Training of lead farmers and field extension agents of the intermediaries in the use of pesticides and in the use of Integrated Pest Management (IPM) approaches
Undercapitalized suppliers	Work with commercial banks and the Ministry of SMEs to increase access to affordable credit for suppliers possibly using a loan guarantee support program
Farmers lack of business management skills	Training of lead farmers and field extension agents of the intermediaries in basic business management skills
No knowledge on location of farmers with potential to supply FFV products of interest to the supermarket	Explore the FFV supplier base for producers with supermarkets potential and facilitate contact between these producers and the various supermarkets
Poor understanding on organic production and certification system and poor public awareness on organic foods	Providing training on ICS (Internal Control System) and organic farming in general in collaboration with organic producer associations Conduct a survey and study on organic faming system in Indonesia Organize an Organic Expo Support consumer education and promotion programs

6. Financial and Technical Assistance available to Supermarket Suppliers

Limited assistance: Financial and technical assistance to supermarket suppliers is relatively limited, especially in terms of assistance provided by the supermarket themselves. Government extension services have in the recent past also been limited as these were focused on "strategic" crops (rice, sugar, corn, soybeans) following government policy. University-based technical experts do provide assistance but in many cases their recommendations do not resolve problems effectively and some visiting experts are needed. Specialized wholesalers have

provided some assistance to farmers they contract with and multi-party partnerships (including NGOs and development projects) are another source of assistance.

Some assistance illustrations: (1) Specialized wholesalers like Saung Mirwan have field officers (2 for each of the 3 areas where they operate in the case of Saung Mirwan) who not only monitor crop growth and quality in the field (alignment with cropping calendars) but also provide some limited technical advice on GAP. These field officers are however not always up to date on the latest information and knowledge and so additional training may be warranted. (2) Specialized wholesaler Bimandiri sets aside 10% of its profits for an R&D effort that benefits the farmers directly. (3) In search of supplies of certain varieties of vegetables and organic production, Ranch Market supplied some of its FFV suppliers with seeds. However, farmers still grew what they were used to. (4) The government farms that supply Tiara Dewata supermarkets in Bali supply farmers with all the inputs they require (other than labor) and provide extension services to the farmers working on their land as well. (5) In the Bimandiri – Carrefour – Syngenta partnership, input supplier Syngenta provides extension services to the farmers.

7. Policy and Regulatory Issues

Market regulation: The existing regulation is the Decree of the Minister of Industry and Trade No.107/MPP/Kep/2/1998 on the Regulation and Procedures on Providing Permits for the Modern Market for Doing Business and the Joint Decree of Minister of Industry and Trade and Minister of Internal Affairs No. 145/MPP/Kep/5/1997 and No.57/tahun/1997 on Organizing and Supervising Markets and Stores. However, the implementation of this regulation is highly dependent on the policy of each District Government which is the predominantly determinant factor. As a result, modern food retailers (supermarkets, hypermarkets, mini-markets) and food service providers (fast food chains) are strategically located inside the commercial and even residential areas of big cities. There they compete directly with smaller traditional retailers and street food vendors. Often not able to compete on price and assortment with the supermarkets, traditional outlets either go out of business or try to survive on starkly reduced revenues (e.g., a 70% drop in sales). Since there are approximately 1.8 million of them, these traditional outlets represent many jobs and there is some pressure on the Indonesian government to introduce regulations to bar (foreign) chain supermarkets from having outlets in close vicinity of places where (domestic) retailers operate at smaller scale. The Ministry of Industry and Trade is currently drafting a Presidential Decree regulating the operation of modern retailers on outlet location, operational hour, building size, and so on. Though this draft has been prepared since 1995, there is no clear indication yet when the new decree will be issued. This development abstracts from the benefits consumers derive from the lower prices and larger choice at the supermarket.

Value Added Tax (VAT): There is a lot of unclarity regarding the use of 10% VAT along the fresh food supply chains. VAT is based on Law No.8 of 1983 and updated in Law No.18/2000 and Regulations No. 144/2000 and No. 253/2003. VAT laws and regulations apply to the domestic consumption of certain goods and services as stipulated in the laws. It applies to retail products sold through modern retailers, including agricultural, livestock and fisheries products. In order to support the poor, some basic foods like rice and corn are VAT exempt. However, the policy

is not effective for retailers in the informal market, as it is the government's aim to protect traditional retailers. As a consequence supermarkets complain about the fact that informal retailers do not charge their customers a VAT and hence there is no level playing field in the retail sector. Furthermore, while supermarkets charge VAT to their customers, their suppliers often do not. In practice this means that (for modern retailers) retail prices increase with 10%. In some cases wholesalers established two companies, one which can collect VAT and one which does not so that they can address whichever preference the customer has. Given that VAT has to be charged by firms when the sales value increases and they enter the formal sector, there is an incentive for firms to remain informal (hinders growth). Another VAT related issue is that VAT allows for monthly offsets of inputs over outputs and excess inputs can be forwarded to the subsequent month or a refund can be claimed. This means that informal firms supplying fresh foods to supermarkets can not offset any supplies from formal input suppliers on which they pay VAT if they do not charge VAT to their customers. This may impede the purchase of inputs or services from the formal industry which likely provides the best quality inputs available in the market. These inputs may be needed for the upgrading of the firm (e.g., they pay VAT on services related to HACCP certification).

Food safety: Food safety has become a national concern since 1996 where safety issues were formulated in Food Law No. 7/1996. However, only after 2004, i.e., after Government Regulation No. 28/2004 on Food Safety, Quality and Nutrition was issued, did food safety get more and more attention from everyone involved in the supply chain. In the article 2 of this government regulation, it is mentioned that everybody who is responsible for activities in food chain including production, storage, transportation, and food distribution should fulfill the sanitation requirements according to the existing regulation. This includes facilities, the activity itself, and personnel. In article 3 it is further indicated that fulfilling the sanitation requirements in all food chain activities should be done by applying good practices which include: (1) good farming/agricultural practices; (2) good production/handling practices for fresh produces; (3) good manufacturing practices for processed food; (4) good distribution practices; (5) good retailing practices; and (6) good manufacturing practices for fast foods. In addition, there is also Law No 8 of 1999 on Consumer Protection which outlines the responsibility of business parties, including those who are involved in the food chain, related to the protection of their consumers. To operationalize the government regulation some ministerial regulations have been decreed such as: (1) the Minister of Health Decree on Sanitation and Hygiene Requirement for Food Service Management (Decree No. 715/2003), (2) the Minister of Health Decree on Sanitation and Hygiene Requirement for Hotels and Restaurants (Decree No. 1098/2003), (3) the Minister of Health Decree on Sanitation and Hygiene Requirement for Street Food (Decree No 942/2003), (4) the Joint Decree of the Minister of Agriculture and the Minister of Health (1996) on the Maximum Residue Levels for Pesticide Residues in Food, (5) the Minister of Agriculture Decree No. 381/2005 on the Guideline for Veterinary Control Certification for Animal-Derived Food Business, (6) the Minister of Agriculture Decree for Application of Good Agricultural Practices, and so on. To implement the above regulation, programs need to be developed to help all parties involved in the food chain, especially in regard to applying good practices in their operation. Tailored training programs could be proposed for each of the parties in the food chain.

8. Recommendations

8.1. General Recommendations

Limited intervention opportunities for livestock (beef): While there are great opportunities in FFV and fresh fish, the opportunities for development interventions in the supermarket's fresh meat supply chain are limited as supermarkets do not report significant supply chain problems at this point. Nevertheless, a livestock value chain assessment may reveal some opportunities higher up in the value chain in the form of linking smallholder producers to the larger and more modern vertically integrated beef producers.

Knowledge Capacity Building Effort: It is the core objective of AMARTA to stimulate the implementation of new business models that increase the competitiveness of agribusinesses in Indonesia. This objective of implementation can not be achieved by designing and implementing a necessarily limited set of supply chain models alone. It has to be the result of replication. Replication can come from three sources. Two sources are straightforward, namely the direct demonstration effect and the distribution of project reports documenting the success stories. However, a third source holds the greatest promise for replication (and hence implementation in the long run) and that is to make sure that the knowledge acquired under AMARTA remains available to agri-businesses after the project ends in the form increased local expertise. This local capacity building effort can take on the form of a systematic (as opposed to ad hoc) research effort in which key knowledge organizations such as the Center for Agricultural Policy and Agribusiness Studies (CAPAS) at Padjadjaran University collaborate with international thought leaders such as Michigan State University (MSU). MSU and CAPAS are two AMARTA partners. A relatively small (research) effort (e.g., $150,000/year, or just over 3% of the AMARTA budget) would likely have a large leverage effect in terms of a wide-spread implementation of the new business models that Indonesia's agribusiness sector so badly needs. Of course, this research effort would have to be carefully designed so that it meets AMARTA's core objective.

8.2. Specific Recommendations for Evaluation by AMARTA's Value Chain Program Committees

The following table presents a quick overview of some intervention opportunities that emerged during this assessment. They are further detailed in the paragraphs following the table. While these opportunities indicate specific companies, products and locations, the purpose here is more general, in that they merely illustrate the types of intervention that can be considered by the Value Chain Program Committees.

Table 4 Overview of Intervention Opportunities

Case No.	Nature of the Opportunity	Possible Location(s)	Possible Technical Partners	Possible AMARTA interventions
1	Facilitating supermarket linkages through cold storage facilities in fishing villages	Bali	WBN Lotus, the Kerta Bali Kendongaran fresh fish market, the local fishing community around this market, Carrefour	Facilitate partnerships Cold storage investment support Technical and business training
2	Assisting organic FFV producers to capture new market opportunities	Bogor, Bali	Big Tree Farms, the Indonesian Organic Center (IOC), the Association of Indonesian Organic Growers (APOI), the Organic Farming Society of Indonesia (MAPORINA)	Training of trainers in organic growing techniques Support the establishment and implementation of an organic certification system Assist with the design of a consumer promotion/education program
3	Assisting with the establishment of supermarket focused aquaculture	Tasikmalaya (West Java)	Bimandiri, Carrefour, Wal-Mart (if they re-enter Indonesia), individual fish farmers	Provide a technical and financial feasibility analysis Help design and develop a model gurame fish farm
4	Facilitating partnerships that capture market opportunities	Java	Bimandiri, Syngenta, Carrefour, farmer associations	Facilitate partnerships Provide technical support
5	Assisting farmer groups in more value-adding activities	Java	Bimandiri, Carrefour, Rural Producer Organizations (RPOs)	Technical assistance with packaging techniques at the farm Facilitate investment in cold storage Help find solutions to the working capital constraints of specialized wholesalers
6	Using government owned commercial farms (PD) to organize farmers	Bali	Tiara Dewata supermarkets, the Perusahaan Daerah (PD) in Kembang Merta Village, the sub-contracted farmers on the PD	Training on GAP Facilitate credit access for improvements in physical infrastructure (greenhouses, cold storage, irrigation)

Facilitating supermarket linkages through cold storage facilities in fishing villages: Small boat fishermen and the market women they sell too at local fish markets do generally not have access to cold storage. They have to sell all of their fish by the end of the day and as such are at the mercy of the middlemen they sell to (forced to sell at very low prices). WBN Lotus, a Bali-based wholesaler focused on a wide range of food products both imported and local for the top-end of the market, is considering investing in a small cold chain facility with small cleaning and gutting unit (investment cost of $50-80,000) to be co-owned and managed as a separate profit center by entrepreneurs from the village (with outside technical and managerial assistance at first). This cold chain facility would initially be used for storage and ice production. Lotus would buy and market the highest quality of fish to the top hotels and upscale retail chains. A supermarket chain like Carrefour who plans to open a hypermarket in Bali next year could be brought in for marketing a high (but not the expensive top end) quality range of seafood products. This is exactly the sort corporate social responsibility type of investments that would help foreign owned supermarkets to build an image of being supportive to the local economy rather than destroying jobs through high imports. The lower quality grades of seafood can then be sold in the traditional market based on actual demand. AMARTA could help forge a partnership between the fishing community, the wholesaler and the supermarket as well as help with the investment in the cold storage and ice production facility and the training for those who will manage the facility. Once business skills are build up the venture can be expanded to include a fish smoking facility and still later it can be expanded in a packaged fish filet production unit (two additional profit centers). Some preparing and processing of the fish and seafood at production areas would create jobs, reduce wastage in urban areas and possibly produce inputs for feed for the poultry or aquaculture industry.

Assisting Organic FFV producers in Bali and Bogor to capture market opportunities: Currently, there is a National Standard for Organic Food Systems (SNI No. 01-6729-2002) but the accredited certification body is not yet operational. Therefore, many producers claim their product as organic by themselves without any legal certificate. As a result, there is no guarantee for the consumer whether the product they buy is truly organic or not. The organic foods category is thus currently not protected legally in a practical sense in Indonesia. However, this may change in the near future as the certification body becomes operational and the standard will be enforced and linked to a new organic labeling regulation. Bali-based Big Tree Farms and the around 200 smallholder farmers it procures, as well as similar farms in the Bogor region, are well-advanced in terms of becoming IFOAM (International Federation of Organic Agriculture Movements) certified organic farms in Indonesia. As such they will benefit greatly from the new market opportunity as supermarkets in Jakarta and hotels in Bali will be desperately seeking truly certified organic supplies for their high end customers (the organic price premium is 15-30% at the farm level). Some of these customers are already asking for certification. With organic production in both Java and Bali, options for efficient backhauling can be explored with producer groups in both locations and a transportation firm as partners. The organic program will also benefit from the planned development of an Indonesian Organic Center (IOC) by the Association of Indonesian Organic Growers (APOI). This center aims to take on a wide variety of marketing functions (production planning, cool storage, labeling, branding, certification, and so on). A consumer education program on the nutritional and environmental benefits of organic

production can be designed and implemented to further support the development of a true organic FFV production sector. AMARTA could help with training of trainers in organic and commercial growing practices (e.g., OIC extension officers trained on ICS or Internal Control System techniques for organic production), with establishing a sustainable and recognized organic certification system, with facilitating collaboration between the various stakeholders, with advocacy through the APOI and the Organic Farming Society of Indonesia (MAPORINA) and with the design of the consumer promotion/education program.

Assisting with the establishment of supermarket focused aquaculture: Based on existing demand from its current main customer, Carrefour hypermarkets, Bimandiri is in the process of developing fish farming in a small lake in Tasikmalaya. This pond will be broken down in 400 fish farms of 100-500m^2 managed by individual farmers to be hired from the many jobless in the area. Bimandiri wants these farmers to raise gurame (a tilapia-like fish) and expects to market around 250-500kg/day to Carrefour and/or supermarkets. The product marketed will be marinated, whole frozen gurame. They plan to rent a blast freezing facility and given the high cost of feed they are considering building their own feed factory. Currently they are running some test ponds and are awaiting the first harvest. AMARTA can assist Bimandiri in first providing a thorough technical and financial feasibility analysis. Based on the outcome of this analysis AMARTA can help design and develop a model integrated gurame fish farm that can be replicated in other areas.

Facilitating partnerships that capture market opportunities: A key example here is the partnership between Bimandiri and Syngenta. Syngenta was working with a group of mango producers whom they provided with technical expertise on how to pollinate their mango trees in February so that they could supply during a market window (April-May) when supplies are low and prices high. The farmers are located in a region where the climate allows for this practice. Whereas Syngenta had the supply, Bimandiri had the market in the form of its relationship with Carrefour. The four-way partnership of farmer group-Syngenta-Bimandiri-Carrefour provided great benefits to each partner. These partnerships represent the wave of the future in FFV retailing in Indonesia and AMARTA can assist in identifying and fostering additional partnerships of this nature.

Assisting farmer groups in more value-adding activities: For example, Bimandiri works with what they call rural producer organizations (RPOs), groups of buying agents (these may be lead farmers) with sub-contracted farmers for each agent organized around a particular product. The wholesaler wants to increasingly shift toward a pure relationship management role whereby the RPO does the sorting & grading, washing (e.g., tomatoes are washed by hand without water) and simplified packaging (e.g., crates) and delivers directly to the stores (possible using rented transportation). Bimandiri communicates the supermarket's orders to the RPO (and vice versa the RPO's product availability to the supermarket), pays the farmers COD while collecting payment from the supermarket (for a 5% fee) and provides technical advise and inputs such as packaging materials (where needed) to RPO. This arrangement allows for more value-adding at the farm level and at the same time addresses some key capacity constraints of the farmers (communication, payments). Bimandiri is developing such RPOs for three products: mango, tomato and watermelon. AMARTA can assist by providing training to

the farmers, facilitating credit for cold storage investments (pre-cooling directly after harvest), assisting farmers in accessing markets for lower quality grades and assisting Bimandiri with increasing their working capital capacity.

Using government owned commercial farms (PD) to organize farmers: Tiara Dewata supermarket in Bali gets most of its local vegetable supplies from a government-owned but commercially operated farm (Perusahaan Daerah, PDs) located in the Dusun Kembang Merta Village of Candi Kuning – Tabanan Bali. These farms are in the 5-10 ha size category and are equipped with an insulated truck and a pack house with running water. Cold storage facilities are present as well but are broken down so pre-cooling before pick-up is currently not done. Greenhouses are there, but are limited. Irrigation is very limited and dependent on expensive tap water. The PD farm management provides inputs and part of the land to some 10 farmers who then grow vegetables according to the supply program given by the supermarket. The vegetables are transported by the PD to the supermarket's DC in Denpasar. Input costs are deducted from the supermarket's payments and the operating profit is shared (bagi hasil) 50/50 between the PD and the farmer. That the model is bringing benefits to the farmers is indicated by the fact that they have started to make investments in greenhouses (for high value items such as herbs) using their own retained earnings. This model is functional and seems to hold potential for replication, but training on GAP and improved physical infrastructure are needed. Similar PD farms could link up with other supermarkets in other regions based on a model developed with Tiara Dewata. AMARTA could assist with training of farmers on GAP and post-harvest handling, facilitating access to credit to improve the physical infrastructure (cold storage, greenhouses, irrigation) and designing a co-ownership structure of these assets as a separate profit center such that it ensures their good maintenance.

Appendix 1: List of Key Informants

No.	Name	Position	Company	Address 1	Address 2	City	P. C	Phone #	Fax #	Mobile
1	Sandredo, Ir		Bimandiri	Jl. Panorama No. 54	Haurpungkur, Lembang	Bandung	40391	(62-22) 278 7139	(62-22) 278 7139	0816 192 914
2	Denny Hidajat		Bimandiri	Jl. Panorama No. 54	Haurpungkur, Lembang	Bandung	40391	(62-22) 278 7139	(62-22) 278 9619	0812 207 2972
3	Sudiadharma		Bimandiri	Jl. Panorama No. 54	Haurpungkur, Lembang	Bandung	40391	(62-22) 278 7139	(62-22) 278 9619	0815 9544 047
4	Pepen		Bimandiri	Jl. Panorama No. 54	Haurpungkur, Lembang	Bandung	40391	(62-22) 278 7139	(62-22) 278 7139	0812 233 6557
5	Ir. Haniwar Syarif	Direktur Eksekutif	NAMPA	Jl. Pembangunan II No. 27	Jatibening I. Pondok Gede	Bekasi	17412	(62-21) 9290 7948	(62-21) 8499 8279	0856 789 8657
6	Handaka Santosa	Chairman	Indonesian Retail Merchants Association	E-Trade Building, Ground Floor	Jl. KH. Wahid Hasyim No. 55	Jakarta	10350	(62-21) 315 4241	(62-21) 3192 3267	
7	Satria Hamid Ahmadi S	Secretary Executive	Indonesian Retail Merchants Association	E-Trade Building, Ground Floor	Jl. KH. Wahid Hasyim No. 55	Jakarta	10350	(62-21) 315 4241	(62-21) 3192 3267	
8	Fahwani Y. Rangkuti	Marketing Specialist	USDA - Foreign Agricultural Service	US Embassy	Jl. Medan Merdeka Selatan # 5	Jakarta	10110	(62-21) 3435 9169	(62-21) 3435 9920	0812 108 3330
9	Tomy Perdana	Secretary	Center for Agricultural Policy and Agribusiness Studies	Jl. Sekeloa Selatan I		Bandung	40132	(62-22) 733 0563		0811 215 246
10	Anis Setijawan	Senior Sales Development - Fresh Product	Carrefour	Carrefour Lebak Bulus, 3rd Floor	Jl. Lebak Bulus Raya No. 8	Jakarta	12310	(62-21) 2758 5831	(62-21) 2758 5777	
11	Steven Tan	Sr. Fresh Merchandising	PT. Hero Supermarket Tbk.	Gedung Hero II	Jl. Jend. Gatot Subroto No. 177A	Jakarta	12870	(62-21) 835 6555	(62-21) 835 2682	0811 989 139
12	Gandhi Hadiwitanto	GM - Fresh Purchasing	PT. Hero Supermarket	Gedung Hero II	Jl. Jend. Gatot Subroto No. 177A	Jakarta	12870	(62-21) 828 2068	(62-21) 835 2682	0811 853 654

No.	Name	Position	Company Tbk.	Address 1	Address 2	City	P. C	Phone #	Fax #	Mobile
13	Tatang Theo Hadinata	Owner	Saung Mirwan	Desa Sukamanah, Kampung Pasir Muncang	Kecamatan Megamendung	Bogor		(62-251) 241 269	(62-21) 241 268	
14	Pri Joestiadi	Advisor	Adib Food Supplies	Jl. Tukad Pancoran III/2	Denpasar	Bali		(62-361) 261 824	(62-361) 257 203	0812 3838 500
15	Nofian Hadi. S	Branch Manager	Adib Food Supplies	Jl. Puskesmas Lama No. 2 RT 4 RW 1	Kebagusan, Pasar Minggu	Jakarta		(62-21) 780 7795	(62-21) 78844924	
16	Ben Rippel		Big Tree Farms	#36, Jl. Bypass Ngurah Rai	Kesiman, Denpasar Timur	Bali				
17	Agus Herry Ariesta	Director	Big Tree Farms	#36, Jl. Bypass Ngurah Rai	Kesiman, Denpasar Timur	Bali	80237	(62-361) 461 978	(62-361) 461 978	
18	Bill Busch		WBN Lotus	Jl. Batas Kangin No. 2	Jimbaran, Denpasar	Bali	80364	0361 701650	0361701007	
19	Flora Chrisantie	Management Representative	Ranch Market	Jl. Raya Perjuangan No. 11	Taman Kedoya Permai, Kebon Jeruk	Jakarta	11530	(62-21) 531 0059	(62-21) 531 0255	
20	Dra. Ratnawati	Pimp. Unit. Pemb. FF	Tiara Dewata	Jl. Tunjungsari 7X	Denpasar	Bali	80111	(62-361) 8444560	(62-361) 8444551	
21	Alexander		Tiara Dewata	Jl. Tunjungsari 7X	Denpasar	Bali				
22	Deni Abdullah	Bureau for International Technical Cooperation	State Secretariat Indonesia	3rd Building, 4th Floor	Jl. Veteran No. 18	Jakarta	10110	(62-21) 384 2640		
23	Richard Bromm	Director	PT. Kapol Antar Nusa (Organic Producer)	Cigombong – Bogor	Jl. Talaud No 7 C-D J	Jakarta	10150	(62-21) 631 3186	(62-21) 631 3247	
24	Purbo Winarno	Chairman	Association of Indonesian Organic Producers	Jl. Taman Malaka Selatan	Buaran Regency A-28	Jakarta		021-8690 1023	021-86901004	
25	Soebagio	Coordinator for	Association of	Jl. Dato		Jakarta				

No.	Name	Position Incountry Cooperation	Company Indonesian Organic Producers	Address 1 Tonggara 18 Kramat Jati	Address 2	City	P. C	Phone #	Fax #	Mobile
26	Luky Irvan	Public and Relation	Association of Indonesian Organic Producers	Jl. Kweni 36 Yado Radio Dalam		Jakarta				
27	Yulia Dhianawati	Secretary General	Association of Indonesian Organic Producers	Jl. Tanjung V Blok H/7 Rancho Indah,		Jakarta				
28	Wita Hardi	Coordinator for Overseas Cooperataion	Association of Indonesian Organic Producers	Jl. Cikajang No 30 Kebayoran Baru		Jakarta				
29	Henry Harmon		Winrock International	Jl. By Pass Ngurah Rai 88	Sanur, Denpasar	Bali	80228	0361-288 124		
30	Made Utama	Lecturer	Udayana University	Bukit Kampus Jimbaran,	Jimbaran	Bali		0361-701801	0361-701801	
31	Haviluddin	Director	PT. Agribistan	Kompleks Sukarami Indah Nlok C4 No. 7-10	Kelurahan Kebun Bunga	Palembang	30152	(62-711) 419918	(62-711) 416416	
32	Suryana Sofyan	Director	Arssel International	Jl. Pesanggrahan Raya No. 2 B	Kebon Jeruk	Jakarta	11620	(62-21) 5890 3307	(62-21) 587 3492	

Appendix 2: List of Supermarket Contact Information

No.	Supermarket Name	Address 1	Address 2	City	Post Code	Contact List	Position	Phone #	Fax #	Email Address
1	PT. Alfa Retailindo Tbk	Jl. MH Thamrin No. 9	Cikokol, Tangerang	Banten	15117	Imam Jaya Rahmat	National Perishable Manager	(62-21) 554 3445 / 8070 / 554 6726	(62-21) 554 8084 / 8083	irahmat@alfa-retail.co.id
2	Borma Pasar Swalayan	Jl. Dakota No. 109	Gunung Batu	Bandung		Ms. Evi Yulviana, SE. Ak		(62-22) 600 6964/2267; 602 763/4	(62-22) 600 6980	
3	Chandra Supermarket					Mr. Hendra Bunawan		(62-721) 258 887	(62-721) 269 816	chandra@lampung-wasantara.net.id
4	D'Best	Mall D'Best 4th Floor	Komp. Mahkota Mas, Cikokol	Banten		Ms. Lia Tesalonika	Purchasing Manager	(021) 554 3305	(021) 554 3351	lia_tesalonika@yahoo.com
5	D Gelael Supermarket	Jl. MT. Haryono Kav. 7		Jakarta	12810	Mr. Hasan Fahmi	Perishable Manager	(021) 829 8390	(021) 829 8387	
6	Hari Hari Pasar Swalayan	Jl. Pluit Karang Karya II Blok A kav 16	Pergudangan Pluit	Jakarta		Mr. Agus Wijaya	Buyer Fresh	(021) 6660 5188	(021) 6660 5211	
7	PT. Lion Superindo	Jl. Ancol I No. 9 – 10	Ancol Barat	Jakarta	14430	Mr. Ronny Handoyo	Perishabe Buying Manager	(021) 690 5876	(021) 690 0031	
8	PT. Makro Indonesia	Jl. Lingkar Luar Selatan Kav 6	Ciracas	Jakarta	13750	Ms. V. Danik Wrestiningsih	Merchandise Manager	(021) 840 4080	(021) 840 4085	danik@makro.co.id
9	Naga Supermarket	Jl. Raya Bogor Km 26	Ciracas	Jakarta		Mr. Agus Mulyadi	Fresh Food Manager	(021) 872 8787	(021) 871 5042	
10	PT. Ramayana Lestari Sentosa, Tbk	Jl. KH. Wahid Hasyim No. 220 A-B		Jakarta	10250	Wira Chandra	General Manager	(021) 391 4566	(021) 390 2824	

No.	Supermarket Name	Address 1	Address 2	City	Post Code	Contact List	Position	Phone #	Fax #	Email Address
11	PT. Subur Makmur Sentosa (Subur & Subur)	Jl. Sutopo No. 1	Tangerang	Banten	15111	Djadjang Mihardja		(021) 552 3671	(021) 7486 2673	
12	PT. Panen Lestari Internusa (Sogo Supermarket)	Wisma 46, Kota BNI, Lt. 45	Jl. Jend. Sudirman Kav. 1	Jakarta		Mr. Widya Laksono	Perishable Manager	(021) 5799 3455	(021) 5799 3477	
13	PT. Tip Top	Jl. Raua Bali Pustaka Timur No. 31 – 35		Jakarta		Mr. Afif Rusman, MBA	Marketing Director	(021) 489 2154	(021) 471 3062	afif@tiptop.co.id
14	PT. Supra Boga Lestari (Ranch market)	Jl. Raya Perjuangan Taman Kedoya	Permai No. 11, Kebon Jeruk	Jakarta		Mr. Nugroho Setiadharma	Pres - Director	(021) 531 0059	(021) 531 0255	nsetio@cbn.net.id
15	Setiabudhi Supermarket	Jl. Dr. Setiabudhi No. 42 - 46		Bandung	40141	Mr. Piersen Gozal		(022) 235 000	(022) 203 5958	setiabudi@idola.net.id
16	Toserba Yogya	Jl. Sunda No. 83		Bandung	40112	Mr. mario Margiono	Director	(022) 420 7288	(022) 423 6239	mario.margiono@toserbayogya.com
17	PT. Matahari Putra Prima Tbk	Jl. Boulevard Palem raya No. 7	Lippo Karawaci	Jakarta		Mr. Ong Thiam Yoe	Director Merchandising - Fresh	(021) 546 9333	(021) 547 5214	ong.thian.yoe@matahari.co.id
18	PT. Boga Catur Raya (Kemchicks)	Jl. Kemang raya 3 -5		Jakarta		Mr. Arif Budiono		(021) 7179 0065	(021) 719 4543	kemchicks@cbn.net.id
19	Healthy Choice	Komplek Graha Mas Blok A 6 - 7	Jl. Raya Perjuangan, Kebon Jeruk	Jakarta	11530	Mr. Stevan Lie		(021) 530 5665	(021) 530 3950	stevan@healthychoiceindonesia.com
20	PT. Hero Supermarket	Gedung Hero II	Jl. Jend. Gatot Subroto 177A	Jakarta	12870	Mr. Steven Tan	Sr. Fresh Merchandising	(021) 8378 8096 / 835 6555	(021) 835 2682	steven_tan@hero.co.id
21	Giant	Gedung Hero II	Jl. Jend. Gatot Subroto 177A	Jakarta	12870	Mr. Gandhi Hadiwitanto	GM Fresh Merchandise	(021) 8378 8388 / 8290	(021) 8378 8288	gandhi@hero.co.id

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