DISCUSSION PAPER / 2009.03

Agrarian Reform in the Philippine Banana Chain

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Comments on this Discussion Paper are invited.

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Contents

Abstract

The Comprehensive Agrarian Reform Program (CARP) of 1986 had been the most far reaching postwar institutional change in rural Philippines. To evaluate the dynamic impact of CARP in the banana sector, we have compared the development of smallholders in both the domestic market and export chains. For exports the reform introduced contract agriculture between cooperatives of small Cavendish banana growers and export firms.

Small farmers of banana cultivars like Lakatan supply the crop individually to open domestic market channels. Incomes and living conditions of reform beneficiaries improved significantly compared to former plantation workers wages, but remained below the official family living wage rate. Per Kg. of bananas the income of non-reformed domestic market growers has been of the same magnitudes as for the export chain. However, the percentage of the latter has been much lower in terms of the final consumers' prices. The farmers of the domestic market have also more upgrading opportunities to organize cooperatives and reduce production and transaction costs. The export contract growers have already cooperatives and for upgrading will need the consent of powerful downstream agents in the chain. The reason for the limited impact of CARP is the power concentration by five multinationals and four influential Filipino families, which dominate the profitable wholesale supply and export stages of the banana chain.

Résumé

Réforme agraire dans la Chaîne bananière philippine

Le Comprehensive Agrarian Reform Program (CARP - Programme global de réforme agraire) de 1986 fut le changement institutionnel le plus profond de l'après-guerre dans les zones rurales des Philippines. Pour évaluer l'impact dynamique du CARP dans le secteur bananier, nous avons comparé le développement des petits cultivateurs sur le marché domestique et dans les chaînes d'exportation. Pour les exportations, la réforme a suscité l'apparition de l'agriculture contractuelle entre les coopératives de petits cultivateurs de bananes Cavendish et les sociétés d'exportation.

Les petits cultivateurs de cultivars de bananes comme la Lakatan fournissent leur récolte individuellement aux canaux ouverts du marché domestique. Les revenus et les conditions de vie des bénéficiaires de la réforme se sont améliorés de façon significative en comparaison avec les anciens salaires des travailleurs des plantations, mais sont néanmoins restés sous le seuil officiel du salaire de vie familial. Par kilo de bananes, le revenu des cultivateurs non concernés par la réforme et qui fournissent le marché intérieur a connu les mêmes niveaux que ceux qui fournissent la chaîne d'exportation. Cependant, le pourcentage de ces derniers était beaucoup plus faible par rapport aux prix finaux à la consommation. Les cultivateurs du marché intérieur ont également plus de possibilités d'extension pour organiser des coopératives et réduire les coûts de production et de transaction. Les cultivateurs contractuels à l'exportation disposent déjà de coopératives et auront besoin, pour prendre de l'extension, du consentement de puissants agents situés en aval de la chaîne. La raison de l'impact limité du CARP est la concentration de pouvoir entre les mains de cinq multinationales et de quatre familles philippines influentes, qui dominent les segments profitables de la vente en gros et de l'exportation de la chaîne bananière.

1. Introduction

In the Philippines, the banana industry is a lucrative business that expectedly draws the interest from foreign corporate investors to small individual farmers, particularly those who were able to receive ownership of lands they previously worked on, through the Comprehensive Agrarian Reform Program (CARP). Basically, the profitability lies in the consistent demand it has been receiving from consumers of both domestic and international markets, over the past years. However, there are certain limitations such as production and marketing constraints to deal with by small farmers, before profits can take form. In addition, operations in the domestic and international market channels are distinct from each other, which makes it relatively difficult for a grower who is interested to switch from one part to the other of the banana industry.

Banana producers, usually individual farmers, sell their Lakatan bananas, a main local cultivar, in an open domestic market. As the name implies, they may sell the harvest to anyone i.e. traders or directly to local consumers, as long as they may get profit and cover the production costs. They also need not to worry much about quality standards or production volume because the fruits in the local market are generally bought by consumers with varying preferences.

Growers of Cavendish bananas, which are either members of banana cooperatives or individual sellers as owners of large plantations, sell to multinational or national exporting firms. Since the export market serve to foreign consumers, there are a number of quality standards to be met depending on the country of destination and this entails additional technology and labor or simply put, more costs. Hence, it is rational to come up with a significant volume for every shipping or delivery to the destination country so as to be cost-efficient.

Previously, it has been observed that in terms of market access, banana contract farmers for the export market have the advantage over those of the domestic market. However, small farmers could not readily participate in the export market, because they lack economies of scale and could not comply with other conditions. To resolve this matter, small farmers have joined cooperatives with CARP assistance, which consolidate the harvests of all members and as one organization engage itself to a grower contract with a multinational or national exporting company. Another option is to establish joint ventures in farm management or long-term lease with landowners, though these options tend to be similar to the farmer-landowner relationship as before. It is contract growing or entering to a growership agreement that has been supported by most banana producers and traders.

Hence, this paper would like to elaborate on the impact of the agrarian reform on the dynamics of the banana chain in the Philippines. Specifically, the objectives are: (i) to compare the economic effects on individual small growers producing for the domestic market with cooperative export contract growers who are CARP beneficiaries; (ii) to estimate the income and employment generation effects of both domestic and export markets along the whole chain; and (iii) to propose measures to improve the position of the small growers who are and those who are not reform beneficiaries in the banana chain.

Section 2 will follow with the conceptual framework that will highlight the theoretical advantages and disadvantages of the export contract institutions compared to the open domestic market; it briefly discusses the agrarian reform intervention by these institutions and how it affected the banana industry; and provide additional GCC theory reading on governance power, institutional arrangements, and upgrading opportunities for the small growers. Section 3 will then provide an empirical overview of the Philippine banana industry focusing on the province of Davao as the study area for Cavendish exports. Moreover, a deeper and more specific analysis of the contract and spot markets in the banana sector will be made. Section 4 will present an extended version of the domestic and export markets dynamics, by discussing the income effects of the different actors in the chains. Lastly, the paper will end at Section 5 with conclusions and possible upgrading options for small farmers in both domestic and export markets.

2. Agrarian Reform to Access Export Chains

As one of the main factors of agricultural development, land distribution is a very good means to improve the wellbeing of the rural poor (Griffin et al., 2002; Rigg, 2006; Kay, 2006). This could be part of an **agrarian reform**, which may change the rural institutional context considerably in a country. If the land will be utilized efficiently and productively, then under certain conditions this may bring in more employment and income for the household. Ownership of land can also give the rural poor a boost of self-confidence and improved outlook on their lives. In this regard, several countries such as Japan, Korea, Taiwan, Bolivia, Chile and Philippines, implemented agrarian reform, with an overall goal of redistribution of agricultural lands to the rural poor.

Borras and Mckinley (2006) distinguished state-led from market-led agrarian reforms. For the state-led agrarian reform, they emphasized that its success as in the case of Japan depends not only on the organization of recipients of agrarian reform land but also on the support from the government by public investment, credit and technical assistance. One major criticism on state-led agrarian reform is that it may give way to market distortion and the neglect of commercialization. This resulted in the creation of market-led agrarian reform with emphasis on the functioning of land markets, as supported by most international financial institutions (for a recent example see World Bank, 2007: 96-157). However, market-led agrarian reform just added more problems to the situation. "In general, the market model has under-estimated the power of large landlords and capitalist farmers (who maintained considerable political as well as economic power) and over-estimated the power of the landless and land deprived" (Borras 2005; Borras and Mckinley, 2006: 2). In a comparative study of agrarian reforms in Taiwan and El Salvador, Pelupessy (2000) showed how the first was successful with state interventions in the main land, agrarian produce and inputs markets and neutralizing landlords' influence by offering opportunities in urban investments. Land redistribution in El Salvador turned out to be much less favorable because input and produce markets were left untouched and big landowners could affect the process negatively (Pelupessy, 2000). Since what can be observed in the Philippines had been a mix of state-led and market-led reforms, it would be relevant to consider how this had affected the bananas as an important agricultural commodity.

The agrarian reform of the 1980s made landworkers the owners of their land, supported the establishment of cooperatives and introduced contract agriculture for the export markets. In this way the new banana smallholders could have access to the export channels of their former multinational or national landowners (de Leon and Escobido, 2004; Feranil, 2007). **Contract farming** is "an agreement between farmers and processing and/or marketing firms for the production and supply of agricultural products under forward agreements, frequently at predetermined prices" (Eaton and Shepherd, 2001: 2). Basically, the farmers or the sellers will have to supply at a certain time a given quantity of agricultural products that complied with the standards and achieved the desired attributes set by the firms. If all these conditions are satisfied, the farmers are assured of a buyer of their bananas in the harvest season.

Table 1: Advantages and disadvantages of contract farming

	Advantages	Disadvantages
Farmers	· Provision of inputs and production services · Access to credit · Introduction of appropriate technology · Skill transfer · Guaranteed and fixed pricing structures · Access to reliable markets	· Increased risk from the contract · Unsuitable technology and crop incompatibility · Manipulation of quotas and quality specifications by firms · Corruption · Domination by foreign and national monopolies · Indebtedness and over reliance on advances of delivered inputs and technolog
Firms	· Political acceptability · Overcoming land constraints · Production reliability and shared risk by contract · Quality consistency · Promotion of farm inputs use	· Land availability constraints due to contracts · Social and cultural constraints of modernization · Farmer discontent of price conditions · Extra-contractual marketing · Input diversion to third parties

Source: Digal 2007; see text

Processing and/or marketing firms as buyers have to be responsible for providing production support such as: fertilizers, pesticides, packaging materials and technology transfer among others, to guarantee that the farmers will not encounter cultivation problems that may affect the quality and quantity of their output. The interdependence between the farmers and firms reduces the risks and uncertainties related to production and marketing of the agricultural produce. A number of previous studies as Glover and Kusterer, (1990) and Eaton and Shepherd, (2001) have already identified the possible advantages and disadvantages of contract growing, as summarized in Table 1. From this it is clear that contracts need a careful evaluation of both partners, while their costs, benefits and specifications should be carefully weighted.

In order to capture all the relevant aspects aside from contract farming for banana exports and have an integral view of the Philippine banana sector, a **global commodity chain** analysis will be the central part of this paper. Although the focus of the approach is mainly on the international dimension of the chain (Brown et.al., 2010: 8) we will also pay attention to the local and subnational impacts. About 80% of the farmers are small banana growers who operate in domestic and export chains (Feranil, 2007). A commodity chain is "a network of labor and production processes whose end result is a finished commodity" (Hopkins and Wallerstein , 1994). This includes all activities required to bring a product or service from primary production, through the intermediary stages of transformation and trade to final consumers and final disposal after use (Kaplinsky and Morris, 2000). In this study, the final products are the fresh Cavendish bananas for the Japanese consumers and Lakatan bananas for the domestic markets in Metro Manila and Cebu and it also follows that the processes to produce each banana cultivar for their respective markets should be treated separately in two chains. The conduct of a value chain or commodity chain is significant, especially in the present era of globalization because it enables to identify which part of the chain is competent or efficient so that it can be further strengthened or maintained and which part would be better if left outsourced; it also considers the intermediate market sequence between the primary production and final markets, which tends to be of imperfect nature; and lastly, it explains how income or benefits are distributed to participating value generators in the global economy (Kaplinsky, 2005; Pelupessy, 2007). Briefly: who are winners and who are losers? The chain dynamics depend on the input-output system, the geographical location, the institutional context and the governance structure (Gereffi, 1999). The approach has a transnational character and is not restricted by national frontiers, while

it lacks the limitations of state-oriented international trade theories (Diaz, 2003; Wallerstein 2004; Brown et.al. 2010). Both commodity chain and value chain will be used interchangeably in this study and have the same meaning.[1]

A Global Commodity Chain (GCC)consists of "sets of inter-organizational networks clustered around one commodity or product, linking households, enterprises and states to one another within the world economy" (Gereffi and Korzeniewicz, 1994:2). It will be used in this paper because the governance and institutional framework dimensions of the chain are both important aspects in establishing the positions of the reform beneficiaries as export banana contract growers and the farmers serving the open domestic market. The **institutional framework** includes the policies and arrangements of the government, industry regulations and the 'rules of the game' of society, which affect the dynamics of the commodity chain. Since the implementation of the agrarian reform law provided the opportunity for farm workers to become landowners, it also created cooperatives of its beneficiaries (ARB), which enable them to have a significant role in the export industry and to receive benefits as banana growers (de Leon and Escobido, 2004). Therefore, a comparison of their present position with that of individual producers for the open domestic market and not affected by the reform, will be the way chosen to look at the socio-economic impact of agrarian reform implementation in the banana industry.

Moreover, the **governance** or lead power that controls the chain will be considered to identify who are the main drivers of the banana chain that provide additional value to the produce or are able to satisfy the changing consumer preferences. Frequently they operate in the most profitable parts of a chain with the highest entry barriers. There are producer-driven and demand-driven chains according to the nature of the lead firms, capital or labor intensity and their position vis-à-vis consumers markets (Gereffi and Korzeniewicz, 1994). In connection with changing consumer preferences, an inevitable shift from producer-driven to demand or buyer-driven can be observed particularly in most agri-food chains. The latter are positioned nearer to the final consumer and are gaining market power and the capacity to vertically coordinate the chain. With the rise of agro-food chains, the need for vertical coordination as complement to market power of the lead firms has increased considerably (Hobbs and Young, 2001; Muradian and Pelupessy, 2005). Pelupessy and Van Kempen (2005) noted that the following factors may change wealthy consumers preferences. First there is a need to have agricultural food produce available at all times and seasons, which could be prepared in the least possible time. Second, there are food items that symbolize the status or prestige of the consumer. There is a constant search for something new in the market. Finally, there are growing concerns on how production processes affect social and environmental conditions.

In the Philippine context, Murray-Prior et al (2006) described the food markets in Mindanao i.e. the wet market as price-driven and the supermarket as value-driven. Wet markets offer less differentiated and competitively priced products with no particular quality and food safety standards. Constant availability may be important for these markets. Supermarkets have to satisfy a number of food quality and safety criteria depending on the type of consumers they are serving because part of their decision to buy also relies on the capacity to pay for a product with all the attributes they are looking for. Consumers may also be willing to pay higher prices for social and environmental concerns. In effect, farmers serving the wet market are different from those in the supermarkets and the former will be limited to sell their produce at lower prices whereas, the latter can achieve higher prices for quality.

[1] Strictly speaking a commodity chain focuses on the material stream of the products, while the second looks at the value generation. But for most chain authors both aspects should be considered.

The governance structure provides a good reference on how gains in the form of income, profit or value-added are distributed among actors in the chain. From this policy makers can understand the appropriate intervention that smallholders need for protecting their gains and upgrading opportunities (Roduner, 2004). Lead firms have the major role in influencing who will have access to markets because they "undertake the functional integration and coordination of internationally dispersed activities" (Humphrey and Schmitz, 2000) and they source out depending on the consumers preferences and standards set by NGOs and government agencies. In effect, producers dealing with big buyers tend to learn fast as they have to satisfy the demands that emphasize on cost reduction, quality and delivery speed. Everything comes with a price, when producers receive much support from their buyers as for instance technical assistance, they have to face more challenges because the distribution of gains within the chain is not to be equally spread among actors. Moreover, studying the interaction of governance power with the institutional context may suggest the need for new government policies or revisions of current laws and regulations, though this would highly depend on the agencies concerned. Donor agencies use studies on chain governance as basis of how to assist those actors with less power and income, i.e. the small and medium producers or farmers. At this point, there is still a lot of work to be done for an effective assistance for smallholders as could be seen with the so-called fair trade certification (Muradian and Pelupessy, 2005).

Upgrading is defined as "the acquisition of technological capabilities and market linkages that enable firms to improve their competitiveness and move into higher-value activities" (Kaplinsky and Morris, 2000). There are three types of upgrading: process upgrading, product upgrading and functional upgrading. Process upgrading is done by "increasing the efficiency of internal processes" in order to perform better with lower costs and higher yields than the competitor. Introduction of new products or enhancing the current product features are some ways of product upgrading. Functional upgrading, aims to add value by changing the set of activities done by the firm or assigning a different function to a specific actor in the chain. An example is the integration of post-harvest transport to the agricultural activities of a farmer.

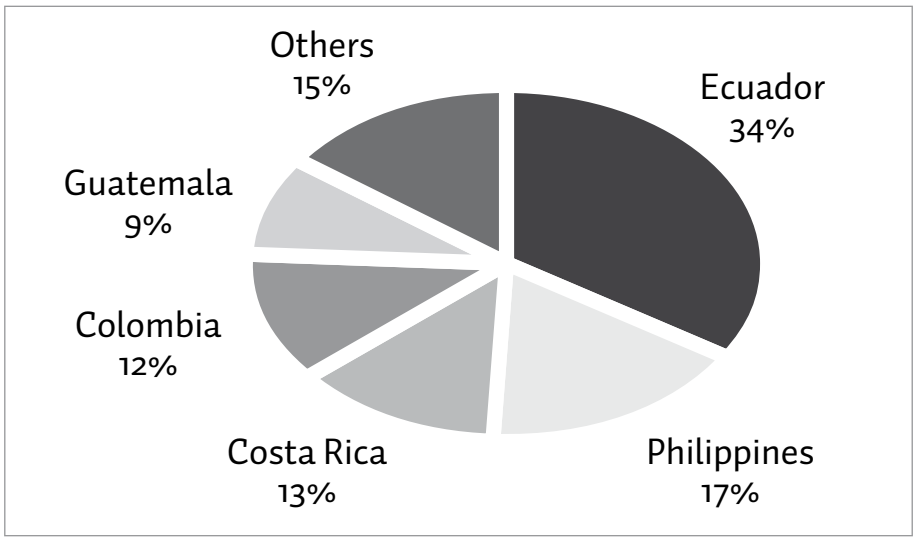
Aside from the three mentioned types of upgrading, Humphrey and Schmitz (2002) added inter-sectoral upgrading when actors move into another more profitable chain. The type of possible upgrading depends on the governance and its coordination in the chain. For instance, in chains with quasi-hierarchy coordination when there is only one firm that controls most of the activities in the whole chain, process and product upgrading will be possible. On the other hand, arm's length market relations tend to allow functional upgrading.

Concluding Remarks

Aside from contract growing in the banana export chain, the aftermath of the Comprehensive Agrarian Reform (CARP) implementation should be taken into account when to understanding the governance power and institutional arrangements of the chain. The GCC approach will be the main methodology to be applied used and with the consideration of CARP, our central research question is if at the end of the day in the Philippines the export contract banana growers as reform beneficiaries will be better off than the unaffected individual small farmers cultivating with crops for the open domestic markets. More governance issues, Imperfect markets, vertical coordination and institutional arrangements are expected to be touched upon. Finally, the process, product and functional upgrading options for both categories of smallholders in the banana sector will be examined and compared.

3. Overview of the Philippine Banana Industry

Figure 1 : Distribution of world banana exports, by country origin 2005



Source: FAO (2005)

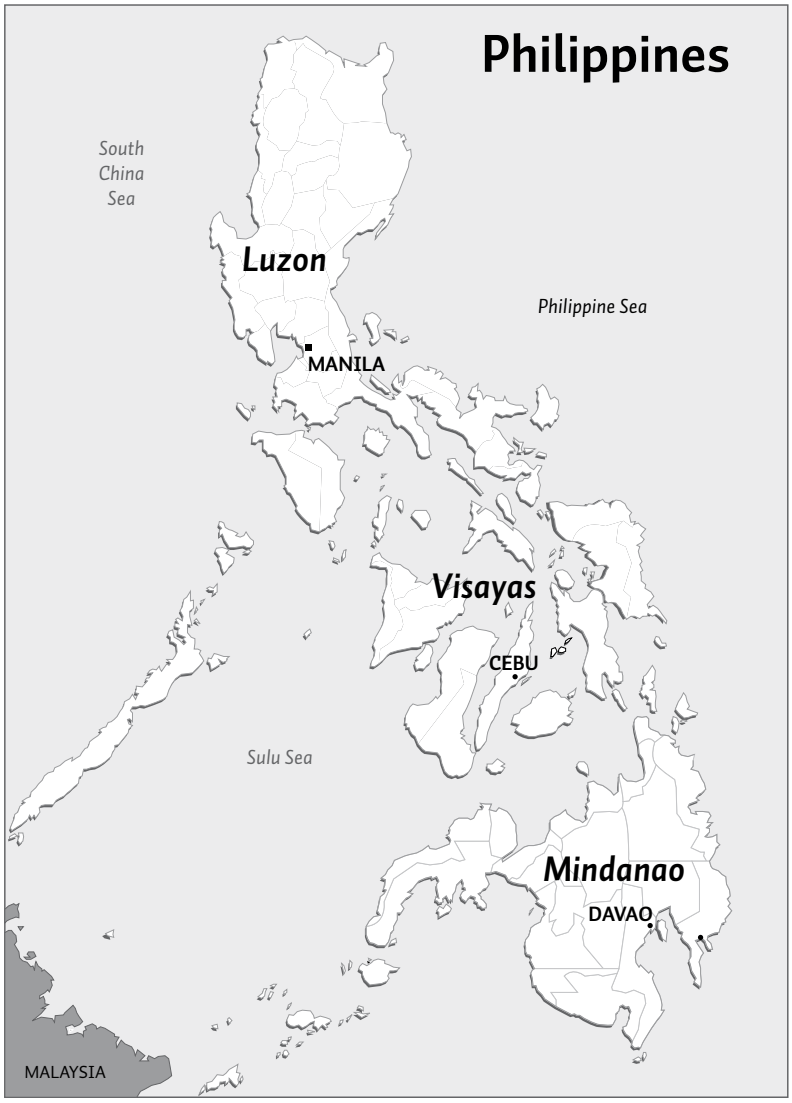
In the Philippines, banana is not only considered a fruit crop that is highly demanded by the domestic market but also it is an established industry that brings in millions of dollars from its export market. In 2007, banana production reached 7.5 million metric tons, a 10% increase from the previous year and is valued at 58.3 million pesos. Banana also holds the fourth position among the major agricultural crops of the Philippines in terms of volume and value of production and tops the list of the fruits division. Although fresh banana exports went down from 2.3 million metric tons in 2006 to 2.2 million metric tons for 2007, the banana sector has maintained its position as one of the top agricultural export products of the country accounting for around US$400 million FOB (Annex 1). Furthermore, according to the 2005 data from FAO, the Philippines ranks fifth among the world banana producers and places second to Ecuador among the banana exporters in the international market, i.e. providing around 17%.

At the country level, banana production in 2007 contributed a 4.21% share to gross output of the agriculture sector (BAS, 2008). In terms of Gross Value Added in agriculture, banana has one of the highest annual growth rates in 2000-2007 that somehow contributed to the overall 3.2% rate of agriculture, as shown in Table 2. Most of the bananas produced in the country come from Mindanao, the southern region as shown in the map. Mindanao is also known as the country's food basket because of its vast agricultural lands and has the favorable environment for cultivation of different major crops.

Table 2: Gross value added in agriculture, by industry 2000– 2007

At constant 1985 prices, in million pesos	2006	2007	Growth rate (%)	2000/2007 Average growth rate %
AGRICULTURE	183,686	191,931	4.5	3.2
Rice	40,987	43,430	6.0	3.9
Corn	14,494	16,054	10.8	5.9
Coconut including Copra	8,302	8,244	(0.7)	2.0
Sugarcane	6,136	5,462	(11.0)	2.4
Banana	6,192	6,819	10.1	6.2
Other Crops	43,559	46,608	7.0	1.9
Livestock	28,397	29,072	2.4	2.4
Poultry	25,016	25,091	0.3	2.8
Agricultural activities & services	10,603	11,151	5.2	4.7

Source: National Statistical Coordination Board



In fact, around 79% of the total bananas produced by the Philippines in 2007 originated from Mindanao. In Mindanao, the province of Davao contributes more than half of the bananas produced in this region or around 42% of the total banana production of the Philippines. Davao also has the largest banana production area of 78,647 hectares or 18% of the total in the country (Annex 2).

Region 11 or Davao Region is composed of Davao Oriental, Davao del Norte, Compostela Valley and Davao City where major multinational export companies such as: Dole, Del Monte and Chiquita have positioned themselves in each of these provinces. All of these companies own banana plantations in this region and have also big Filipino providers. In this regard, we chose the region of Davao as main area of study, because here Cavendish bananas for export are extensively grown on a total of 44,691 hectares. For domestic market Lakatan bananas we use information of the region 4A Calabarzon and region 12 Soccksargen on Mindanao as indicative for this cultivar. In Table 3 the Lakatan and Cavendish farm size distributions are approximated and compared based on census information of 2002.

Table 3: Size distribution of small farms (%)

Region Size (Ha.)	11	12	4A
< 0.5	10.1	6.6	18.4
0.5 – 0.999	13.5	12.7	15.6
1.0 – 1.999	27.9	32.5	23.8
2.0 – 2.999	17.6	19.2	13.6
3.0 – 4.000	16.4	15.8	14.5
> 5.0	14.0	13.2	14.1
All (%)	100	100	100
All (absolute)	116,322	31,094	11,862

Note: Region 11 is indicative for Cavendish. Regions 12 and 4A are indicative for Lakatan
Source: Census 2002 and PCARRD

In the Davao region, about 72% of the total banana production during 2002 was for Cavendis. Translating this percentage, it has been estimated that at least 22,000 banana farms were only planted with Cavendish bananas and the majority around 60% of these farms are fully owned or under owner-like possession based on tenureship. Calabarzon region has accounted around 9% of its banana production to Lakatan bananas or about 2,000 farms for the said cultivar. About halve of the Lakatan banana farms in the region were fully owned or under owner-like possession. In Soccksargen 25% were Lakatan on 4000 farms and 60% of which are under owner tenureship. In the three regions, farms with areas of 1.0 to 1.9 hectares are the most numerous. It may be inferred especially for Davao region that probably these farms with relatively small size came from the redistributed lands under CARP. In region 4A the very small plots of <0.5 ha. are relatively more frequent.

Table 4: Total Banana production and share of Cavendish and Lakatan

Philippines	2002	2003	2004	2005	2006	2007
All (MT)	5,274,826	5,368,977	5,631,250	6,298,225	6,794,564	7,484,073
Cavendish (%)	34.3	35.4	37.8	39.5	41.4	44.4
Lakatan (%)	12.9	12.6	12.7	11.3	12.3	11.7

Source: Bureau of Agricultural Statistics (2008)

Meanwhile, banana farmers and growers continue to serve the increasing demand of both domestic and export markets. In fact, for the period of 2003 to 2007, banana supply to the domestic market increased from 30.12 to 41.02 kilograms per capita per year. As for the export market particularly in Japan where Philippines is a major banana supplier, there is a huge demand for bananas brought about by the craze of Japanese women for the so-called "banana morning diet",[1] hence banana growers are encouraged to seize this opportunity. In Table 4 one can observe that the share of export Cavendish is strongly increasing within the rising total production of bananas. The Lakatan harvest has also gone up, but its share is almost stable around 12%.

3.1 Bananas for different markets

To have a better understanding of the Philippine banana industry, it is essential to distinguish the products sold at the domestic and international markets (Van de Kasteele, 1998). In the Philippines, there are about 80 banana cultivar varieties available for planting. As identified in the Banana Commodity Profile of the Philippine Department of Agriculture (DA), the Cavendish banana is normally grown in plantations at Mindanao and sold fresh in the export market. Cardaba bananas are grown to supply the banana chips, also an export product of the country. On the other hand, Latundan and Lakatan varieties are produced for the local consumers of Luzon and Visayas regions. Bananas are easily grown in the countryside either as a mono crop or as intercrop, which is usually planted under coconut trees.

According to the DA the Cavendish banana plant usually reaches five to ten feet high. Its fruit is bigger than the normative Bungulan banana. Its peel is green when unripe and yellow when ripe. After a gestation period of six to eight months, this banana variety has good export quality. Lakatan banana plants grow to a height of five to nine feet. Its fruit is round and seedless. It has a thick peel that is green when unripe and yellow-orange when ripe. Gestation period of this cultivar is 14 to 15 months.

Export-directed plantations are composed of "different stages of growing and ripening, traversed by irrigation systems and banana rails to the packhouses" (Van de Kasteele, 1998) and with harvests ranging from 2,000 to 2,500 boxes of 13 kg per hectare. Smallholdings oriented at the domestic market give bananas produced with lower inputs and planted at less productive soils resulting into lower quality bananas and productivity ranging from 200 to 1,000 boxes per hectare per year.

[1] http://www.freshplaza.com/news_detail.asp?id=35132

3.1.1 Open Domestic Market

For the open domestic market in the Philippines, the study of Aquino et al (2007), which looked into the marketing efficiency of small growers particularly of Saba (Musa balbisiana), Lakatan (Musa acuminata L.) and Latundan (Musa x paradisiacal) in Luzon, provides a good description of the local banana sector. They described the market for these small-hold bananas, as dispersed and the presence of "layers of middlemen" seems to be essential to facilitate trading from production areas to consumer markets. The authors argue that this situation creates transaction costs by asymmetric price information, opportunistic trader behavior, non-differentiated producer pricing and rent seeking authorities. Therefore chain coordination is necessary (Aquino, et al., 2007) Furthermore, they also identified major production constraints faced by small banana farmers, such as low productivity, shortage of disease-free and high-yield planting materials and poor farm management, which can be linked mainly to the absence of scale economies. In terms of marketing, small farmers lack access to reliable price information. As a result, they will accept any farm gate price offered to them by traders. In fact, practically all smallholder banana growers in Luzon claimed that buyers set the price (Lantican, 2008). In addition, banana farmers receive the same prices for their bananas regardless of size and quality; hence, there is no incentive for them to improve the quality or to standardize their produce. Consequently, there has been a project[1] of PCARRD that aims to convince banana farmers to organize themselves, which would eventually lead them to significant volumes of bananas and more efficient marketing. However, this project failed to bear results as banana farmers consider collective marketing as too risky for them. They just want to be growers and not entrepreneurs yet, while apparently bananas serve as their supplemental income only. They also showed lack of trust of other banana farmers, which make it difficult to organize them in groups (Aquino et al, 2007). Thus, smallholder banana farmers continue to operate individually in the open domestic market in the Philippines.

3.1.2 Export Contract Market

The export contract market is largely about the growing arrangements introduced by CARP between banana cooperatives or family-owners of banana plantations with multinational exporting companies as their business counterparts. According to Puyod (2007: 89) contract growing in the Philippine banana industry refers to an agreement of a grower with an export company to supply the harvest, which is packed under the exporter's brand. The farmer manages the farm and is responsible for the risk of weather fluctuations, harvest losses, rising input and labor costs, whereas the company arranges the export and corresponding logistics and paperwork.

Furthermore, in most interviews farmers and planters have identified three types of contracts. Ex-farm is an agreement wherein farmers are responsible for planting the banana until the plant bears the fruits and the contracting firm will take charge after the harvest. Ex-patio extends the responsibility of farmers from planting the banana until packing, boxing and branding the harvest and the exporting company would just collect the boxes and haul it from the packinghouses to the seaports. Lastly, ex-wharf attributes most risks to the farmers because they have to oversee all

[1] "Analysis of marketing efficiency and development of innovative marketing strategies for smallhold banana growers" (Phase 2)

the activities from planting the bananas, harvesting, boxing, hauling until the fruit reaches the seaport. Most export contracts have an ex-patio character.

3.2 Agrarian Reform

The discussion of contract growing specific to the Philippine banana industry includes the implementation of the Comprehensive Agrarian Reform Program (CARP) or Republic Act 6657 which aimed to redistribute agribusiness lands operated by multinational companies (MNC) and other Filipino commercial farms to qualified farm workers. The original plan was to implement it on June 1987 but it was soon deferred to June 1998.

The ten-year extension period was supposedly to prepare the farmers to become landowners but apparently, potential agrarian reform beneficiaries (ARB) had to prepare themselves to more unexpected and unwanted changes in the implementation of CARP. For instance, it was also during this period that the opportunity was given to amend the implementation, e.g. by Administrative Order No. 6 of 1998, which disqualified retrenched farm workers to become beneficiaries of CARP. Consequently, landowners tried to retrench a number of their farm workers, especially those who disagree with the management, in order to retain their share of farmlands. Furthermore, several studies (Ang 2001; De Leon and Escobido 2004) identified quite a number of institutional and practical loopholes of CARP implementation, such as: the absence of a definite deadline to defer the land distribution by commercial farms, no clear definition of a *farm worker* and complicated selection procedures of qualified beneficiaries. The right of land valuation was given to landowners, and retention of landowner's control over commercial plantation was made possible through some of the agribusiness venture agreements or (AVA), which led to dependency of an ARB to its former landlord (Annex 3).

Nonetheless, the Department of Agrarian Reform (DAR) recommended a number of AVA options along with the implementation of CARP, among which leaseback and contract growing arrangements have been prevalent in most banana farms. Most farmers would prefer contract growing because it gives them the opportunity to become independent agri-business farmers. However, choosing contract growing over leasehold or other AVA options was not made easy and not free from external pressures. For instance according to farmers in Sto. Tomas, Davao del Norte, strategies that canvassers of corporate growers used to convince farmers to enter into leasehold agreement, which could range from simple gestures like "free car rides, beer-drinking sprees and the promises of huge money and numerous benefits", to coercive ways like "canvassing at night with armed policemen or security guards and firing guns in the air, closing portions of the road and isolating farms …" (De Leon and Escobido, 2004:33). On the other hand, some farmers chose to lease their lands because corporate farms promised them to be maintained in their job along with the wage and benefits they used to receive. Having the CARP lands leased to its previous landowners puts the ARB to an inefficient and less profitable state because lease rental rates are only set according to amortization payments of the land which is determined by the land valuation of the previous landowners. These lease rental rates are quite low and remains valid, in most cases, for a period of 30 years. Another problem with land leasehold stems from the way the farmers spend the lease rental payment they received because more often than not, the money is not spent wisely or worse, results to eventual indebtedness. Hence, contract growing seems to be the better alternative especially in the banana export market although, it is more appropriate for clustered or associated small growers rather than individual ones.

To express in figures the effect of the ten-year deferment period of CARP, De Leon and Escobido (2004) compared the number of distributed banana plantations before and after June 1998 (Annex 4). From the records of DAR Region 11, about 4,132 hectares from 7 banana plantations were redistributed to some 3,222 farmer-beneficiaries in Davao, before June 1998. The major share of the redistributed lands came from Hijo Plantation & Apo Fruits. The firm has the greatest number of farmer-beneficiaries who acquired their farms under a voluntary offer to sell arrangement. After the deferment period in June 1998, there has been a noticeable decline in both the total area distributed of banana plantations to only about 1,982 hectares as well as in the number of farmer-beneficiaries, which went down to 1,919. The average size of redistributed banana land did also decrease from 1.28 has before June 1998 to 1.03 has. In addition to the loopholes of CARP mentioned in the previous paragraph, some of the reasons for the decline of farmer-beneficiaries can be attributed to retrenchments of qualified ARB and unfair labor practice of hiring casual farm workers. In fact, about 20,000 farm workers were retrenched from banana plantations during the deferment period (De Leon and Escobido, 2004: 68).

With regards to income and market access, contract growers of high value agricultural crops, particularly those to be processed and/or marketed for the export market, are expected to receive higher income than independent farmers. This income could even be sustained for a longer period because of the reduced risks (USDA, 2005: 3). Compared to the farmers operating in a domestic market, contract farmers have guaranteed demands and their produce has the potential of reaching more consumers, depending on the capacity and networks of the contracting firms. However, contract farmers do not always achieve the above mentioned advantages, because agribusiness firms may break up their agreement with growers by imposing higher quality standards and enforcing more demanding contracts when market conditions become unfavorable (Echanove and Steffen, 2005: 168) or even when there is oversupply.

3.2.1 Impact on ARB income

Despite the loopholes and controversies that arose with the implementation of CARP in the banana plantations, there were positive results as well in terms of income and well-being of those who got the beneficiary status. In her paper, Feranil (2007) was able to quantify the changes in income of a former worker of a banana plantation compared to when he/she became an ARB. There is approximately a yearly average income[1] of US$5,000 for an ARB member of the Agrarian Reform Beneficiaries Individual Self-Managed Multipurpose Cooperative (ARBI-SM-MPC) and DAPCO United Small Growers Multipurpose Cooperative (DUSGROW-MPC) after the land redistribution from 2000 to 2004. In terms of monthly income, an ARB is estimated to receive around US$400 as compared to the usual wage of US$88 to US$96 for a farm worker before the reform. We may note that this ARB income was also higher than the 2007 rural per capita poverty and food thresholds of the country, i.e. US$236 and US$156, respectively (NSCB, 2007). But the family living wage needed for food and other expenditures to nourish and sustain a family of six was 882 pesos a day or US$601/month in 2008 (Fabros, 2008). The ARB income will cover only less than 70% of his living wage.

[1] All Philippine Peso values were converted to US dollars with the exchange rate of US$1=PhP52.

Given the increase in income of former farm workers who became beneficiary, a number of improvements in their living conditions were also observed. Some upscale houses were constructed, while most houses were remodeled or rehabilitated i.e. "from temporary wooden dwellings to permanent concrete structures" (Feranil, 2007). Some beneficiaries also engaged themselves in other businesses like small stores, small eateries, internet shops among others; while others invested in real estate and bought residential lots in nearby areas. Children of ARB were able to attend school as evidenced by the absence of child labor in the farms of the cooperatives. Other noticeable improvements were the acquisition of vehicles, home appliances, recreation and relaxation activities and extension of social networks (Feranil, 2007).

Concluding Remarks

In the Philippines, the production of bananas was able to increase by 6% annually in the years 2000-2007 to match with the increasing demand of local and foreign consumers. Banana exports may have declined from 2006 to 2007 but still the industry was able to contribute 11% in value of the total agricultural exports of the country and it holds the second rank among the banana exporters in the world. CARP brought improvements of income and living conditions for beneficiaries Notwithstanding the aforementioned, it remains to be seen if the benefits of the institutional changes introduced by the agrarian reform process are sufficiently reaching the small cultivators. Their average income could not cover the living wage for the survival of a family in 2008. A lot of work needs to be done both by the government, NGOs and banana growers to fully maximize the opportunities offered by the domestic and export markets. A more detailed analysis of the two banana chains will be required to evaluate the impact of the lead firms and the institutional environment for the upgrading opportunities of smallholders.

4. Banana Chain Analysis

A Banana Commodity Chain model is designed by combining key concepts from the Banana Marketing Chain of the United Nations Conference on Trade and Development (UNCTAD), the distribution channel as identified by the Pacific Islands Centre (PIC) and the geographical flow of bananas used by Favila (2004). For a clear examination, we will map out two chains: one for the domestic market (Figure 2) and another for the export market (Figure 3). It should also be considered that the organization of production and trade of Cavendish bananas for the export market are different from those serving the domestic market with Lakatan bananas.

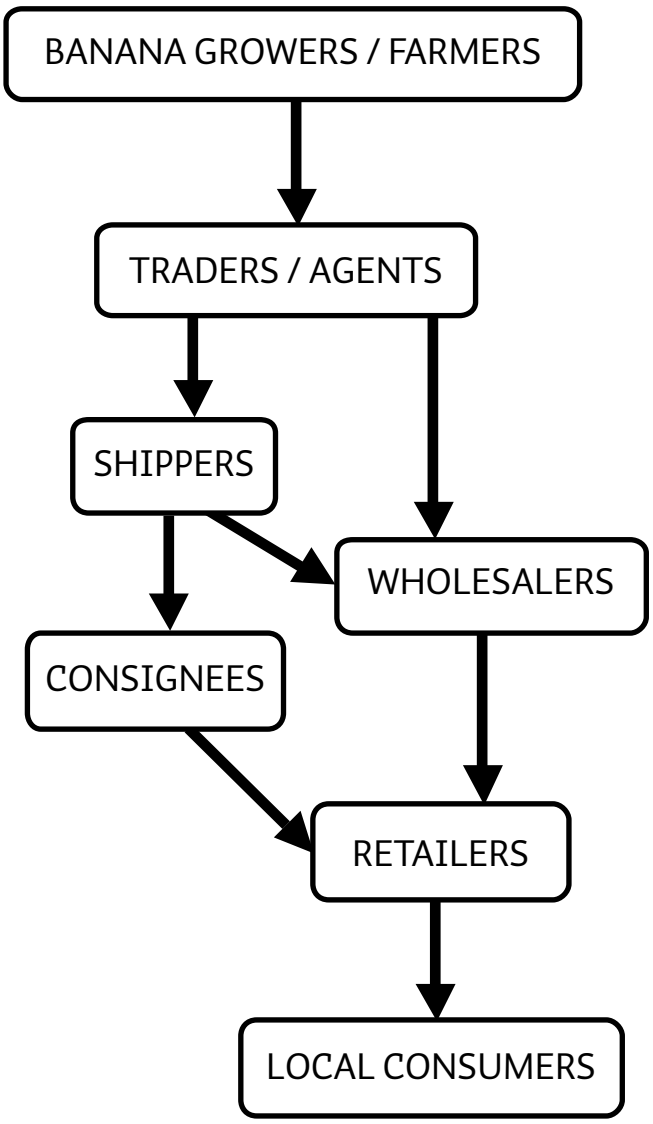
Before discussing each of the value chains, we would like to describe the banana cultivators in general terms because they are operating in the first layer of both. It is important to know and understand the differences and similarities of banana growing in each chain. The Bureau of Agricultural Research (2002) reported that there are about 5.9 million farm households who depend on bananas as their source of income. 80% of the growers are considered small farmerswho own a plot with 5 hectares or less in size and obtain three to ten metric tons per hectare of yield. Large plantations have at least 20 hectares of farm size and obtain at least 20 metric tons per hectare of yield. Given this production capacity, most small farmers cater the domestic market while large ones serve the export market, although the former may also organize themselves in cooperatives and produce together for the export market. Furthermore, the study will give special attention to those farmers who are agrarian reform beneficiaries since CARP has been instrumental to the development of the banana industry. This study will use both primary and secondary data as information for the discussion. Primary data are collected through interviews to members of banana cooperatives in the Davao region and most of them are CARP beneficiaries. Secondary data will be drawn from the results of other studies and published data of concerned government and international agencies.

4.1 Domestic Banana Chain

According to production volume, the majority of Lakatan bananas are grown and harvested in Mindanao particularly from Region 12 or Soccksargen. For this paper, we also use the available secondary data from previous studies, which considered nearby provinces as Region 4A producing Lakatan bananas and selling them to Metro Manila. At this point, it should be clarified that the presented chain assumes that the fruits are sold in formal markets, but there are also a number of informal ways of selling bananas. The very small-scale banana producers offer their fruits just outside the homes or have some of their family members usually the women of the household to sell them from house to house within their locality. Bananas are often sold cheaper under this type of marketing. However, there are also some sellers who price their produce even higher than the standard retail price, particularly when selling in a tourist destination or near the national highways to take advantage of the direct access to consumers.

In Figure 2, the harvest of the farms is sold to traders and considered as bananas originating in both Mindanao and neighboring provinces. In the case of nearby provinces, in e.g. Region 4A traders are normally also responsible for transporting the bananas to the wholesale markets in key cities as Manila, while wholesalers can also buy bananas from Mindanao at the receiving seaports. In effect, the retail markets combine bananas from both nearby provinces and Mindanao.

Figure 2: Banana Value Chain for the Domestic Market



Nevertheless, there are several stages in the chain of bananas coming from Mindanao and it takes a longer route to reach the retail markets in the cities of Manila and Cebu (Lantican, 2008). Traders have to buy and gather many bananas until they reach a given volume in their respective collection centers where these may stay from one to five days. From the traders, the produce would be sold either in bulk or crated to those who will embark the bananas in their ship bound to Manila or Cebu.

This process may take from less than one day to three days. Once the ship reaches the ports of Manila and Cebu, the fruits would be sold to wholesalers and consignees for a specific chain of supermarkets. Stripping or unloading from the ship usually takes four to six hours. The total time involved from the collection centre in Mindanao to the wholesaler/retailer in Manila may take from three to nine days (Lancaster, 2008).

Bananas would then be delivered to retailers in major public markets, shops or supermarket chains. Often, supermarket chains try to get their supplies from Mindanao because those may satisfy the consumer in the upper income bracket or market segment, who demands and is willing to pay for high quality product attributes. In the survey of PCARRD (2005: 37), it was observed that a MNC Dole Philippinesis the major supplier of bananas to most supermarket chains in Metro Manila. However it should be noted that there is no explicit domestic standard that defines the quality Lakatan banana. Domestic consumers, in general, still decide to purchase the fruits depending on the price and specific attributes they are looking for, regardless of the origin.

Some problems observed in the whole process are related to the postharvest and marketing constraints. For instance, since traders have to come up with a certain volume for shipping to Manila or Cebu, they face the risk of post harvest losses, particularly if they do not own the right facilities to store the bananas during the gathering period. Also, there is the problem of lack of coordination since the traders' supply depends on the banana farmers they are able to deal with for that particular harvest and the growers are not obliged to sell their produce to the same trader dealt with in the past. Another thing is that retailers ideally should be provided with market information in order to optimize their sales. However, there is only little market information available so that they would rather be satisfied with any volume of sales, as long as they make profits. The sale by retailers also depends on how the government promotes the nutritional and other qualities of banana consumption.

4.1.1 Price distribution of Lakatan bananas

To estimate the gross value addition made in each stage of the domestic banana chain, the study would first look into the farm gate, wholesale and retail prices of Lakatan bananas in the domestic market using the 2007 data from the Bureau of Agricultural Statistics (BAS). All prices have been converted from Philippine Pesos to US Dollars with the exchange rate of US$1=PHP46, based on the 2007 US Dollar–Peso exchange rate of the Bangko Sentral Philipinas (BSP).

Table 5: Price distribution of Lakatan bananas in the Philippines, 2007

In US$ per kilogram	Region 12 – SOCCKSARGEN (% Share to consumer price)		Philippines (% Share to consumer price)
	Manila	Cebu	
Farm gate Price	US$ 0.21 (37%)	US$ 0.21 (31%)	US$ 0.20 (38%)
Wholesale Price	US$ 0.42 (37%)	US$ 0.53 (46%)	US$ 0.37 (32%)
Retail Price	US$ 0.57 (26%)	US$ 0.69 (23%)	US$ 0.53 (30%)
Consumer Price	US$ 0.57 (100%)	US$ 0.69 (100%)	US$ 0.53 (100%)

Source: Bureau of Agricultural Statistics (2008)

The study assumes that all Lakatan bananas come from Region 12, so the farm gate price of that region would be used as the starting point. It would then follow the domestic track of how the price changes from Region 12 until it reaches the consumer markets in Manila and Cebu. The price distribution for the consumer price of Lakatan bananas in Manila is composed of farm gate price (37%), wholesaler's price increment (37%) and retailer's price increment (26%). The price distribution in Cebu is more or less similar as shown in Table 6.

The higher wholesale increment in Cebu may reflect the greater market concentration. However, one should consider the costs apart from the bananas to get the added value in each stage. As may be seen in Table 5, farmers' net income is much lower.

While it can be observed that individual farmers receive a relatively bigger share from the average consumer price of Lakatan bananas, Table 6 fails also to capture the different pricing systems used at the farm gate level. In 2008, Lantican presented the results of her study with PCARRD about the marketing performance of Saba and Lakatan and one of the aspects she looked into was the pricing system. Aside from the fact that farmers are just price takers of the rate given to them by traders or buyers, the former also have to give quantity discounts, which is done in three ways. First, farmers have to grant an automatic 10% additional volume of bananas as an allowance for losses to traders. Second, in cases when bananas are sold per piece and not by kilogram, they are counted by sets of five and those in excess of the set number will not be paid. Apparently, these excess fingers comprise 15-20% of the marketable surplus. Lastly, small bananas are sold with a discount. Hence, smallhold growers in the domestic market have to bear at least 25% losses from unaccounted bananas, which are most likely to be accounted and sold by the traders as they go along the chain.

Table 6: Estimated costs and returns to a Lakatan banana farmer, 2007

	In US$ per Hectare	In US$ per kilogram
Gross Sales (100%)	7,9201	0.20
Postharvest Loss (30%)	2,376	0.06
Materials and Other Production Costs (35%)*	2,772	0.07
Labor Requirements (6%)*	475.20	0.01
TOTAL COST	5,623.20	0.14
NET INCOME (29%)	2,296.80	0.06

Source: Estimated based on PCARRD (2005)
Updated 2005 data

As may be observed in Figure 2, the wholesale price includes also the first buying and shipping (small) margins. To estimate the costs and net income of a Lakatan farmer in 2007, we first calculated the gross sales or revenue. The study used the assumptions of PCARRD that a hectare of a banana farm has on average 1,800 Lakatan plants with each plant yielding 22 kilograms. The selling price used is the 2007 average farm gate price of Lakatan bananas in the Philippines, which was at US$0.20 (shown in Table 6).

As a result, the gross revenue was measured to be US$7,920 per hectare. The study also considered a postharvest loss for this sample computation and assumed that it is 30% of the gross sales. Postharvest loss was treated as a cost to the farmer and this is consistent with

the assumption of unaccounted bananas in the previous paragraph. Net income of a Lakatan farmer for the domestic market was estimated to be US$2,296.80 per hectare or US$0.06 per kilogram bananas. This is a minimum estimation in the range for an individual grower. Feranil (2007) presented a much higher net income of 62% of the sales for domestic market growers organized in a cooperative. Therefore we estimate net income of a Lakatan farmer ranging from US$0.06-US$0.12 per kg. As a result of the domestic chain dynamics, the monthly income of a Lakatan smallholder may be estimated at about US$190-US$380, depending on the extension of the plot from 1-2 Has and the received price. With a much lower yield of 1,000 boxes per ha., the net income will be US$65-US$130 per month.

4.2 Value Chain for Banana Exports

Figure 3 illustrates the value chain of the Cavendish bananas exported from Mindanao particularly the Davao region to Japan, as the number one destination of banana exports from the Philippines. About 40% is exported to this country, 20% to Iran and 13% to Korea.

Before CARP, there were only the rich families who own most of the agricultural lands who served as growers for foreign exporting companies. After CARP implementation, agricultural lands were redistributed into smaller parcels of land for farm workers. Those who were fortunate to be granted a parcel of land, either leased it back to former landowners and exporting firms or decided to become banana farmers.

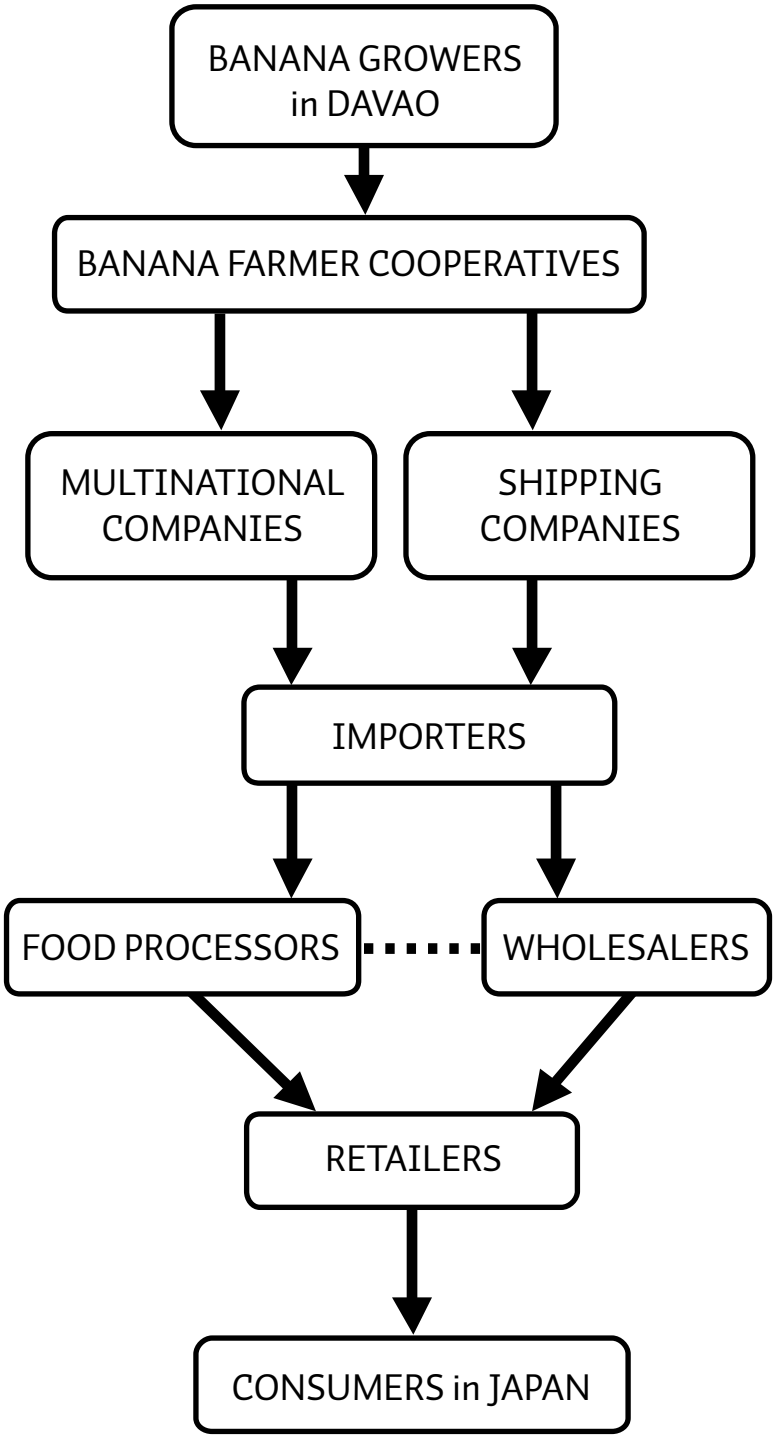
Banana farmers who do business directly with the multinational companies (MNC) are usually those rich families who were able to maintain landownership or to exclude their lands from being redistributed (De Leon and Escobido, 2004). Meanwhile, banana farmers who became beneficiaries had to organize themselves into ARB cooperatives in order to come up with a significant volume for export. Once they are organized into ARB cooperatives, they can either become contract grower for a given MNC or if they assume the risk they may operate independently and trade directly with the importers.

Being a contract grower, the division of work and responsibilities and the prices depend on the type of arrangement stipulated in the contract and as discussed in the previous section III, these could be: ex-farm, ex-patio and ex-wharf. A big Filipino company is paying respectively US$2.45, US$2.65 and US$3.10 per box for each of the mentioned arrangements in Davao, respectively. Apparently, most of the ARB cooperatives seem to operate in an ex-patio arrangement.

Independent cooperatives and organizations have to be responsible in both production and post-production processes. To give an idea of these processes undertaken by an independent banana farmer: once the fruits are harvested, they should be delivered in the packinghouse at least within eight hours. Otherwise, the harvest will dehydrate and may ripe easily. They are transported either by trolley trucks or by cableway to the packinghouse. In the packinghouse, they are washed with cleaning agents and are blown dried before they are placed inside a polyethylene vacuum bag and boxes. Each box for export has a net weight of 13 kilograms and is vacuum packed. From the packinghouse, boxes are stored directly into a refrigerated van, when the producer has one. Otherwise, boxes of bananas will have to be transported

in trucks and transferred to a container yard, where it will be loaded in a container and for this process, additional costs have to be paid. In the case of a MNC, they have their own cold storage facility where it will be kept until the scheduled shipment, which is normally once a week.

Figure 3: Banana Value Chain for the Export Market



With regards to the shipment of Cavendish bananas, the individual exporters have to use the services of trading or shipping companies. For destination ports in East Asian countries like Japan, shipment will take about 11 days but this still depends on the shipping company which can do direct shipment to the port of destination or have it transshipped first to Ma-

nila before shipping it to the importing country. MNCs enjoy the benefit of using their own-chartered refrigerated vessels and regulating the duration of the shipment. Before any shipment can be done, a number of documents should be secured first, such as : phytosanitary permit from the plant quarantine of DA, stuffing permit, authorization to load to shipping vessels, export declaration from the Bureau of Customs (BOC) and port of origin document from the Philippine Chamber of Commerce (PCC). Aside from these required documents, bananas to be exported should meet numerous quality controls and standards listed in the Annex 5.

To continue with the chain, Cavendish bananas from both MNC and independent banana exporters, would be bought by the respective importers in Japan. According to PIC (2008), all imported fresh bananas go either to Japanese local fruit merchants or specialty wholesalers or are sold to Japanese shippers and after this to Japanese food processors. In the case of food processing, the processed bananas would be sold to Japanese wholesalers from the processors and this is depicted in Figure 3 by the dotted line. This dotted line also refers to the opposite possibility of wholesalers selling first to food processors. Imported bananas as well as processed bananas would be sold to primary wholesalers in central wholesale markets and to intermediary wholesalers, then to Japanese retailers and finally, will be bought and consumed by Japanese consumers. Apparently bananas are the "most favorite fruit for Japanese" as it has the largest import volume with one million tons a year (Matrade, 2008).

Moreover, it is important to be well informed of the ever-changing consumer preferences (Pelupessy and Van Kempen, 2005). In the case of bananas, consumers prefer to have their fruits in all seasons fresh and of high quality in terms of taste, appearance or shape. They are also concerned about food safety and environmental friendliness, i.e. how the fruit is grown whether it has been exposed to chemical or organic fertilizers and pesticides. Some may even show interest in the social aspects of banana production i.e. whether or not banana workers receive fair wages or are working in a safe environment . Given these consumer wishes, certain opportunities are made available to banana smallholders. UNCTAD (2003: 27) identified organic bananas, fair-trade and exotic bananas as some of the market niches which small producers may capture. In the case of Japan, prices depend not only on the product quality but also the food grade, which considers the size, gloss, product type and overall quality (PIC, 2008).

4.2.1 Price Distribution of Cavendish bananas

To estimate how much growers, traders, wholesalers and retailers earn in the chain, our study took into account the price increments to the farm gate price of Cavendish bananas in the Philippines until the retail price of the imported Cavendish bananas in Japan is reached. It should be noted that the price distribution in Table 7 is a national average. The study also assumed that the farm gate price of Cavendish bananas is US$0.22 per kilogram, the same as in previous estimations. For the import, wholesale and retail prices of bananas in Japan, the study used the data from FAO (2005). Imported bananas in Japan were priced at US$0.54 per kilogram CIF excluding the cost of cartons. The imported Cavendish bananas were sold in the wholesale and retail markets at US$1.04 and US$2.16 per kilogram, respectively. It could be seen in Table 7 that retailers received the highest price increment or share of the price paid by a Japanese consumer for every kilogram of imported Cavendish banana from the Philippines. However, the price increments of importers, wholesalers and retailers are gross results, because for the estimation of the actual profit received by these actors one should consider taxes, transaction and transport costs and other costs incurred.

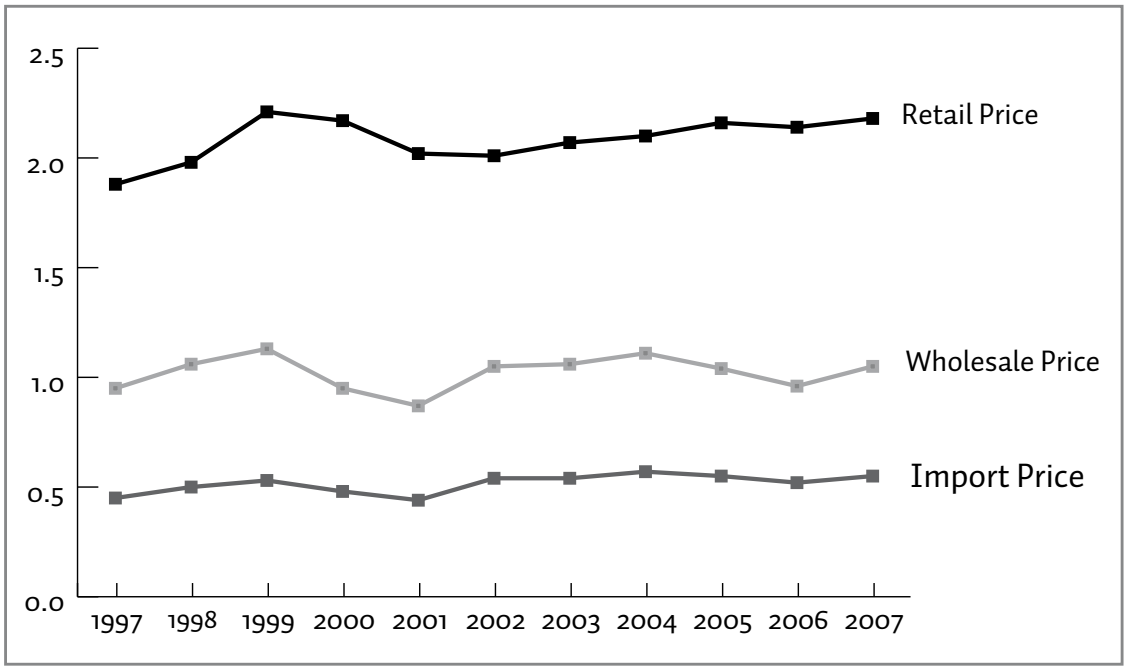
Table 7: Price distribution of exported Cavendish bananas to Japan

	In US$ per kilogram and % Share to Consumer Price
Farm Gate Price (banana farmers)	0.22 (10%)
Import Price of Bananas in Japan (importers)	0.54 (15%)
Wholesale Price (wholesalers)	1.04 (23%)
Retail Price (retailers)	2.16 (52%)
Consumer Price	2.16 (100%)

Source: FAO (2005)

The farm gate price per kilogram of Cavendish bananas at US$0.22 was computed from the price quotation of US$2.90 per box of 13 kilograms. Meanwhile, Figure 4 depicts the price trend of imported bananas sold in Japan from 1997 to 2007. It should be noted that prices for 2006 and 2007 are rough estimates based on the year-to-year growth rates of the recorded prices from FAO. In figure 4 one can observe the huge gap between wholesale and retail prices, as well as between import and retail prices. It can also be seen that consumers' prices have a slight inclination to rise compared to the import and wholesale prices.

Figure 4: Price trends of imported bananas in Japan, 1997 – 2007



Source: FAO (2006)

During the fieldwork, three ARB cooperatives, HEARBCO, DARBCO and AMSKARBEMCO and one non-ARB smallholders' cooperative, CASMIDECO were kind enough to grant an interview. They are CARP beneficiaries since 1997 and became contract growers thereafter, except for CASMIDECO, which started earlier as non-ARB contract grower to the MNC Stanfilco in 1992. In addition, all of the cooperatives interviewed are members of the Federation of Cooperatives in Mindanao (FEDCO).

Table 8: Summary of returns and costs of farm-firm contracts

Cooperative	Company	Price per 13.5 kg. Box (US$)*	Cost per 13.5 kg. Box (US$)	Net Returns per 13.5 kg. Box (US$)
HEARBCO (Hijo Employees Agrarian Reform Beneficiaries Cooperative)	**Lapanday**	2.65	2.10 – 1.90	0.55 – 0.75
DARBCO (DAPCO Agrarian Reform Beneficiaries Cooperative)	**Unifrutti**	3.30	1.90	1.40
AMSKARBEMCO (AMS Kapalong Agrarian Reform Beneficiaries Employees Cooperative)	**Unifrutti**	3.30	1.90	1.40
CASMIDECO (Casig-ang San Miguel Development Cooperative)	**Sumifru**	3.00	1.76	1.24

Source: Field interviews of December 2008
** Box: gross weight 13.5 kg; net 13 kg; ex-patio prices*

It may be observed from Table 8 that the buying price of Cavendish bananas fluctuates depending on the negotiation with the MNC or national counterpart. Lapanday, a Filipino-owned corporation has the lowest price while Unifrutti/ Chiquita, a US MNC offered the highest price among the respondents for this study. In terms of estimated costs, CASMIDECO recorded the lowest costs, though the respondents did not directly mention it. A possible reason why the other three ARB cooperatives have higher estimated costs could be that they have to include the payments for the agrarian reform land, unlike the CASMIDECO cooperative who owns its lands without the intervention of CARP.

4.3 Comparison of the Banana Chains

Table 9 compares the net returns a banana farmer may receive for every kilogram he/she will be able to sell in the market. The farmer serving the domestic market has the net returns ranging from US$0.06-0.12 per kilogram of Lakatan. The comparable net returns of export growers ranges from US$0.04 to 0.11 per kilogram of Cavendish bananas. This means that they sometimes earn less, more or the same as the domestic farmers per kg. of bananas sold.

Table 9: Comparative table of the net returns of banana farmers

USD per Kg.	Lakatan Grower	Cavendish Growers			
		HEARBCO	DARBCO	AMSKAR-BEMCO	CASMIDECO
Selling Price	0.20	0.20	0.25	0.25	0.23
Total Costs	0.14	0.16-0.14	0.14	0.14	0.13
Net Returns	0.06-0.12*	0.04-0.06	0.11	0.11	0.10
Net Returns as % of the Consumer Price	10.5-21.1	1.9-2.8	5.1	5.1	4.6

** See comments Table 6*

Apart from the low selling price a farmer receives from the traders who buy the Lakatan bananas for the domestic market, there are considerable costs for the materials and other productions costs, which include fertilizers, banana planting materials and insecticides. Cavendish banana growers spend a significant amount for chemicals such as: confidor, topsin, diazul, gramoxone among others. However, one advantage of being part of a cooperative is that they can do bulk buying of inputs and receive some discounts in doing so; whereas, Lakatan banana growers individually buy their inputs. It can also be observed from Table 9 that net returns are not the same for all banana cooperatives. On average net returns per Kg. bananas are estimated along a broad range of 20-40% of the gross income and ultimately, it depends on the production volume sold whether they have good earnings, losses or just break-even. The shares of net incomes of the growers in terms of the final consumers' price are significantly higher for the domestic market. Contribution of the contract growers per kilogram of bananas sold vary between 1.9-5.1% of the consumers price in Japan, while that of the Lakatan growers are 10.521.1% of the final banana price in Manila. The total incomes received by the farmers depend on size and yields of the plots. For the CARP export cooperatives the yields were 4200-4500 box/ha. for HEARBCO, 4800 for DARBCO and 3800 AMSKARBEMCO. Using the average sizes in Table 10, we got a variety of average yearly net incomes for these cooperatives of respectively US$1,856.40-2,983,50; US$21,003.84 and US$5,162.30 for each member. As presented in Table 5, the yearly net incomes of individual Lakatan farmers are estimated as US$2,296.80 for one hectare or US$4,593.60 for the domestic cooperatives. We may conclude that generally the total net incomes of domestic market growers are in the same line as the contract export market growers, except one. Increasing areas and yields may make a big difference in total income , as shown by the DARBCO cooperative.

4.4 Employment effects

De Leon and Escobido (2004) were able to gather information from an NSO survey in 1999 on the employment generated by the banana industry, specifically in Region 11. The survey covered 80 banana farms and the majority i.e. 39 farms were situated in Davao del Norte. About 20,000 to 30,000 farm workers were employed in the farms of the region. According to employment size, almost halve (47.5%) of the farms have employed farm workers ranging from 1 to 99; 43.8% had employment size of 100 to 999 workers and 8.7% had 1,000 or more workers. Unfortunately, NSO was not able to do the same survey procedure to come up with the latest

data during the 2002 Census of Agriculture; hence, our study had to make some rough estimation for the employment data.

First it should be noted form Table 10 that there is a big variation of the average farm size of the cooperatives, ranging from 0.9 to 3.1 has., while all together, it averages 1.4 has. To estimate the generated employment of banana farms, the study will use estimations made by FEDCO with the representatives of each cooperative. The estimated number of workers per hectare is 1.5 man-days per hectare, annually with a total of 12 hours worked by one worker. Hence, to estimate the total workers employed by a banana farm, we just multiply the farm size by 1.5 man-days per hectare, after which the product will be divided by 12 hours per worker, as shown in Table 10.

Table 10: Estimated number of workers by interviewed cooperative

Cooperative	Members	Total farm size (in hectares)	Size by member	Estimated no. of workers employed
HEARBCO	326	278	0.85	35
DARBCO	147	450	3.06	56
AMSKARBEMCO	216	206	0.95	26
CASMIDECO	36	56	1.56	7
TOTAL	725	990	1.36	124

Source: Interviews

However, this may be an underestimation, as in the case of CASMIDECO where in their small packinghouse a total of 15 people are employed including those who do the spraying, farm maintenance and harvesting. The main factor determining the number of employed is the technology and farm management methods used by the growers. For instance, in the case of CASMIDECO, which is still a small cooperative it would be too costly to obtain external spray services, so they opt for a farm worker who individually sprays the pesticide on each banana plant. As observed during one of the site visits, some if not most of the workers in the packinghouses and farms are relatives of the ARB contract grower and they also get paid for their work. These family members are not only engaged on their own plots but also in the production of the whole cooperative. In the employment gender equality is observed as workers receive the same wage rate ofUS$5.20 per day. For six days a week and 24 a month, this gives a monthly salary of US$124.80, which is still below the rural poverty and food threshold lines mentioned earlier. Apparently, the division of labor is that men are employed for heavy workloads such as spraying, harvesting and defingering; while women are assigned to washing, classifying and boxing of the bananas.

4.5 Institutional Arrangements

These arrangements were originally introduced by lead firms of the chain. Later on, they were made official by law and regulations of the importing and exporting countries. The general purpose is to give the exports of bananas a boost, enhance quality and protect the safety and health of final consumers in the importing country.

4.5.1 In the importing country

In Japan, imported fresh bananas like those coming from the Philippines are subject to the stipulations of the Plant Protection Law, Food Sanitation Law and JAS Law[1]. The Plant Protection Law has "to inspect the exporting, importing and domestic plants, to control the pests, and to prevent the outbreak and/or spreading thereof, thereby to ensure the stabilization and development of agricultural production" (JETRO, 2008). Under this law, an importer has to submit an "application for inspection of plants and import-prohibited articles" to the plant protection station at the port of entry. In addition, a phytosanitary certificate issued by the authorized government agency of the exporting country has to be attached to the exported good. If the item passed the inspection, a certificate of passage will be issued. Otherwise, decontamination procedures will be applied (PIC website, 2008). The Food Sanitation Law was created "to prevent the occurrence of health hazards arising from human consumption of food so as to contribute to the protection of health of people by conducting regulations and measures deemed necessary, from the view point of public health, for securing food safety" (JETRO, 2008). Lastly, JAS Law requires fresh fruits to be labeled with the name and country of origin, either on its containers, packaging material or when displayed in the market. This requirement is also known as Fresh Food Quality Labeling Standard (Matrade, 2008).

In addition, documents such as notification form for importation of foods, plant quarantine inspection and phytosanitary certificates should be secured by the importer. Once the imported fresh fruits arrived at the port of entry, a Japanese government official from the Food Sanitation Inspection Division of the Ministry of Health and Welfare or a food sanitation inspector from a laboratory assigned by this Ministry will inspect the fruit for compliance in 20 test categories (PIC website, 2008).

4.5.2 Banana Exports – Philippine and Japanese Government

On the 9th of September 2006, the Philippine and Japanese Governments signed a bilateral free trade agreement, more commonly known as the Japan-Philippine Economic Partnership Agreement (JPEPA). JPEPA is a controversial trade agreement , which has been receiving criticisms because of the basic reason that it favors the Japanese more than the Filipinos. For instance, Philippines will immediately eliminate the tariffs for key Japanese products such as automobile and automotive parts, electrical, mechanical and household appliances, while Japan declined to do the same. JPEPA critics and environmentalists claim that the Philippines will be dumped with toxic wastes under JPEPA. In the case of Cavendish bananas, which are the top export product of the country to Japan, it is currently subject to 10%-20% tariff, depending on the classification of JPEPA. Japan only agreed to lower the tariff gradually every year after the agreement was signed until its removal in the eleventh year. Furthermore, with the tariff reduction, exporting companies like Sumitomo, a Japanese firm in Davao that exports Cavendish bananas to Japan, will mainly benefit and not the banana farmers and plantation workers (Conde, 2006).

[1] JAS Law is the law concerning standardization and proper labeling of agriculture and forestry products. http://www.jetro.go.jp/en/market/regulations/pdf/agri2008-e.pdf

4.5.3 Banana farmers – Philippine Government [1]

Aside from the Banana Strategic Plan of DA, banana farmers can also get credit assistance through DA-Quedancor, Development Bank of the Philippines (DBP) and Landbank of the Philippines (LBP). DA-Quedancor offers credit to producers of Latundan, Señorita, Lakatan and Cavendish with amounts of PhP130,000 (US$2,954.55), PhP210,000 (US$4,772.73), PhP230,000 (US$5,227.27) and PhP520,000 (US$11,818.18) per hectare, respectively. The export market farmers could receive a considerable higher credit, while their direct costs are only slightly superior than that of the domestic market growers. This is another export stimulating measure. Likewise, LBP provides cooperatives with a maximum loanable amount of 80% of the project cost and specifically, farmers producing Cardaba with PhP37,000 (US$840.91) per hectare and Lakatan producers with PhP122,000 (US$2,772.72) per hectare.

Furthermore, to address the problem of postharvest losses, some technologies are adopted to reduce these, which usually occur when the agricultural produce like bananas are transported in a non-refrigerated container from Mindanao to Manila. To cite an example, modified atmosphere packaging is used to reduce oxygen so as to delay ripening. Also firms put absorbent to lessen the ethylene discharge of fruits produce (Castro, 2008).

4.6 The power of big companies in the chain

4.6.1 Domestic Banana Chain

Being characterized by a decentralized market, the domestic chain is governed by the actor who is well informed of basic market indicators as prices, the latest technology that will help in augmenting the production and keep the bananas away from diseases and pests or gives the best conservation. The domestic wholesalers seem to receive the biggest share of the consumer price (Table 5). The farmers are just price takers with the guiding principle to sell their bananas to the highest bidder. Farmers may obtain a corresponding surplus but this is not always equivalent to a profitable situation. At a worse case scenario, some farmers have no choice but to sell their bananas even at a low buying price set by the trader. Furthermore, traders also have introduced some unwritten rules and growers must give in to these demands. As identified earlier in this chapter, traders receive discounts and bananas for free. On the other hand, information on the latest technique to eradicate pests and diseases can also give an actor in the chain or even those outside, the opportunity to require the farmers to use their products or services. Obviously, if the technology is proven effective and no other alternatives are available, then sellers can command a higher price. Therefore, for the domestic buyer-driven banana chain, it is the wholesalers who dominate the governance force mainly because they can easily dictate the price and are able to persuade the cultivators to follow their written and unwritten trading practices. Data from a PCARRD study of the nine major supermarkets in Metro Manila, indicate that among these wholesalers are big banana companies like the MNC Dole Philippines and the Filipino Dizon Group.

[1] All Philippine Peso values are converted to US Dollar using the 2008 exchange rate US$1=PhP44.

4.6.2 Export Banana Chain

In terms of price distribution, it can be observed that retailers in the importing country Japan receive the biggest share from the consumer price, as shown in Table 7. This can be attributed to the fact that retailers directly deal with final consumers which means that they would know how to select and package the bananas and prices to be charged according to consumers' preferences. When we look at the type of governance of the export banana chain , it will fall under the category of buyer-driven. The influence of buyers does not only relate to price distribution but more importantly on how they are able to pass on their demands and wishes to other chain actors until it reaches the way back to the banana farmers.

Going back to the farm, it is noticeable how farmers invest in machineries and farm techniques to ensure not only the production volume but also the quality and food safety of export bananas. In a cost breakdown for Cavendish production, at least 50% of the total cost come from the material cost, which is composed of the tools, fertilizers and chemicals that have to be sprayed to the fruits against infection of pests and diseases (see Table 11). This gives the providers of inputs some power within the chain and often they are also related to big MNC exporters with farmer contracts.

Table 11: Cavendish banana production costs (%)

Item	% Total
Labor	36.9
Fertilizers	8.0
Pests and disease control materials	27.9
Propping materials	4.9
Bagging materials	6.1
Fuels, oils, lubricants	4.7
Depreciation	8.4
Overhead	3.1
TOTAL	100

Source: Digal, L. (2005)

An example of this power relationship would be the materials used for aerial spraying, which is a required activity in any export banana farm. Once harvested, intermediary actors should be able to maintain the freshness and physical attributes of the bananas until they reach the country of destination. Failure to do so would simply mean loss of income. That is why contracts are present in every business transaction from the banana farms to the intermediary channels and from these, e.g. exporters, to those in the country destination, e.g. importers. Final consumers here are more demanding and have more purchasing power than those in domestic markets. Therefore there are strict regulations and standards in the export banana value chain (Annex 5).

Digal (2007) identified the five major banana exporters in the Philippines: Del Monte Fresh Produce, Stanfilco (a division of Dole Philippines), Sumitomo, Fresh Asia Produce Co. International (FAPCI) and Chiquita/Unifrutti, which together controlled 88% of the exports to Japan in 2007 (Table 12). Eight smaller exporters controlled the remaining 12%.

There are13 supplying companies to the exporters which are owned and managed by four Filipino families: Floirendo with Tagum Agricultural Development Co. Inc.; Dizon with F.S. Dizon & Sons, Inc and COMVAL Tropical Fruit Inc.; Soriano with AMS Farming Corp., AMS Upland Ventures Corp., Cabadbaran Fruits Corp., Soriano Fruits Corp. and Davao Fruits Corp.; and Lorenzo with Lapanday Agricultural & Development Corp., Lead Export & Agro-Development Corp., Malalag Ventures Plantation, Inc., Global Fruits Corp. and Tortuga Valley Plantation, Inc. The remaining 15 suppliers are both Filipino and foreign-owned companies (Table 12). Of these only seven are independent exporters with a total share of 10%. The list may still have missing MNC counterparts but it is safe to say that most if not all listed PBGEA members are contract growers to one of the five major banana exporters. During 2007, Stanfilco/Dole had contributed at least 32% of the total bananas shipped to Japan based on PBGEA data and the Japanese Sumitomo was a good second with 22%. Japan still remained the major destination of bananas exported by the Philippines and received about 39% of total banana exports in 2007.

The more established MNCs have also easier access to the wholesale and retail markets, because usually they have strategically put up local offices in the importing countries to support distribution and marketing. Some companies start competing by having different brands to indicate a kind of classification on the products that they offer and eventually capture their own market segment. Branding is one of the essential aspects of marketing. For instance, Dole, Del Monte and Chiquita/Unifrutti carry their company names as their brand simply because the companies are already established and well known in the international arena. Sumitomo Fruits have Gracio and Natural Kingdom brands for their highland bananas.

Table 12: Exporters of Cavendish bananas to Japan by PBGEA member, 2007

Supplier	Ownership	MNC Exporter	Share %	In 13kg. Box
1. Stanfilco – Davao	Dole	Dole	24.01	14,235,676
2. Diamond Farms, Inc.		Dole	7.03	4,165,564
3. Stanfilco - Gen. Santos	Dole	Dole	1.54	913,102
		Total Dole	**32.58**	
4. Davao Fruits Corp.	Soriano Family	Sumitomo	16.74	9,923,355
5. Fresh Banana Agricultural Corp.		Sumitomo	2.55	1,513,068
6. AMS Farming Corp.	Soriano Family	Sumitomo	1.29	764,067
7. Cabadbaran Fruits Corp.	Soriano Family	Sumitomo	1.27	755,668
8. Soriano Fruits Corp.	Soriano Family	Sumitomo	0.54	322,683
9. AMS Upland Ventures Corp.	Soriano Family	Sumitomo	0.10	56,904
		Total Sumitomo	**22.49**	
10. Tagum Agri. Dev. Co. Inc.	Floirendo family	Del Monte	12.50	7,410,594
11. Lapanday Agri. & Dev. Corp.	Lorenzo family	Del Monte	1.89	1,121,036
12. Comval Tropical Fruit, Inc.	Dizon family	Del Monte	1.77	1,051,725
13. F. S. Dizon & Sons, Inc.	Dizon family	Del Monte	0.35	209,459
		Total Del Monte	**16.51**	
14. Global Fruits Corp.	Lorenzo family	FAPCI	7.80	4,622,917
15. Hijo Resources Corp.	Hijo Group	FAPCI	0.78	463,262
		Total FAPCI	**8.58**	
16. Marsman Estate Plantation Inc.	Marsman-Drys-dale Group	Chiquita/Unifrutti	3.79	2,248,219
17. La Frutera, Inc.		Chiquita/Unifrutti	1.74	1,032,253
18. Tortuga Valley Plantation, Inc.	Lorenzo family	Chiquita/Unifrutti	1.06	631,266
19. Alta Vista Agri-Ventures Corp.	Marsman-Drys-dale Group	Chiquita/Unifrutti	0.81	478,158
20. Malalag Ventures Plantation, Inc.	Lorenzo family	Chiquita/Unifrutti	0.09	52,539
		Total Chiquita/Unifrutti	**7.49**	
21. Viscaya Plantation, Inc.	Tristar Group	Exporter	4.15	2,461,029
22. Lead Export & Agro-Dev. Corp.	Lorenzo family	Exporter	2.07	1,230,142
23. Greendale Agricultural Dev. Inc.(Nova)		Exporter	1.90	1,126,233
24. Nader & Ebrahim S/O Hassan Phils., Inc.		Exporter	1.83	1,083,910
25. Sarangani Agricultural Co. Inc.		Exporter	1.06	626,762
26. Pristine Meadows Agri-Dev. Inc.		Exporter	0.78	462,913
27. Highland Agri-Ventures, Inc.		Exporter	0.28	167,659
28. Alip River Dev. & Export Corp.		Exporter	0.27	160,330
		Total rest	**12.34**	
TOTAL			**100%**	**59,290,493**

Source: PBGEA

Two Filipino companies Lapanday and Marsman are starting to compete with the other big companies. Lapanday already have its own packaging houses, cold storage facilities and port. Also, it sells under the brand names of: Estrella, Aloha and Mabuhay in China, Hong

Kong and Singapore. Marsman have their bananas under Oro Fresh brand, which is sold in the Middle East and South Korea (Puyod 2007).

Therefore, banana exports from the Philippines to Japan and the domestic wholesale trade are still very much dominated by MNCs, some of which are vertically integrated as supplier to exporters, exporters and wholesale distributors to Japanese retailers. Five companies concentrate 88% of the exports, while the supply of bananas to this market is for 90% controlled by the same MNCs and four powerful Filipino families. Entry barriers to these markets are considerable because of the high concentration ratios and capital intensities. There seems to be very little scope for cooperatives of small growers to access these very profitable stages of the banana chain. The MNCs may be considered lead actors in control of the chain and they out-compete the big Japanese retailers, despite the high value shares of the latter.

4.7 Upgrading Opportunities

By organizing themselves in cooperatives, small farmers of both the domestic and export markets can increase their bargaining potential against powerful buyers. This may increase their efficiency and income considerably (see 4.1), but they may also buy the needed inputs in bulk or from wholesalers and get some discounts, all of which may lead to process upgrading. More importantly, when farmers organizations will be present in the domestic banana chain, it would be easier for the government, NGOs and others to conduct trainings and to strengthen the mutual trust to control the quality of production and trade regularly. These are examples of possible process and product upgradings by the creation of cooperatives. Similar to the exported produce, it will ideally result to better quality bananas for the domestic consumers, who may be willing to pay higher prices. The creation of cooperatives and additional government regulations may reduce domestic market transaction costs by better price information, differentiated pricing, changing traders' discounts rules and improved credit provision. Lakatan farmers should get the same credit facilities as the export growers.

The exploration of niche markets for health, tourists, fair trade and organic bananas may lead to domestic product upgrading. Functional upgrading in the local markets may also be possible by reservation of wholesale trade in the big cities for small growers' cooperatives. For export contract growers the opportunities for upgrading are rather limited because of the powerful chain control by the MNCs and other barriers. Theoretically there is almost no possibility for functional upgrading. Nevertheless there is the competitive branding experience of Lapanday and Marsman which may be copied by cooperatives with a kind of certificate of origin with a price premium.

Since the buying price of the bananas are rising as banana farmers increase their risk and responsibility, it is quite rational that eventually growers or cooperatives may consider a shift from ex-patio to ex-wharf arrangements. This change will take time and require costly and risky additional facilities like cold storage, trucking service and ownership or rental of a port. But if each facility will be gradually acquired, put up and used efficiently, then it can be considered as an asset or investment. A careful cost and benefit analysis could be a first guide. Hence, this is a fecund way of introducing a functional upgrade with an ultimate goal of increasing net returns but more importantly, encouraging banana growers the possibility of vertical integration in the

future. The other types of process and product upgrading will need the cooperation of the powerful key-actors in the banana export chain.

Small farmers' position in this chain can still be improved through some product upgrading when an issue like pole-vaulting is resolved with additional regulation for banana exporters by the government. Pole-vaulting is a practice wherein a banana contract grower sells his bananas to another firm which is not the company with whom he has a contract, usually because of a higher buying price. This would result to non-delivery of the required volume for the partner company, and may affect the business relationship. A short run benefit for the grower may harm long term interests of the chain. To resolve this problem, a group of Filipino exporters are currently lobbying for the government to recognize the Philippine Banana Growers and Exporters Association (PBGEA) and the Mindanao Banana Farmers and Exporters Association (MBFEA) as the only accredited banana grower and exporter associations in the country. They could also prevent opportunistic changes of quality rules of the game by companies, as mentioned earlier in this paper. With this coordination structure, small banana farmers and their organizations are encouraged to become part of one of these associations. It would make the monitoring of players in the chain easier for the government and for the actors to become proactive on the issues surrounding the banana industry.

Meanwhile, a draft proposal from the government that will require exporters to submit their bananas to be scanned and inspected for metal elements received a mixed reaction from the exporters. Some exporters find this process as an additional expense and time-consuming, which means it can affect the delivery time and quality of the bananas. While some other exporters are optimistic that this proposed regulation would be beneficial in the long run as this would increase the demand in banana-importing countries to buy from the Philippines. All these chain coordination efforts may lead to reduced transactions costs and some process upgrading for contract growers. An accelerated elimination of tariff and eventual non-tariff barriers in Japan could be negotiated by the Filipino government and may lead to decreasing transaction costs and some process upgrading. At least a part of the savings from the disappearance of the barriers should be transferred to the small farmers. New technologies and better inputs may improve farm efficiency and reduce post-harvest losses leading to process upgrading of small growers.

Another possibility would be to sell the fresh bananas as an input to food processors in those far-off countries. Together with socially and environmentally friendly niche markets, this may increase the demand for upgraded quality produce. To ensure that they will continue to patronize Philippine bananas, quality, quantity and safety standards should always be observed.

Finally, with regards to CARP, there are still a number of farmers asking for extension of the reform and hoping that with this they will be able to receive their own parcel of land. When the government will extend the implementation of the reform, they should improve the rules and regulations to reach a fair redistribution of banana plantations.

5. Conclusion and Recommendations

The implementation of agrarian reform gave banana smallholders access to the export market, because of the orientation of the redistribution of agricultural lands. These were particularly plantations operating on a large scale with a labor force that was eligible to become owner of the land, which they have been tilling for years. In the banana industry, this has increased the export-producing segment of the Cavendish cultivar considerably. However after more than 20 years implementation of the reform, there are still 30% of the potential beneficiaries excluded from ownership of the land. Among those who had received a plot, many accepted the agribusiness venture and leasehold agreements that tied them unfavorably to the former landlords of the banana plantations. Apparently those new landowners that established cooperatives were in a better position to earn higher incomes and obtain better conditions as contract growers. The creation of cooperatives could increase the scale of the supplied bananas and strengthen the bargaining power vis-à-vis powerful buyers, which are the main exporters. The expanding foreign consumers' markets with very profitable prices looked as a golden future for smallholders participating in global banana chains. Both production and transaction costs should be reduced and efficiency enhanced by the organization of the agrarian reform beneficiaries. Most of the small banana growers considered the transformation from farm worker to farm owner as beneficial in terms of income, living conditions and self-esteem. To check this we have compared their present position with that of small banana growers producing for open domestic markets.

Most of the the latter are individual farmers that do not face the complexity of agrarian reform and therefore their experience can be a dynamic benchmark to that of the contract growers of the export market. Given the extension of the plot, yield and the fact that farmers' prices were not very different, we found that the net impact of the institutional change by agrarian reform has been limited. For comparable farms the net income was similar for both reformed and unreformed small banana growers. Obviously the agrarian reform may have provided more land to beneficiaries and raised the efficiencies, although the average extension does not indicate this. More field research is needed to confirm or reject this assertion.

But more alarming are the differences in upgrading opportunities for the two categories of banana smallholders. Those operating for the domestic market have much more possibilities, starting with a better organization or cooperation, which may double their net income. For the export contract growers, this institutional change had already taken place. All other improvements for smallholders in the export chain will need the consent of powerful downstream chain actors. The presence of power asymmetries in the chain is one of the main causes for this disadvantage and makes the value share of the consumers' price for contract growers much smaller than that of smallholders operating in domestic markets. This happens despite the superior collective bargaining power of the first category of growers. The concentration ratio of 0.88 of the big five in the export market, the domination of these and four influential Filipino families in the wholesale supply and their participation in the distribution channels of the importing country make functional upgrading practically impossible for small farmers and their associations. Although MNCs like Del Monte play also an important role in domestic distribution of bananas in the Philippines, there are still ample opportunities for process, product and functional upgrading in the domestic chain. In this case, actions and the issuing of rules by ac-

tors from outside the chain (government, NGOs) could reduce both direct production, trade and transaction costs. The reservation of certain stages of the domestic chain, such as the provision to supermarkets, may offer a good opportunity for functional upgrading by organizations of small growers.

By recognizing MBFEA and PBGEA as the sole accredited banana export organizations by the government a durable improvement in the mutual farms-firms relationship could be obtained, which may eliminate pole-vaulting and opportunistic behavior of big buyers. It is this type of win-win situations which should be most looked after by the export contract cooperatives to improve their position. We could also mention the shift from ex-patio to ex-wharf contracts, not only to receive a better selling price for their bananas, but to gradually be able to streamline the supply to the MNCs. While exploring markets in other countries and for food processing industries is still a work in progress, maintaining good business relations with current importing countries like Japan should be a priority. Fresh bananas sold to these countries should always bear the demanded quality, quantity and safety requirements. It will also be good marketing strategy to provide product variety by promoting highland and organic bananas for exports, since especially these two products have received a good feedback.

A few Filipino companies have started to penetrate the international market without the necessary intervention from MNCs and with their own brands. This could become a role model for the banana cooperatives in a distant future.

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Annex I: Top Agricultural Exports: Volume and Value, Philippines 2005-2007

ITEM	2005	2006	2007P
VOLUME OF TOP EXPORTS ('000 MT)			
Coconut Oil	1,152.32	1,069.48	888.85
Banana, Fresh	2,024.32	2,303.93	2,199.32
Pineapple & Products	536.72	683.65	587.82
Tuna	45.05	59.79	73.93
Desiccated Coconut	125.54	136.20	130.72
Milk and Cream & Products	37.55	33.86	35.94
Tobacco Manufactured	21.06	19.17	17.68
Seaweeds & Carageenan	30.81	29.74	26.18
Shrimps & Prawns	12.67	13.17	10.12
Centrifugal Sugar	219.34	214.64	234.58
Mango, Fresh	31.27	26.12	26.34
VALUE OF TOTAL AGRICULTURAL EXPORTS			
(FOB in million US$)	2,691.19	2,780.69	3,534.98
VALUE OF TOP EXPORTS (FOB in million US$)			
Coconut Oil	657.22	578.72	733.81
Banana, Fresh	362.58	404.16	396.28
Pineapple & Products	204.28	221.52	247.42
Tuna	102.01	143.33	210.87
Desiccated Coconut	127.14	138.82	157.43
Milk and Cream & Products	79.94	93.12	138.76
Tobacco Manufactured	112.81	103.41	97.89
Seaweeds & Carageenan	71.90	71.59	91.64
Shrimps & Prawns	93.51	98.54	84.85
Centrifugal Sugar	64.84	82.33	77.49
Mango, Fresh	26.63	23.96	23.28

Source: BAS Selected Statistics in Agriculture (2008)

Annex II: Distribution of Banana Production by Region 2007

REGION	Banana Production (In %)	Banana Production (In MT)	Area Harvested/ Planted (In Ha)
PHILIPPINES ('000 MT)	100	7,484,073.1	436,761.85
LUZON	11.46	857,470.4	116,680.10
CAR	0.36	26,785.9	5,056.00
Ilocos	0.62	46,393.1	7,888.84
Cagayan Valley	5.17	386,928.2	23,736.00
Central Luzon	0.69	51,633.8	6,290.00
CALABARZON	1.36	101,681.9	28,577.00
MIMAROPA	2.52	188,588.0	26,561.86
Bicol	0.74	55,459.3	18,751.00
VISAYAS	9.82	734,943.3	86,263.00
Western Visayas	4.43	331,646.5	34,759.00
Central Visayas	2.10	157,153.2	21,086.00
Eastern Visayas	3.29	246,144.2	30,424.00
MINDANAO	78.72	5,891,658.3	233,632.15
Zamboanga Peninsula	3.30	247,270.5	19,568.00
Northern Mindanao	12.47	933,113.6	49,749.50
Davao Region	42.49	3,180,331.2	78,647.00
SOCCSKSARGEN	12.50	935,564.6	28,794.00
Caraga	2.98	222,703.1	25,961.00
ARMM	4.98	372,675.9	30,912.65

Source: BAS Selected Statistics in Agriculture (2008)

Annex III: Agribusiness Venture Agreements (AVA) under AO 9 of 1998

Joint venture agreement – a company is organized and co-owned by an investor and the agrarian reform beneficiaries through their cooperatives or associations. The investor may provide the management and marketing skills, technology, infrastructure, and capital while the ARBs' contribution/participation in the joint venture includes, labor, the usufructuary right to the land, and capital infusion, if available.

Amplified by AO 2: The beneficiaries contribute the use of land held individually or in common and the facilities and improvement, if any. On the other hand, the investor furnishes capital and technology for production, processing and marketing of agricultural goods, or construction, rehabilitation, upgrading and operation of agricultural capital assets, infrastructure and facilities. It has a personality separate and distinct from its components.

Lease arrangement – ARBs through their cooperative or farmworkers' association, enter into a contract of lease with the landowner/investor. The lessee shall have farm control and operations within an agreed period of time but not to exceed ten (10) years subject to extension upon mutual agreement of both parties.

Contract growing or growership arrangement – ARBs commit, either collectively through their cooperative or individually, to produce certain crops for an investor or agribusiness firm that contracts to buy the produce at pre-arranged terms.

Management contract – ARBs or their cooperative/association, hire the services of the landowner or an investor to manage and operate the farm in exchange for fixed wages or commission.

Build-operate-transfer (BOT) scheme – contractual arrangement entered into pursuant to RA 6657, as amended, whereby the project proponent undertakes the construction, including financing, of a given infrastructure facility and the operation and maintenance thereof for an agreed period of time, but not to exceed 25 years, subject to extension.

Amplified by AO 2: The investor introduces, rehabilitates or upgrades, at his own cost, capital assets, infrastructure, services and facilities applied to the production, processing, and marketing of agricultural products at his own cost, and operates the same for an agreed period, upon expiration of which, collective ownership thereof is consolidated with the beneficiaries who own the land where the improvements and facilities are located.

Additional AVAs under AO 2 of 1999

Production, Processing and Marketing Agreement – beneficiaries engage in the production and processing of agricultural products and directly sell the same to the investor who provides loan and technology.

Service Contract – beneficiaries engage for a fee the services of a contractor for mechanized land preparation, cultivation, harvesting, processing, post harvest operations, and other farm activities.

Combination of the schemes under AO9, 1998 and AO2, 1999.

Annex IV: Redistribution of banana plantations in Region 11 before and after 1998

Distributed banana plantations Before June 1998[1]			
Owner	**Area (Hectares)**	**Number of Farmer-Beneficiaries**	**Mode of Acquisition**
DAPCO	1,001.51	964	CA
Sagana Plantation	541.27	323	VOS
Diamond Farms	689.89	608	CA/VOS
Balmar Farms	44.92	33	CA
Hijo Plantations & Apo Fruits	1,439.25	1,294	VOS
Davao Fruits-Calinan	59.90	n.a.	DLT
F.S. Dizon Farms	355.59	n.a.	VOS
Total	4,132.34	3,222	

Source: De Leon and Escobido (2004)

[1] CA – Compulsory Acquisition; DLT – Direct Land Transfer; VOS – Voluntary Offer to Sell;
n.a. not applicable

Distributed banana plantations After June 1998[2]			
Owner	**Area (Hectares)**	**Number of Farmer-Beneficiaries**	**Mode of Acquisition**
Marsman Estate	784.67	756	Deed of Donation/ Land Use Contract
WADECOR	414.76	395	DPS/Leaseback
Checkered Farms	280.38	124	VOS/Growership
AMS Farming	390.77	524	VOS/Growership
Soriano Fruits	80.72	64	VOS/Growership
Cyndee Farms	31.30	56	VOS/Growership
Total	1,982.61	1,919	

Source: De Leon and Escobido (2004)

[2] DPS – Direct Payment Scheme

Annex V: Generalized Quality Standards for Banana Exports and Quality Control for Bananas

Quality Standards				Quality Control	
Qualities of a Good Hand		Qualities of a Good Cluster			
Ideal Hand	**Acceptable Hand**	**Ideal Cluster**	**Acceptable Cluster**	**Strict Supervision**	**Statistical Chart**
No blemishes, spots or bruises No malformed fingers No underdeveloped fingers The diameter and length of fingers are of even sizes. No finger is cut off from the cushion. The cushion is cleanly cut of sharp corners and the arc of the crown is very visible.	Fingers have slight blemishes because of natural causes. A whole hand has only one major bruise. Any single finger has no more than one spot with a diameter of 3''/32''. No more than two visible spots on any single finger. No more than four fingers affected by visible spots. No more than a single cut finger in the hand.	No blemishes or spots and bruises. No deformed or underdeveloped fingers All fingers have uniform diameters and lengths. Each cluster must have no less than six fingers or more than 11 fingers. Clusters should come from big hands weighing at least 4 kg. No fingers should be cut off between existing fingers in the cluster. The cushions should be clean and should have no sharp corners, with the outside portion rounded off.	One or two fingers in the cluster have slight blemishes caused by the reaction of chemicals and mechanical damage in the field. Any single finger has no more than two visible spots. Slightly visible spots must not be visible in more than three fingers in the cluster. The cushions are cleanly cut of sharp corners, with rounded outside portion. Total fingers must be no less than five but not more than 12.	Proper fruit calibration for bunches delivered into the packinghouse. Proper way of dehanding (rate must be proportional to the rate of selection) Selection as fruit recovery depends on: fruits must be well-selected as the quality of the fruit can hardly be improved when it reaches the flotation tank. Accurate weighing and combination of uniform hands Correct packaging Loading of finished products – random inspection of finished product needs to be done to confirm whether or not control measures in the process of packing are being strictly adhered to.	Production per hour and proportion of cluster packs to hand packs. Box/stem ratio to determine recovery per bunch. Information regarding bunches damaged by handling, insects, fruit spots, sunburn and chemical spots. Percent shrinkage (as fruit and as stalk).

Source: PCARRD Banana Production Manual (2005): 98-99

(Footnotes)
1 Computed by multiplying 1,800 trees with 22 kilograms at US$0.20.
2 30% postharvest loss was considered since it is the minimum loss according to the cooperatives from Table 6.

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