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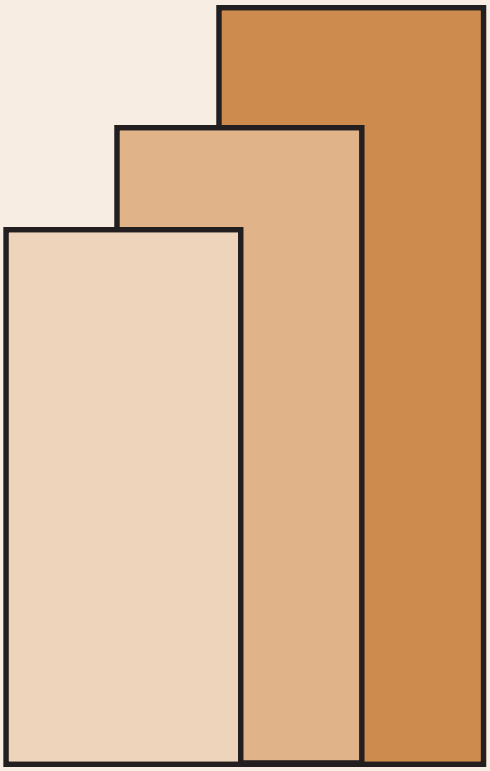
Agricultural Contracts in Mindanao: the Case of Banana and Pineapple

Larry N. Digal

DISCUSSION PAPER SERIES NO. 2007-24



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CONTRACTUAL ARRANGEMENTS IN AGRICULTURE (MINDANAO)

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Abstract

Contract growing has been defined as an agreement between farmers and processing and/or marketing firms under forward agreements, usually at predetermined prices for the production and supply of agricultural products (Eaton and Shepherd 2001). As such, it offers a solution to a number of production and marketing problems that lead to low farm productivity and profitability. These problems plague the agricultural sector and contribute to the high poverty incidence in the rural sector particularly in many areas in Mindanao. On the other hand, Mindanao, being groomed as the country's food basket, shows an example on how contract growing can address various marketing and production problems in the farm sector. This is demonstrated in industries that serve as the lifeblood of Mindanao's economy for many years such as banana and pineapple. Production of these commodities including asparagus, corn, and poultry was pioneered mainly by multinationals and large agribusiness firms in the island-region.

While the market and technological factors largely affect the viability of the contract growing scheme of a particular commodity, there are other factors that are equally important in determining its performance. These include the infrastructure conditions, peace and order, credit accessibility, and government policies that affect the industry as a whole such as the implementation of the Comprehensive Agrarian Reform Program (CARP) and trade liberalization policies. Thus, aside from the economic and technological conditions, the policy environment affecting both demand supply conditions plays an important role in examining the impact of contract growing scheme in Mindanao's agricultural development.

While contract growing scheme offers a way to enhance competitiveness of Mindanao's agricultural sector by increasing production efficiency, accelerating technology transfer, improving quality, and linking small farms to large markets, there are a number of fundamental issues that arise from this scheme. These are the issues of equity and sustainability.

This study aims to understand the nature of contract farming in Mindanao, identify problem areas and opportunities and analyze its implications to Mindanao's agricultural sector particularly in terms of efficiency, equity and sustainability. Agricultural contracts in banana and pineapple were analyzed using the principal-agent framework. The structure conduct performance (SCP) model was used to incorporate the analysis of external factors affecting the contract or the project such as demand and supply conditions as well as government policies. Primary data were gathered through structured interviews with key informants such as farmers or growers, contractors and relevant government agencies, and nongovernment organizations. These primary data focused mainly on the contracts of bananas and pineapple. Secondary data were also generated primarily through literature reviews. In addition, information on external conditions affecting the performance of agricultural contracts such as government policies and socio-economic factors were gathered.

Keywords:

Agricultural contracts (banana and pineapple), production, contract growing, marketing, contractual arrangements

AGRICULTURAL CONTRACTS IN MINDANAO: THE CASE OF BANANA AND PINEAPPLE

1.0 INTRODUCTION

Contract growing has been defined as an agreement between farmers and processing and/or marketing firms under forward agreements, usually at predetermined prices for the production and supply of agricultural products (Eaton and Shepherd 2001). As such, it offers a solution to a number of production and marketing problems that lead to low farm productivity and profitability. These problems plague the agricultural sector in the country today and contribute to the high poverty incidence in the rural sector particularly in many areas in Mindanao. Eighteen of the twenty-five most deprived provinces in the country are in Mindanao and mostly in conflict and Muslim dominated areas.

On the other hand, Mindanao, being groomed as the country's food basket, shows an example on how contract growing can address various marketing and production problems in the farm sector. This is demonstrated in industries that serve as the lifeblood of Mindanao's economy for many years: banana and pineapple. Production of these commodities including asparagus, corn and poultry was pioneered mainly by multinationals and large agribusiness firms in the island-region.

While the market and technological factors largely affect the viability of the contract growing scheme of a particular commodity, there are other factors that are equally important in determining its performance. These include the infrastructure conditions, peace and order, credit accessibility and government policies that affect the industry as a whole such as the implementation of the Comprehensive Agrarian Reform Program (CARP) and trade liberalization policies. Thus, aside from the economic and technological conditions, the policy environment affecting both demand supply conditions plays an important role in examining the impact of contract growing scheme in Mindanao's agricultural development.

For example, banana and orchard farms in Mindanao were affected by the implementation of CARP policy on commercial farms (DAR AO No. 9). The uncertainty brought about by land reform constrained expansion programs of commercial farms. It also aggravated the problem of credit accessibility since agricultural land under CARP is not accepted by banks as collateral (Adriano, 2000). On the other hand, trade liberalization policies exert pressure on the farm sector to modernize in order to compete in the world market.

These policies reinforce the importance of promoting contract growing schemes which may help achieve competitiveness either through lower cost or higher quality or both. Through contract growing scheme, the contractor is not only able to control quality but also minimize risk and hence, increase contractor's capability to expand and increase volume in order to attain economies of scale. These are certainly demonstrated in export-oriented industries in Mindanao such as banana, pineapple and asparagus produced by large multi-national companies such as

Dole Philippines and Del Monte, Inc. With their link to the export market, these companies are largely driven by the suitability of production conditions in Mindanao such as the availability of rich soil, even rainfall throughout the year, typhoon free and good weather conditions to maintain quality and volume. For these large companies, infrastructure facilities and shipping constraints are not as important relative to the small farmers. In shipping for example, these large multi-national companies have their own chartered vessels and do not run into transshipment/cabotage problems which increase the cost of shipping. Thus, while there are common policy issues affecting large and small farms, a significant difference exists on the nature of the issues affecting both.

Moreover, the issues affecting contract growing may vary across products as demand and supply conditions differ in respective industries. The type of market outlet whether domestic or foreign, affects the nature of contract growing. Strong demand for quality products or stiff competition in the export market affects the nature of production arrangements. These are clearly demonstrated in the case of banana and pineapple as opposed to commodities such as vegetables produced for local consumption. In Mindanao, bangus or milkfish producers who currently cater to the local market, are now beginning to develop contract growing schemes to control quality and achieve volume required by the export market.

While contract growing scheme offers a way to enhance competitiveness of Mindanao's agricultural sector by increasing production efficiency, accelerating technology transfer, improving quality and linking small farms to large markets, there are a number of fundamental issues that arise from this scheme such as equity and sustainability. Hence, there is a need to evaluate various contract growing schemes that are currently applied in Mindanao in order to glean insights into how these impact the agribusiness sector. By gaining insights into the elements or factors that explain the success or failure of contract growing, appropriate programs can be designed to maximize its potential in enhancing production efficiency and profitability particularly in linking small farms to contractors, processors and exporters. By understanding the current developments in this area, appropriate measures can also be implemented to promote equity and sustainability in the agricultural sector of Mindanao.

This paper seeks to examine the nature of contract farming in the island region, identify problem areas and opportunities and analyze its implications to Mindanao's agricultural sector particularly in terms of efficiency, and equity. It is structured as follows. The framework used to analyze agricultural contracts in terms of efficiency and equity particularly in the case of banana, and pineapple is discussed in section 2.0. The empirical framework is covered in section 3.0. Analysis of contracts in banana and pineapple industries is discussed in sections 4.0 and 5.0 respectively. Key findings and issues are presented in section 6.0. Finally, the paper ends with concluding comments in section 7.0.

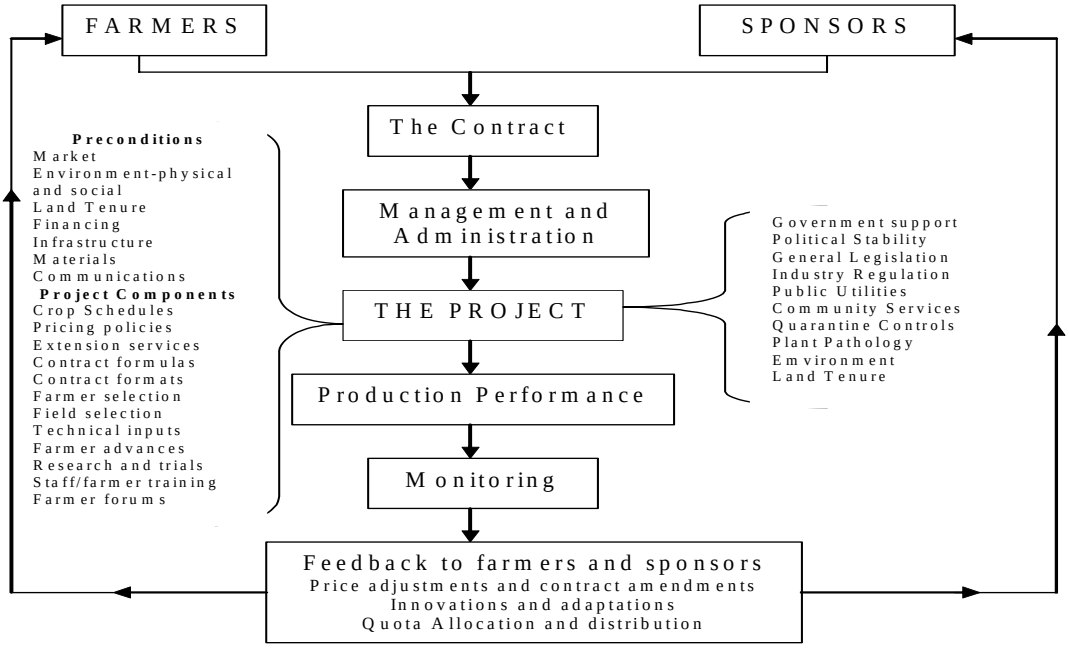
2.0 ANALYTICAL FRAMEWORK

This section presents the analytical framework used to examine contractual arrangements and their implications on efficiency and equity.

In what follows, the contract farming framework by Eaton (1998) is presented which outlines the various aspects considered in contract growing. The benefits and costs in contractual arrangements for the grower and the contractor are also discussed. It should be noted that this model merely outlines the relevant factors in contract growing and does not provide an economic framework that allows analysis on the implications particularly on equity and efficiency. Thus, the structure conduct performance (SCP) framework is presented in section 2.2 and integrated with Eaton's model to include analysis of external factors or those factors outside or external to contract growing project. To address the underlying issues in contractual arrangements and provide a microeconomic framework in the analysis of contract growing, a principal agent model is presented in section 2.3. Finally, considering the fact that commodities being examined such as bananas, and pineapples are differentiated and branded and produced by multinational or large domestic firms, a possibility exists that these firms may exercise market power in the input and output markets. This issue of market power is tackled in section 2.4.

2.1 Contract Growing and Vertical Integration

A guide on contract farming was developed by Charles Eaton and Andew Shepherd (2001) published by the Food and Agriculture Organization (FAO). This guide includes a framework in contract growing which outlines the various components of the contract and the factors that affect it (Figure 1). It outlines the external factors that include the market, the physical and social environments, infrastructure facilities, and government policies among others. It also indicates that the contract is a dynamic process. As such, it is necessary to monitor and evaluate the gaps so that adjustments, improvements and innovations can be made. In this framework, the intensity of contractual arrangements depends on the complexity and the extent of the agreements in the areas of marketing, production inputs and management particularly in terms of production methods, cultivation and harvesting specifications.



Source: Eaton 1998

Figure 1. Contract Growing Framework

According to the guide, there are various benefits and costs or problems involved in contractual arrangements as gleaned from the various case studies done in many countries (Eaton and Shepherd 2001). These are presented in Table 1 including the benefits and the costs of vertical integration (Carlton and Perloff 1994).

It can be observed that contractual arrangements and vertical integration are similar in many aspects particularly with regards to the motives of contractors and firms that vertically integrate. Firstly, as what can be extrapolated from the benefits and costs outlined in Table 1, contractual arrangements and vertical integration are being pursued either to reduce costs, minimize uncertainty or eliminate externalities. Secondly, contractors and vertically integrated firms may exercise market power. The latter like some contract growers are large firms dominating the industry and their products are differentiated and branded. For example, the contractors in the commodities covered in this study are multinationals (Dole and Del Monte for banana and pineapple) and large domestic firms (San Miguel Foods/Purefoods Inc., RFM, United Robina Corporation, Vitarich, JAKA for poultry). These firms operate in concentrated industries where few firms dominate the industry. Thirdly, there are contractors that are also vertically integrated firms like the case of Del Monte where they produce pineapples through leaseback arrangement and export these under their Del Monte brand. Vitarich Corporation processes their dressed chicken and operate a number of retail outlets for their poultry products under the Vitarich brand name.

On the other hand, there are also a number of differences between contractual arrangements and vertical integration. One fundamental difference is that contractual arrangements to some extent, uses open market transactions particularly when it comes to choosing the growers or in renewing contracts whereas vertically integrated firms do not. In addition, because markets are not tapped, vertically integrated firms do not bargain with suppliers in the case of backward integrated firms and with buyers in the case of forward integrated firms.

Identifying the costs and benefits in contractual arrangements and vertical integration and comparing contractors and vertically integrated firms provide insights into the underlying factors affecting contract arrangements. However, before these are explored in the principal-agent framework, the structure conduct performance framework and its function in analyzing contractual arrangements are first discussed.

Table 1. Benefits and Costs in Contractual Arrangements and Vertical Integration

PLAYERS	BENEFITS	COSTS/PROBLEMS
GROWER	•Inputs and production assistance provided by contractors •Credit availability •New technology and skills learned •Reduce price risks as prices are often pre-determined •Open up new markets	•Risks of market and production failures •Subject to quota manipulation particularly when there are management and marketing problems •Contractors exploit monopoly position •Corrupt staff of contractors
CONTRACTOR	•Contract farming with small farmers is politically acceptable •Overcome land constraints •Production is more reliable compared to purchasing in open markets •Less risk by not being responsible for production •More consistent quality compared to open market purchases	•Lack of security of tenure of contracted farmers constraining availability of production area •Social and cultural constraints limit application of prescribed technology •Management problems and lack of consultation lead to farmer discontentment •Reduction in production level due to growers selling to other buyers •Diversion of inputs to other purposes reducing production levels
VERTICAL INTEGRATED FIRM	•Lower transaction costs such as those of buying from or selling to other firms •Steady supply of inputs •Reduce delivery problems •Correct market failures due to externality •Avoid government restrictions, and regulations such as price controls, profit restrictions and taxes on profits •Increase and create monopolistic power •Eliminate market power	•Costs of supplying its own production inputs or marketing its own product may exceed the benefits of depending on competitive markets •Difficulty and costs of managing a larger firm increase •May have large legal fees in the case of merging with another firm

Source: Eaton and Shepherd (2001) and Carlton and Perloff (1994)

2.2 Structure Conduct Performance Framework

The Structure-Conduct-Performance or SCP is discussed here in order to provide an economic framework within the context of the contract growing framework of Eaton (1998). The SCP approach was pioneered by Bain (1951) as a response to a gap in the application of case studies developed by Mason in the 1930s. These cases were found to be costly to prepare and limited in terms of their applications in other industries (Scherer 1980). On the other hand, the SCP approach adopts the concept that the organization and structure of markets determine conduct of industry and thereby indirectly affecting market performance (Figure 2). Within this framework, the testable hypothesis is that average profit in concentrated markets is higher than in less concentrated markets. To test this hypothesis, profits are regressed against a concentration variable (assumed to be exogenous) along with other demand and supply variables using cross-section data. A positive relationship between profits and concentration is interpreted as evidence of market power (Bresnahan 1989). The advantage of this approach is that it captures important structural parameters across industries and hence provides insights into identifying sources of market power. However, the concentration variable may be endogenous such that higher profits may not be due to market power, but to lower costs as concentrated markets imply larger firms which may be more efficient. Moreover, when markets are contestable, few firms may behave competitively because of threat to entry.

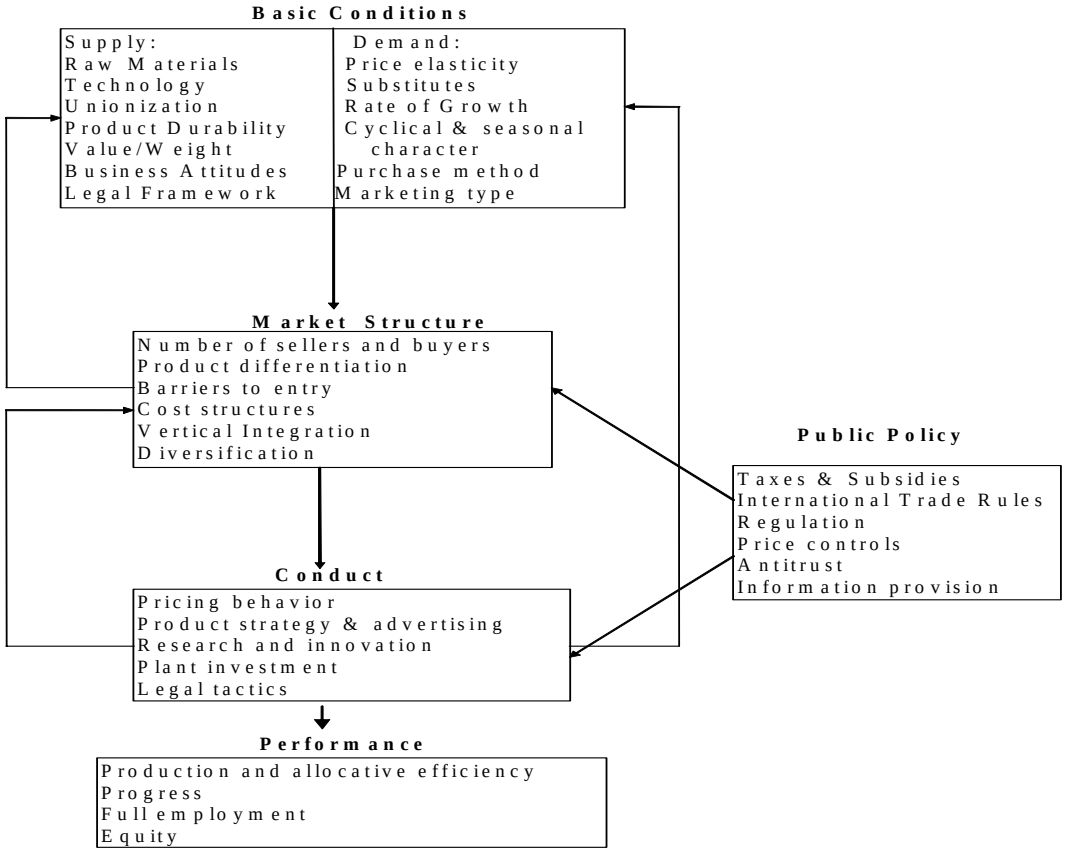


Figure 2. Structure Conduct Performance Framework

Source: Scherer and Ross (1990)

These criticisms led to the development of an alternative approach that focuses more on the aspects of market conduct such as the behavior or strategic reactions of firms in the industry. It addresses the weak theoretical foundation of the SCP approach and provides a concrete derivation of models based on microeconomic theory. This alternative approach is dubbed the New Empirical Industrial Organization or NEIO. According to Bresnahan (1989), the NEIO approach "sees itself as taking the best from the two great empirical Industrial Organization traditions: SCP and industry case studies" (p. 1013). Various models have been developed under this general approach which can be broadly classified into those that estimate marginal cost directly or conjectural variation models and comparative statics models. The latter can be further subdivided into comparative statics in demand, supply, costs and industry structure (Bresnahan 1989). These models use time series data to determine the type of competition and the degree of market power exerted by firms without necessarily postulating the behavioral assumptions of firms in the industry before studying them (Bresnahan 1989).

Despite the limitations of this approach, it provides insights into the relationships of the various factors or preconditions identified in figure 1 with market structure, conduct and performance particularly in terms of equity and efficiency. Notwithstanding the aforementioned limitations between the causal relationships of market structure, conduct and performance, the SCP approach provides an economic framework where preconditions in Figure 2.1 can be classified as demand and supply conditions that affect market structure and influence conduct of firms that determine industry or economic performance. Given the supply and demand conditions and the policy environment, firms may choose to tap open market transactions, vertically integrate or venture into contract growing. Under these options, conduct of firms varies particularly in terms of pricing, research and development and so on. Figure 3 presents an integration of Eaton (1998) and the SCP approach (ie Figures 1 and 2).

2.3 Principal-Agent Model

While the SCP approach builds on Eaton's model by providing an economic framework, it does not address the incentives underlying contracts in a microeconomic framework. However, the SCP and Eaton models provide insights into the factors affecting these incentives. Both parties in a contractual arrangement consider the benefits and costs involved as discussed earlier. In any contractual arrangement, it is safe to assume that both parties' objective is to maximize profit or minimize cost. Hence, for a grower or a contractor involved in a project producing one output, the objective function becomes:

$$\max \Pi = pQ(X) - WC(X) \qquad (1)$$

where Π is profit or net benefit, p is the price of output, X is the input and W is input price.

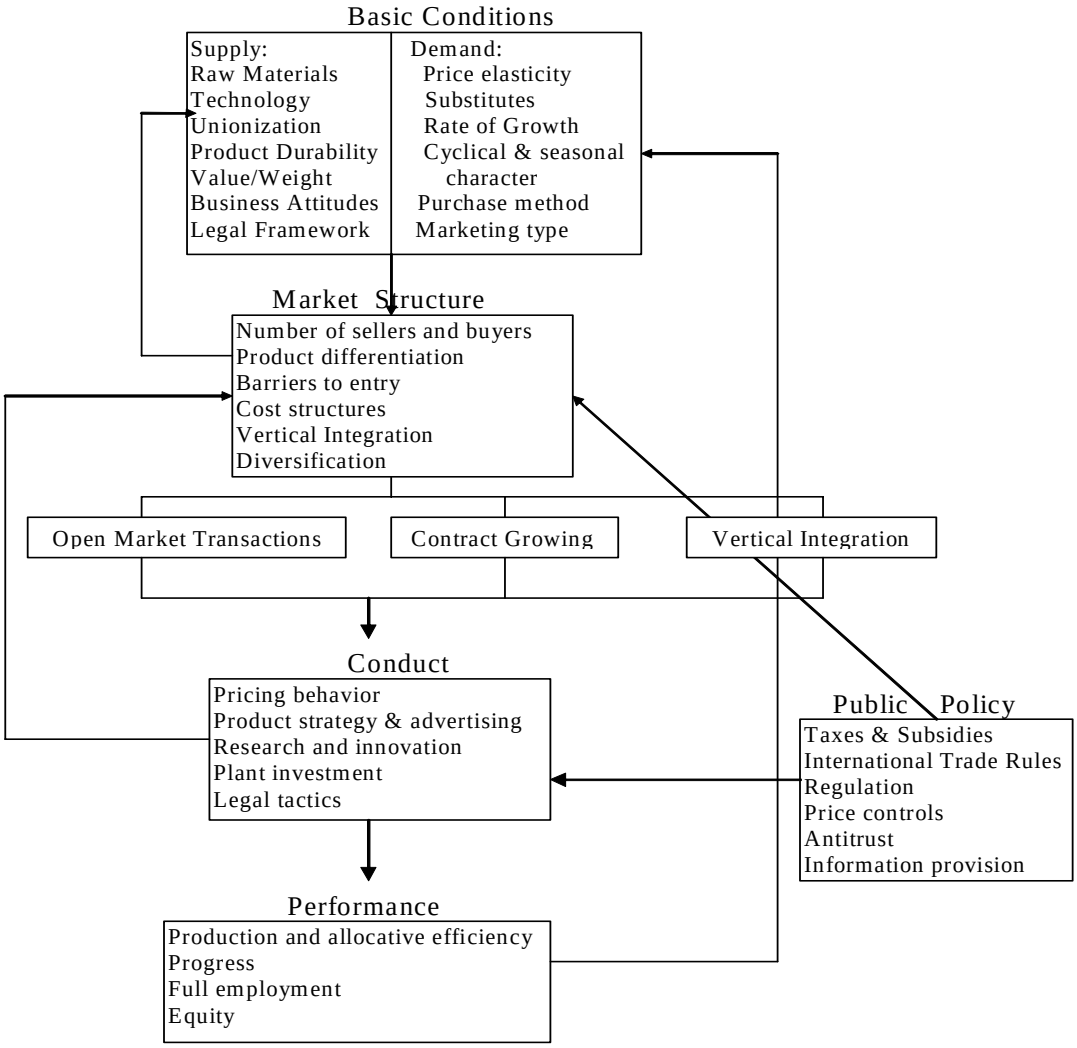


Figure 3. Contract Growing within SCP Framework

2.3.1 The Agent

Consider the case of an agent or a grower with a net benefit that is a linear function of output:

$$\Pi = w + r + \alpha Q(X) - \beta C(X) - \delta F \qquad (2)$$

where w is wage and r is rent. Both are assumed fixed. It should be noted that the agent or grower can also own land and facilities. Q is the function of incentives which can be in the form of output, price, mortality level, quality levels or grades and α is the strength of incentives. X is the input, β is the share of agent to cost of inputs, F is fixed investments and δ is the share of agent to cost of fixed investments.

The above model captures the peculiarities of contracts of the commodities covered in this study. There are various types of contracts that can be characterized under this framework. Examples are:

1) Fixed wage: $w > 0, r = 0, \alpha = 0, \beta = 0, \delta = 0$. Agent works for the contractor or principal who takes care of overall management of the project.

2) Labor and Rent: $w > 0, r > 0, \alpha = 0, \beta = 0, \delta = 0$. Agent works for the contractor and receives rent for his land or facilities.

3) Fixed Rent: $w = 0, r = 0, \alpha = 1, \beta = 1, \delta = 1$. Agent takes care of overall management of the project and pays rent to principal who owns the land or facilities.

4) Sharecropping: $w = 0, r = 0, 0 < \alpha < 1, \beta > 0, \delta > 0$. Agent shares with principal the output and cost of inputs.

5) Marketing Purchase Agreement: $w = 0, r = 0, 0 < \alpha < 1, \beta = 1, 0 < \delta < 1$. Agent sells the output to the principal and takes care of overall management of the project based on production methods prescribed by the principal

Following Lanzona (2002), output Q is a function of input X plus a random noise e:

$$N = Q(X) + e \tag{3}$$

where e has a mean of zero and a variance of σ^2. Let the agent's utility U from an uncertain profit stream Π be represented by the mean-variance form:

$$E[U] = E[\Pi] - \psi \operatorname{var}[\Pi] \tag{4}$$

where ψ is the degree of risk aversion.

Assuming linear profit function, profit from choosing input level becomes:

$$\Pi = w + r + \alpha Q(X) - \beta C(X) - \delta F + \alpha e \tag{5}$$

Hence, expected profit is $\Pi = w + r + \alpha Q(X) - \beta C(X - \delta F$ and the variance becomes $\operatorname{var}[\Pi] = \alpha^2 \sigma^2$. With a mean-variance utility function, the agent chooses $\overline{X}$ to maximize

$$w + r + \alpha Q(X) - \beta C(X) - \delta F - \psi \alpha^2 \sigma^2 \tag{6}$$

The first-order condition is:

$$\alpha Q'(X) - \beta C'(X) = 0 \tag{7}$$

.

Applying comparative statics analysis on key variables yields the following arguments:

1) Effects of incentives to inputs

$$\frac{\partial X^*}{\partial \alpha} = \frac{-Q'}{\alpha Q'' - \beta C''} > 0 \qquad (8)$$

The above result shows that the level of inputs increases as strength or level of incentives increases. Note that in order for $\frac{\partial X^*}{\partial \alpha}$ to be positive, the production function A must exhibit diminishing returns such that $Q'' < 0$. The main implication from this result is that the principal can encourage raising the level of inputs by providing more incentives in the contract.

2) Effects of cost share to inputs

$$\frac{\partial X^*}{\partial \beta} = \frac{C'}{\alpha Q'' - \beta C''} < 0 \qquad (9)$$

Unlike the effect of incentives, the level of inputs decreases as the cost share of inputs increases as shown by the above result. This implies that the principal can increase level of inputs or participation from the agent by reducing the marginal cost of inputs. This can be done by increasing the level of productivity through technological innovations or by reducing the cost of inputs by providing credit cheaper than what is being paid by the agent.

2.3.2 The Principal

Assuming the principal is risk-neutral, equation (2) becomes:

$$\Pi = (1-\alpha)Q(X) - (1-\beta)C(X) - w - r + (1-\delta)F \qquad (10)$$

subject to the following constraints:

$$w + r + \alpha Q(X) - \beta C(X) - \delta F - \psi \alpha^2 \sigma^2 = \eta_0$$

$$X = X^*(\alpha, \beta)$$

where all variables are as previously defined.

The first constraint is known as the participation constraint. This states that the agent's expected utility from contracting with principal must be at least equal to his reservation utility. The other constraint is the incentive-compatibility constraint which means that the principal must design a contract such that the agent must have the incentive to carry out the actions required from the contract. The following maximization problem results from substituting these two constraints into equation (10):

$$\max Q(X^*(\alpha,\beta)) - C(X^*(\alpha,\beta)) - \psi\alpha^2\sigma^2 - \eta_0 \quad (11)$$

From equation (11), the first order condition is:

$$\left[Q'(X) - C'(X)\right]\frac{\partial X^*}{\partial \alpha} - 2\psi\alpha\sigma^2 = 0 \text{ and } \left[Q'(X) - C'(X)\right]\frac{\partial X^*}{\partial \beta} = 0 \quad (12)$$

where $\frac{\partial X^*}{\partial \alpha}$ and $\frac{\partial X^*}{\partial \beta}$ are defined in equations (8)and (9).

3.0 EMPIRICAL FRAMEWORK

The analytical framework discussed in the previous section serves as the basis of the empirical analysis of contractual arrangements in banana, and pineapple in Mindanao. In section 3.1, the empirical counterpart of the principal-agent model presented in section 2 for each of the commodities examined. Procedures on applying the proposed models in the analysis of contracts are discussed in section 3.2. Finally, the data and limitations are outlined in Section 3.3.

3.1 Contracts

3.1.1 Banana

Based on the contracts covered in the key informants survey, the empirical counterparts of the model in equation (2) are given below. It should be noted that only those types of contracts that were covered in the survey are discussed. Moreover, the empirical models below only consider the agents and not the principals since models for the latter are derived based on the former and vice versa (for e.g., refer to equation 10). Thus, presenting the models of one player i.e. agent or principal is adequate for this purpose.

3.1.1.1 Fixed wage and lease arrangements

Agent: $\Pi = w + r$

The agent receives wage and rental fees from the principal. All expenses to grow bananas are incurred by the principal. Hence $w > 0, r > 0, \alpha = 0, \beta = 0, \delta = 0$

Principal: $\Pi = -w + -r + Q(X) - C(X) - F$.

The principal pays the agent for his labor and rent but shoulders all expenses incurred in growing bananas. Hence $w > 0, r > 0, \alpha = 1, \beta = 1, \delta = 1$.

3.1.1.2 Growership arrangement

Agent: $\Pi = \alpha Q(X) - \beta C(X) - \delta F$ (13)

The grower or agent provides land and labor as his counterpart and shares expenses with the principal. $w = 0, r = 0, 0 < \beta < 1, 0 < \delta < 1$. Incentives are also provided such that $0 < \alpha < 1$.

3.1.2 Pineapples

Like in some of the banana contracts, the prevalent contract in pineapples is the wage and leaseback arrangement. Because of the longer gestation for pineapples than bananas (i.e three years for pineapples from planting to harvesting compared one year in banana), however, lease extends up to 25 years compared to two years in banana. Hence:

Agent: $\Pi = w + r$ (14)

The agents are hired as employees of contractors who paid them rental fees and shoulder all expenses incurred in pineapple production and marketing. Hence $w > 0, r > 0, \alpha = 0, \beta = 0, \delta = 0$

Principal: $\Pi = -w + -r + Q(X) - C(X) - F$ (15)

3.2 Procedures

Based on the analytical or theoretical framework presented in the previous chapter, there are basically two sets of factors that affect contractual arrangements. These are the external and internal factors. Analysis on these two sets of factors is conducted for the three commodities covered in this study.

The internal factors are those that are stipulated in the contract that are basically the terms and conditions or the responsibilities of the principal and the agent. Here, the principal agent model is applied.

The external factors are the factors external to the project or contract such as government policies, supply and demand conditions and so forth. Here, the factors outlined in Eaton's model (Figure 1) will be considered but will be categorized into four parts: supply and demand conditions, locality or the social and physical environment and policies.

Analysis of these two sets of factors will provide insights into the structure and conduct of the players in the industries examined and their implications on performance particularly efficiency and equity. These are implied in the SCP and market power models presented in the previous chapter. It should be noted that the principal-agent model is based on the profit or payment-maximizing model with basically two components: the terms on incentives and costs. These are affected by the prevailing demand and supply conditions in the industry.

The procedures are outlined in Figure 4.

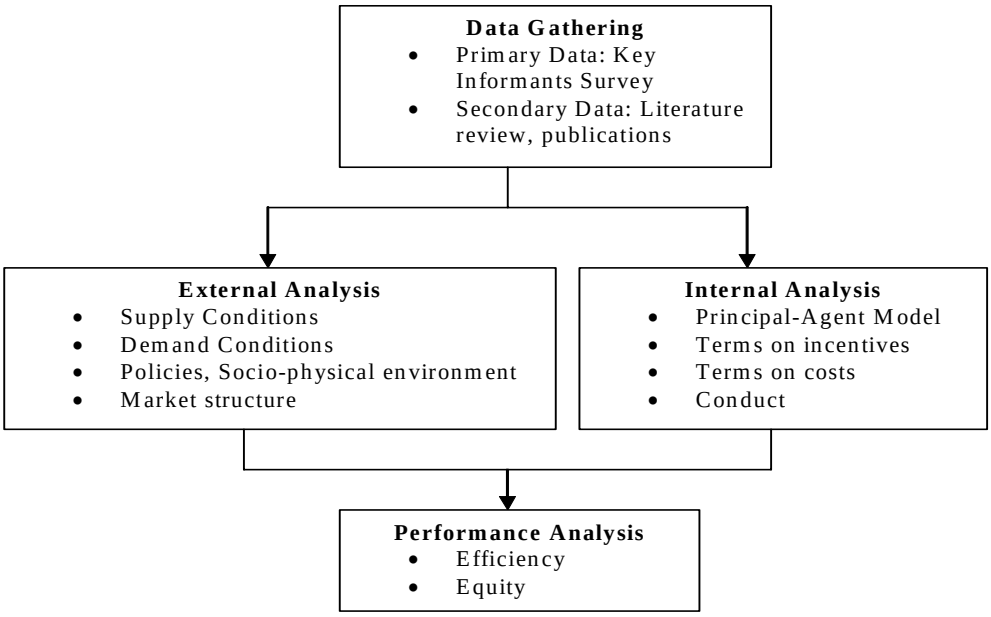


Figure 4. Empirical Analysis Procedure

3.3 Data and Limitations

Data used in the analysis are based on both primary and secondary data. Primary data were gathered through key informant interviews while secondary data came from previous studies available from journals, thesis, internet and other publications. The external analysis relies heavily on secondary data. The internal analysis, on the other hand, is based on the results of the key informant survey as well as from the written contracts that were sourced from the respondents.

There were basically three regions covered in the study. These regions were chosen as they considered as the production centers for the commodities covered in the study. For banana, the regions covered are XI and XII particularly Davao del Norte and South Cotabato. The latter used to be a province in Region XI but it has been under Region XII since September 2001. Production of pineapple is concentrated in Regions X and XII specifically the provinces of Bukidnon and South Cotabato. Finally, key informants interviews were conducted in regions X and XI for poultry mainly in Bukidnon, Misamis Oriental, Cagayan de Oro City and Davao City.

It is necessary to have at least one key informant for each type of agricultural contract including the major players in the industry. For example, in poultry industry, contracts of major poultry integrators such as San Miguel Foods, Swift Foods and Vitarich for breeder farm, hatchery, grower and even hauling should be covered. Similarly, for banana and pineapple industries, it is critical to cover contracts between cooperative, corporate farms and individual growers. The cooperatives are particularly interesting because majority are cooperatives of agrarian reform beneficiaries.

A number of problems were encountered with the key informants survey. One of these is that many of the data asked were confidential from the point of the respondents such as copies of contracts, prices, costs, capitalization, etc. Another problem is that majority of the respondents identified have busy schedules since most of them are top executives and businessmen who also refused to provide alternative or substitute respondents.

4.0 CONTRACTUAL ARRANGEMENTS IN BANANA

4.1 Banana industry

Exporting banana in the country started in the 1960's with rapid growth in the first 10 to 15 years. Historically, the commercial growing of banana in Davao started after World War II when the abaca industry, the major export of the area before the war, experienced a slowdown. It then expanded as more multinationals infused investments in the area.

Cavendish[5] banana is considered a staple fruit in most major export markets such as Japan and New Zealand. The latter, albeit its small population, has a per capita consumption of 1-2 boxes a week or 18 kilos per capita. This is higher than Japan's 12 kilos per capita. China was recently tapped about six years ago followed by New Zealand, but the biggest prospect is Australia with projected consumption of 15 to 20 million boxes per year. Australia also grows Cavendish bananas consumed domestically. In fact, their growers are threatened by the entry of Philippine bananas that are of high quality but low-priced. Markets also include Middle East countries that are being supplied by popular brands such as Chiquita, Del Monte, Dole and other foreign brands.

Export demand is projected to increase by 3% annually from 2003-2007 according to the Philippine Banana Exporters Association (PBGEA). This low growth rate is due to economic recessions experienced by traditional export markets. Some exporters see no growth in export unless Philippines gains access to Australian market with expected sales volume of 18 million boxes. Major suppliers such as Lapanday Foods, Tagum Agricultural Development Company (TADECO), Marsman-Drysdale, Dole- Stanfilco, and other smaller exporters are not only competing against other brands but also with other fruits. The economic downturn in major markets, such as Japan that accounts for 43% of total banana exports is expected to lower demand and price. According to PBGEA, buyers in Japan are asking suppliers to reduce price ranging from 10 to 20% even for those contracts already negotiated.

The Philippines is now the third largest producer of Cavendish banana next to Ecuador and Costa Rica. It displaced Columbia in the third spot in 2003. Class A Cavendish banana accounts for the bulk of export. These bananas are packed in boxes weighing an average of 13 kg per box at an export price of US$2.80/box FOB.

Mindanao, in particular, has large banana plantations because the island is an ideal area for banana production with large contiguous tract of land available, typhoon free, even rainfall year-round, rich soil, and abundant human resources. Besides, Mindanao has a competitive advantage

to supply fresh and processed food to different countries in the Asian region because of its strategic location compared to its competitors from South America.

Plantations in the island are mostly concentrated in the Davao regions covering more or less 26,000 hectares with gross export value of over US$200 million per year. Such areas include Davao Oriental, Davao del Norte, Compostela Valley, and Davao City with each exporter appears to be concentrating on one contiguous area. For instance, the Davao Oriental plantations are controlled by Lapanday Foods, Davao Norte by Dole-Stanfilco and TADECO-Del Monte Fresh, and Davao City by Marsman- Drysdale.

In terms of yield, the Philippine banana industry has the highest yield in the world at 4,692 boxes per hectare per year attained by Lapanday Foods Inc. On the average, production yield is approximately 3,500 boxes per year. With low prospect in export, exporters implement strategies to lower costs and improve productivity. Research on pest management to reduce dependency on imported chemicals is being done. Efforts to improve labor productivity are geared towards upgrading incentives. These are some strategies currently being implemented by PBGEA members to enhance competitiveness.

Major exporters are Lapanday Foods (25% share producing 28 million boxes of Cavendish bananas), TADECO – Del Monte Fresh Produce (20%), while Dole-Stanfilco, Marsman-Drysdale and other exporters shared the remaining 55%. Moreover, each exporter has its own cooperatives or farmers' associations that supply fresh bananas. These firms have their own brand and support facilities such as box plant, trucking, cooling warehouse, shipping, packing sheds, etc. These firms formed PBGEA or Philippine Banana Growers and Exporters Association. This association acts as an advocacy group for issues such as agrarian reform, lease rentals, wage rates, etc.

While banana exporters gain from peso depreciation, these are being offset by higher cost of imported materials. Growers use imported pesticides and fertilizers as well as imported spare parts and machineries. The sustained growth of the banana industry in Mindanao led to the emergence of support enterprises. These include the use of biotechnology on seedlings production, pest control, soil and plant nutrient analysis. Thus, there are firms in Mindanao that provide technical services to banana plantations and other agricultural industries such as Biotrends Inc, ITRI (Intelligent Agro-Technical Resources Inc), and Dole Research. Their services also include production of tissue cultured mini-plants, conduct soil and plant tissue analysis and other technical services.

The contractual arrangements in the banana industry particularly on fresh Cavendish banana for export have been significantly affected by the implementation of the Comprehensive Agrarian Reform Law (CARL). For instance, before CARL, Dole-Stanfilco owns four subsidiary banana plantations, two of which are the Diamond Farms and Checkered Farms while Lapanday owned the Twin Rivers Farm and Hijo Plantations. However, after CARL, almost all plantations were managed by cooperatives under contract arrangement with multinational buyers such as Dole, Del Monte, Marsman-Drysdale, and Lapanday. To maintain productivity of the private or government plantations now owned by the farm workers and in order to sustain farmers' income, a number of options were explored such as contract growing, joint venture and leaseback

agreements. Most multinationals did not opt for leaseback arrangements but chose to steer farm workers' cooperatives along the path of 'growership' contract.

Success achieved with the multinational-buyers – cooperatives contractual arrangements has resulted to the organization of more farmer associations. Small farmers are encouraged to pool their farms to grow bananas and collectively transact with the buyer. However, they maintain ownership of their individual farms and engage in a contract to sell to the multinational buyer such as the case of Sayapa Farm Growers Association in Compostela Valley. The move was initiated by the multinational-buyers in order to expand their supply base, as a response to increase in demand in the world market, as well as to improve bargaining power particularly with cooperatives formed by the beneficiaries of CARL.

Land reform policies pertaining to commercial farms affected large banana plantations owned by multinational companies. Initially, it has caused a lot of uncertainties that led to the withdrawal of a number of foreign investments such as Del Monte. Social unrest was evolving that stemmed from failures of the cooperatives to uplift the economic status of the agrarian reform beneficiaries' (ARBs). Currently, however, there are some cooperatives that have formed a federation of cooperatives (FEDCO) and organized the Mindanao Organic Ventures Enterprises in 2002 (MOVE), a joint venture with Alter-Trade based in Japan who has a link with Maronaka chain of stores. MOVE directly exports low chemical bananas to Japan. Contractual arrangements therefore have brought in benefits that include the transfer of technology, availability of market and credit. Some cooperatives in fact that have previously depended on these contracts have consolidated and now directly export their own produce. In what follows, we make a closer look of these contractual arrangements in order to examine the impact of contract growing on efficiency of agribusiness ventures.

4.2 Contracts

The terms and conditions of the contract can be classified into two categories. The first category refers to the terms and conditions regarding the output. The other category refers to those relevant to the inputs used to produce the product or output. In each category, we differentiate the roles of the principal and the agent.

4.2.1 Output

4.2.1.1 Principal (buyer)

The principal or the buyer pays the agent (seller/grower) per box weighing 13 kilos of bananas meeting specific quality requirements. Bananas for the Japan market, for example, is priced at around U.S. $ 2.10 per box of export quality bananas loaded on board the buyer's designated cargo truck. The conversion rate is based on the Bankers Association of the Philippines (BAP) conversion rate at the time the vessel containing the seller's bananas departs from any Davao port. Remittances of export proceeds from the seller's preceding month's production are made within 15 days after the end of the month.

The price of the output depends on the arrangements with regards to it inputs. There is a price review/negotiation at least every 2 years or sooner should there be an increase of 5% in the price of imported materials, such as fertilizers, herbicides, fungicides, insecticides and others, either or both parties may call for a price review/negotiation. All outstanding accounts and compensation due to the buyer and loans guaranteed by the buyer are deducted first from the gross sales proceeds before payment. The buyer has the first lien over the seller's sales proceeds including the subsequent ones until the latter's account is fully paid. Should there be changes in the industry specifications on weights, the price may be adjusted either upward or downward.

Total production area is specified and the principal has the right of first refusal to all bananas produced from the additional area not specified in the contract.

The buyer has complete ownership of the bananas and is treated as the exclusive exporter of the bananas of the seller. The buyer, or its representative, has the right to reject all bananas that do not qualify for shipment as specified by the cutting order and/or do not meet the quality and grade standards specified. Rejection can be made at anytime prior to buyer's acceptance of the bananas loaded on board the buyer's designated cargo truck. The buyer also has the first option to purchase the banana rejects or those that do not conform with any export specifications; with price, terms, and conditions agreed upon by the buyer and the seller. Banana reject refers only to those that do not meet the specifications.

Upon the expiration of the term of the agreement, the buyer shall have the right of first refusal over matters that concern the purchase and marketing of cavendish bananas of the seller. When a fortuitous event and/or force majeure occurs, the buyer shall be relieved of its obligation to purchase and pay for the bananas produced by the seller. In case of any dispute or issues raised by either party, the buyer shall continue to purchase bananas from the seller. In a chopping situation, the price of said bananas shall be U.S. 1.20 per 13 kg (net) box. The conversion rate is the same. The seller's average box-stem ratio over the last three shipments prior to the chopping period shall be the basis in computing the following: converting bunches to boxes; and bananas that will accrue to the seller as reject.

4.2.1.2 Agent (Seller)

The agent or seller produces banana to the maximum capacity of the farm, as much as practicable, consistent with productive and sustainable agricultural practices. All export quality bananas that meet the specification and quality required are sold exclusively to the contract buyer. In the event the seller sells bananas from subject farm to any other person or entity, the seller shall pay to the buyer US $ 2.10 per 13 kg (net) box of bananas sold to such third person or entity.

4.2.2 Input

4.2.2.1 Principal (Buyer)

In the event that the agent or seller decides to sell or otherwise dispose of his land which is the subject of the agreement, the buyer or its nominees shall have the right of first refusal, pre-

emption and redemption, subject to existing provisions of law, upon the same price and under the same terms and conditions as those offered to other persons or entities. All costs pertinent to such registration shall be borne by the seller. The buyer shall continue to operate the farm until such time the loans or other financing agreements guaranteed by the buyer as well as all advances and moneys due to the buyer shall have been fully liquidated. The buyer shall only exercise this right if all other options have been exhausted and shall seek first advice of Department of Agrarian Reform and Land Bank prior to the exercise of this option.

The principal has the option but not the obligation to supply the seller with plastics, fertilizers, and other inputs needed in the farm for which the seller shall be charged at cost, and for which the buyer shall deduct from the proceeds of bananas due to the seller. The principal or the buyer provides the seller with technical services.

On the best effort basis, the buyer shall advance to the seller pest and disease materials over the normal requirements in the event the seller experiences a high degree of pest and disease infestation in the farm.

The buyer shall supply and deliver for free, all the packing materials e.g., cartons, labels, and stitching wires and processing chemicals to the seller. An accounting of the boxes, processing chemicals and packing materials received by the seller shall be done at anytime as the buyer desires. Losses or damages shall be paid by the seller.

Upon the termination of this agreement, the buyer shall have the right to dismantle and/or remove all installations and improvements introduced and owned by the buyer on the seller's farm.

The buyer may abstain from purchasing bananas from the seller when the processing, packing, loading, transporting or any movement thereof is restricted by fortuitous events and/or force majeure, war, revolution, strikes, civil disorder, government restrictions. Both parties agree to notify each other in writing of such eventuality. The seller shall thereafter be free to dispose of such bananas by other means until the buyer notifies the seller that it is again ready to receive such bananas.

The principal or the buyer reserves the right to assign its right and interest over any aspect of this contract to a third party without need of consent from the seller.

4.2.2.2 Agent (Seller)

The agent or the seller shall not, at any time during the life and term of this agreement (including any renewal or extension hereof), sell, dispose of, transfer, assign or lease in favor of any third party the land or any portion thereof, including the bananas and other agricultural crops planted thereon, and all permanent improvements attached to the land and introduced by the buyer, without prior written consent of the buyer.

The seller shall keep and maintain its title to the farm free of any liens and other encumbrances that may be superior to the lien created by this instrument by the punctual payment of taxes and other charges, liens or encumbrances thereon.

It is understood that all taxes, fees assessments and other charges of whatever nature which may be assessed against the land, buildings, fences, bridges, crops, facilities, equipment and/or kind of improvement(s) on the land, except those infrastructures and equipment owned by the buyer, shall be for the account of and payable by the seller.

The agent or seller handles and funds the production and operating costs of the farm. The agent also maintains or improves at its expense the drainage canals and roads situated in the farm, except primary canals.

The seller permits the buyer or its agent to carry out aerial Sigatoka control activities charged to the seller's account and expense at cost. If the buyer, however, fails to provide Sigatoka control activities, the seller has the option to engage the services of other aerial spraying companies. The seller agrees to eliminate, at its expense, trees and other obstructions that will interfere with aerial spraying.

The seller may, however, introduce agricultural practices other than those recommended by the buyer as long as these are more economically viable, and ecologically safe and the quality of the bananas produced conform to the specifications annexed to the agreement.

The seller permits the buyer's personnel or persons or entities designated by the buyer to inspect the farm at any time, at no cost to the seller, to evaluate pests and disease control, check the other cultural practices applied, conduct quality control procedures, validate production estimates and for such other purposes as the buyer may consider necessary in banana production.

Should the seller fail to follow the buyer's prescribed cultural practices to the extent, in the opinion of the buyer, that the success of the crop is endangered, the buyer shall have the right, upon one week's notice in writing, to handle the operation of the seller's farm covered by the agreement.

The common components of banana production and purchase agreement contract or contract to sell between a banana exporter and cooperatives/farmers' associations are summarized in Table 2. It is interesting to compare the terms and conditions of the contract across banana buyers or exporters as shown in the table 3.

The lease arrangement as discussed in section 3.1.1.1 involves payment of lease rental and wages to agents or farmers by the principal or banana firms. Production inputs are provided. From the key informant interview, the lease rental in 2004 ranges approximately from P 6,500 to P12,000. The terms of the contract vary across firms. The typical contract provides cash to the farmers upon signing based on the three- year lease rental and compensation for productive agricultural crops chopped down in the farm. The agent also has option to work in the farm, recommend up to five employees per hectare as well to contract grow after five years.

Table 2. Common features of terms of contract in the banana export industry.

Contract terms (as of 2002)	Terms of Contract	
	Buyer/Principal	**Grower/Agent**
Land Area	Buy bananas produced from the specified area but has the right of first refusal to buy exclusively the banana products from any additional area or when the supplier intends to sell the area	Exclusively sell to the buyer all exportable banana fruits meeting specifications and quality prescribed from the plantation's specified area with guaranteed yield
Term	Ten years and automatically extended year to year unless written notice of its cancellation will be received after 3 months on the 9th year that re-negotiation will commence	Ten years and automatically extended year to year unless written notice of its cancellation will be received after 3 months on the 9th year that re-negotiation will commence
Purchase price	Ex-vessel price less US$.07 for transport of fruits packing plant to Wharf, US$.08 for stevedoring, arrastre and documentation, and US$.08 rentals on infrastructures and equipment.	US$2.60/box at 13kgs per box with specifications and quality as prescribed in the harvesting and packaging specifications. Do the repair and maintenance of the infrastructure and facilities
Risk	Buyer takes responsibility only when accepted the properly cleaned and packed bananas on the vehicle of the buyer (vessel)	The seller takes full responsibility of the bananas from any damage or loss from the plantation to the wharf.

Source: Key informant interview (2002) and contracts

5.0 CONTRACTUAL ARRANGEMENTS IN PINEAPPLE

5.1 The Pineapple Industry

The largest producer of pineapples in the world is Thailand accounting for 16% of world production from 1992-2003 followed by Philippines (11%), Costa Rica (5%) and Indonesia (3%). In terms of area, however, Costa Rica has a smaller area planted to pineapples compared to Indonesia but production is higher because it has the highest yield per hectare among the top four producers.

The top five exporters of pineapples account for 29% of the world's total area for pineapple production from 1992-2003. For the last five years, this declined to 27%. Thailand, being the largest exporter of pineapple products, contribute 13% of the world's total area for pineapple production from 1992-2003 followed by the Philippines (7%) and Indonesia (6.9%). However, during the last five years, total area planted in Indonesia expanded displacing Philippines in the second spot.

Total area devoted to pineapples has expanded for the last 12 years, with faster increase in the last five years. Most of this growth came from Costa Rica, Indonesia and the Philippines

expanding area in the last five years by 13%, 10% and 4 % respectively. Thailand, the largest producer, expanded only by 0.17% but declined on the average by 1% for the last 12 years.

Table 3. Terms and conditions of contract in the banana export industry by major contractor.

Provisions (as of 2002)	Dole	Lapanday Foods	Del Monte	Marsman-Drysdale
Land	Specified the land for production, for exclusive purchase of produced exportable banana	Specified the land for production, for exclusive purchase of produced exportable banana	Specified the land for production, for exclusive purchase of produced exportable banana	Specified the land for production, for exclusive purchase of produced exportable banana
Price	US$2.60/box (13kgs/box Class A with prescribed specifications and quality) less deductions on hauling US$.07, stevedoring documentation US$ .08, facility rentals US$.08 and US$.15 for other charges and documentations. Net of US$ 2.22/box FOB	US$ 1.80/box, net, company will shoulder everything from packing shed operations, hauling, documentations and shipping.	US$ 2.00/box, net, the company will handle stevedoring and documentation	No record
Contract Period	2 – 10 years	2 – 10 years	2 – 10 years	No-record
Risk	Hauling, Stevedoring, Documentation (only)	Packing, Hauling, Stevedoring and Documentation (only)	Stevedoring and documentation (only)	No-record

Source: Key informant interview (2002) and contracts

However, in terms of growth in production, Costa Rica ranked first at 5% for the last 12 years and 4% for the last five years. Philippines ranked second followed by Indonesia. Thailand for the last 12 years posted a decline of 1.3% per year albeit managed to post a positive growth for the last five years by only 0.3%.

Of the major pineapple exporters in Asia, Philippines has the highest yield producing 315,027 hectograms per hectare compared to Thailand (233,370) and Indonesia (90,160). The latter is below the world average of 187,703 (FAOSTAT, 2004). South American exporters have higher yields than Asian exporters.

The top three fresh pineapple exporters account for 62% of the total quantity of fresh pineapple exports in the world. Costa Rica is the top exporter with a share of 27% from 1992 to 2002 which further increased to 32% in the last five years. This is followed by Côte d'Ivoire (18%) and Philippines (16%).

Thailand continues to be the top exporter of canned pineapples and pineapple juice in the world with a share of 41% and 30% respectively from 1992-2002. On the other hand, Philippines has been the largest producer of pineapple concentrate accounting for 43% of the world exports from 1992- 2002.

In terms of fresh exports market, Japan absorbed 79% while Korea consumed about 15%. While in terms of processed exports market, 180,564 tons were exported to the US (68%), Japan (6%), Canada (4%), while Netherlands and Korea had 3% each.

It is interesting to note that until the mid-1960's, when the pineapple industry in the Philippines was already flourishing, the fruit was just a minor crop in Thailand. But today, around 85% of the pineapple area in Thailand is managed by small landowners, while multinational companies manage 85% of the pineapple farms in the Philippines.

There are approximately 70,000 hectares devoted to pineapple production in the Philippines. Output of large plantations in Mindanao is mainly exported, either fresh or processed while those in Luzon and Visayas are consumed locally. Major producing regions are Northern Mindanao (top producer), Southern Mindanao (second biggest), Southern Tagalog and Bicol region with an average yield of 33 tons per hectare. From 1975-2000, Northern Mindanao contributed 52% while Southern Mindanao had 38%.

Forty seven (47) percent of the total national production is processed and 53% is directly consumed or exported fresh. The fruit is eaten fresh, dried, canned in slices, chunks, and tidbits and processed into concentrates, jam, mamalade, juice, vinegar, wine, candy or nata de piña.

There are three major producers and processors of pineapple for export in the island. Their large production area requires contract arrangements with landowners or farmers to sustain the large fresh pineapple requirements. These are Del Monte, Dole and Tiboli Agricultural Development Corporation (TADI).

Macondray and Co. Inc (MCI), an affiliate of Lapanday Foods, is the majority shareholder in Del Monte Pacific Resources, Ltd. (DMPRL). DMPRL owns the Del Monte trademark in the Philippines and manages DMPI, which operates the world's largest contiguous pineapple plantation. It covers over 14,000 hectares located 1,600 feet above sea level in Bukidnon (Northern Mindanao). The area produces more than 600,000 metric tons of pineapple per annum. This plantation is located in Manolo Fortich, Libona, Impasug-ong and Sumilao. DMPI is considered to be the biggest pineapple plantation in the Far East, and one of the oldest in the Philippines which started in 1926. It now produces pineapple under leaseback agreement contract with the Del Monte Philippines Inc (DMPI) Employees Agrarian Reform Beneficiaries Cooperative (DEARBC).

Dole Food Company of Westlake, California owns Dole Philippines together with its other affiliates. Standard Fruit Phils (Stanfilco), one of its major affiliates produces and markets fresh bananas. Tropifresh produces asparagus, solo papaya, mangoes and cut-flower, and other allied support businesses in the Philippines. DoleFil operates around 9,000 hectares of pineapple plantation and a processing plant at the foot of Mt. Matutum covering the municipalities of Polomolok, Tupi and Tampakan. Majority of the pineapples are produced from the plantation under a lease contract with DoleFil Agrarian Reform Beneficiaries Cooperative.

T'Boli Agricultural Development Inc (TADI) is a Filipino owned company with a pineapple packing and processing plant in the municipality of T'boli, South Cotabato. It operates around 5,000 hectares pineapple farms covering the municipalities of T'Boli and Surallah. TADI mainly sources fresh pineapple from the contract growers under joint agreement with the Land Bank, farmers and the company.

5.2 Contracts

Contractual arrangements in pineapple industry are mostly lease-back agreements between multinational-processors and farmers' cooperative-producers. Lease-back agreement was an offshoot of Section 8 of the Comprehensive Agrarian Reform Law which created a cooperative of agrarian reform beneficiaries from the transfer of the National Development Corporation lands (formerly leased to multinationals) to the plantation workers. Leaseback agreement was then the best option considering the large capital requirements, long gestation period of 3 years from planting to harvest and high technology requirements of pineapple production. The agreement was designed to have the least impact on both the plantation workers and the multinational company. There was no physical change in the plantation but a complicated transfer of land ownership occurred. Plantation workers continue with their job and the contractual arrangement enabled the multi-national company to have a long-term plan as commitment to a 25-year lease contract precipitated.

On lease-back agreements, the contract was slightly changed overtime due to the longer (25 years) term. Table 4 shows the common features of the leaseback arrangement employed by the multinational companies. Renegotiation was prompted on rental rates as Agrarian reform cooperatives complained of low rates compared to other crops in the area. On contract growing, negotiations usually focused on purchase price of pineapple.

Table 5 shows the common contract features of major pineapple exporters. The contract is negotiated per cycle. With Dole Philippines for example, the cycle is about three years which includes one plant crop and two ratoon crops. Dole requires at least 2 hectares at a guaranteed production of 35-40 tons per acre (depending on plant age and farm plan). Quality is set particularly on handling care, and schedule of delivery is based on farm plan schedule.

Table 4. Common features of the leaseback arrangement in the pineapple export industry.

Components (as of 2002)	Buyer	Grower
Land	Directly operates the land for purposes of growing and processing pineapple and other agricultural crops	Lease the land transferred from NDC and was assured of full employment and their dependents
Term	25 years and review on the 10th year and every 5 years after	25 years and review on the 10th year and every 5 years after
Payment of rental	Rental rate of P8,000/hectare, production bonus of 500/hectare and adjusted and increased annually at the rate of 7% starting from the date of signing	Rental rate of P8,000/hectare, production bonus of 500/hectare and adjusted and increased annually at the rate of 7% starting from the date of signing
Others	3 years advance rental to put-up a building, goodwill (onetime) bonus of P3,000 per member, employment priority, assistance in business opportunities, and the Company pays all estate taxes due to the government	3 years advance rental to put-up a building, goodwill (onetime) bonus of P3,000 per member, employment priority, assistance in business opportunities, and the Company pays all estate taxes due to the government

Source: Key informants interview (2002) and contracts

6.0 Key findings and issues

6.1 Factors affecting terms of contracts

The terms of the contract are basically affected by demand and supply conditions as well policies affecting the industry. Basically, however, the terms and conditions in the contract are designed to ensure that the grower meets quality specification, and account for various circumstances that are potentially contentious for both principal and agent. Hence, incentives and disincentives are laid out to minimize risk.

Export markets dictate the quality requirements that are reflected in the contract. The quality specifications for export in the contract are attached as appendix to the contract and were based on market requirements.

Exporters also have to meet standard practices such as ISO 9001, 9002 and 1400. Most export companies need accreditation on their management systems that are consistent with environment, and social responsibility to be accepted by importing countries. Included in the contract as basic provisions are the production, harvesting, processing, packaging, handling, and environmental standards in order to comply accreditation requirements.

Table 5. Contract features of major pineapple exporters

Provisions (as of 2002)	Del Monte Phils – DEARBC	Dole Phils Inc-DARBC	Dole Phils Inc-Growers	TADI
Land	Exclusive right to develop, cultivate, improve, plant, administer and manage agricultural projects on the land (14,000 hectares)	Exclusive right to develop, cultivate, improve, plant, administer and manage agricultural projects on the land (8,937 hectares)	Expansion project in view of the increasing demand for fresh pineapple. A nucleus enterprise that extends technical assistance, free planting materials and growers handles production to harvest (2,500 hectares)	A pure contract growing under production agreement with Land Bank, small farmers/cooperatives and the company. The farmers fully in-charge of production with technical assistance from TADI and financial support from LBP (5,000hectares)
Term	25 years renewable	25 years renewable	Every cropping (one plant crop and two rattons)	Every cropping (one plant crop and two rattons)
Payment	Annual rentals (P8,000 per hectare) (adjusted at 7% per annum), production bonus of P500/hectare and profit share of 3% of the net income	Annual rentals (P8,000 per hectare) (adjusted at 7% per annum), production bonus of P500/hectare and profit share of 3% of the net income	Pays P1.5 per kilo to all fruits produced in the farm (big or small) and pays premium at P2/kilo on fresh fruit quality	Pays P1.5 per kilo to all fruits produced in the farm (big or small) and pays premium at P2/kilo on fresh fruit quality fruits
Others	Pays taxes, priority employment of ARBs and their dependents	Pays taxes, priority employment of ARBs and their dependents	Grower pay taxes; exclusive production for the company; provided with free planting materials, technical assistance, and credit on fertilizers and chemicals; must be a member of a cooperative to facilitate Land Bank financing	Grower pay taxes; exclusive production for the company; provided with free planting materials, technical assistance, and credit on fertilizers and chemicals; must be a member of a cooperative to facilitate Land Bank financing

Source: Key informant interview and contracts (2002)

The volatility of price in the world market also affects conditions in the contract. In the case of cavendish bananas, the contract provides provision for review every two years to account for changes in the price of inputs. However, changes in demand as a basis for changing the output price specified in the contract is not explicitly stated in the contract. Based on the interview conducted, the output price is based on forecast.

To ensure the quality of output, standard production practices are required. Incentives and disincentives in meeting the quality requirements are specified in the contract. The growers are given the options to purchase own inputs or source them from the buyer as long as production standards are met.

The pooling of production and marketing services enhances efficiency as economies of scale is attained. Areas are consolidated to facilitate efficient delivery of inputs as well as in transporting and processing output. However, while the growers may have the option to source production inputs and marketing services other than the buyer, options are narrow considering the investment cost involved and limited access to credit. In fact, based on the key informant interview, the farmers do not have option to source inputs other than the buyer.

Investment cost on infrastructure and equipment needed in the plantation is one factor that determines the number of years covered in the contract. The lease arrangement in the banana industry for example, normally covers ten years which was is based on the minimum life of infrastructure investment. The term is longer in the pineapple industry reaching up to 25 years because recovery of investment is longer. Thus, the uncertainty of the direction of government policy during the initial years of CARL implementation had a negative impact on investments as the risks increased.

All provisions with regards to plant locations, logistics choice, timing, etc are grounded on the principle of attaining efficiency, effectiveness and practicality of actions. The contract ensures efficiency in producing and marketing the product through the following terms in the contract:

- Specifications and Quality Standards. The standards serve as guide to minimize supervision and make selection, packing and handling operations more efficient.

- Preventive Maintenance Guidelines (PMG). As part of the ISO 9001 and 9002 management system guidelines, standards are set on irrigation system (pump station, moisture application, and pvc pipe distribution), overhead cable propping (OHCP), drainage, roads and bridges, electrical system, shop maintenance, packing plant building, equipments and facilities, harvesting carts and related equipments, and other facilities. Preventive maintenance is regularly done by the buyer and implemented by the seller to assure efficiency of production.

- Farm Operations Guidelines and Agri-Services Guidelines. These provide standards on plant variety selection, mini-plants production, land preparation, planting, fertilizer application, pesticides spray, disease control, harvesting, trimming and survey.

The lease rental varies across firms as investment costs and marketing costs vary across areas. The distance, agronomic and topographical conditions of the area are considered as these affect production and marketing costs.

6.2 Benefits and impact on efficiency

Contract growing has produced a number of benefits for small and medium size farmers, and agricultural cooperatives which are mostly composed of agrarian reform beneficiaries. These include technology transfer, credit assistance, access to markets and lower price risks.

In the banana, industry for example, the transfer of technology has provided opportunities for some cooperatives and domestic firms to graduate from contract growing to marketing their own products using their own brands. In fact, a number of these cooperatives have formed into a federation called FEDCO a Federation of Agrarian Reform Cooperatives. This federation has established Mindanao Organic Ventures Enterprises in 2002 (MOVE), a joint venture with Alter-Trade based in Japan who has a link with Maronaka chain of stores. MOVE directly exports low chemical bananas to Japan. Moreover, small farmers who lease their lands have the option to contract grow after five years. Large domestic firms have adopted technologies not only in production but also in processing and marketing of fruits. Lapanday Foods Corporation has chartered vessels and has established its own brands and strategic alliance with a multinational retailer (Carrefour). Currently, there are independent growers who are exploring the possibility of directly exporting their produce. These cases show that the transfer of technology can lead to market access traditionally controlled by large multinational companies like Dole and Del Monte.

The uniform and strict implementation of production system by contractors ensured high quality standard outputs that meet the requirements of the market. For example, description of banana specifications and quality standards serves as guidelines to efficient selection, packing and handling of harvested bananas. Preventive maintenance guidelines (PMG), on the other hand, as part of the ISO 9001 and 9002 management system guidelines, specify standards on irrigation system (pump station, moisture application, and pvc pipe distribution), overhead cable propping (OHCP), drainage, roads and bridges, electrical system, shop maintenance, packing plant building, equipments and facilities, harvesting carts and related equipments, and other facilities. The preventive maintenance is regularly check by the buyer and implemented by the seller to assure efficiency of production. There are also farm operations guidelines and agri-services guidelines set to assure standards on plant variety selection, mini-plants production, land preparation, planting, fertilizer application, pesticides spray, disease control, harvesting, trimming and survey.

The uniform quality standard specified in the contract allows consolidation of outputs and in turn lower transportation and transaction costs. These industries, particularly banana and pineapple are globally competitive largely because of the plantation type system under contractual arrangements where benefits of economies of scale can be achieved.

In contrast with other commodities produced in Mindanao such as corn and vegetables, the lack of uniform quality standards deters opportunity for farmers to consolidate and lower

transportation cost. Farmers complain of high shipping cost from Mindanao to Manila but one of the culprits is the lack of uniform quality standard which makes it difficult to consolidate and avail of volume discounts in shipping or transporting their produce.

The uniform production requirements in the contract also allow consolidation of inputs and efficient production planning of inputs and in turn exploit economies of scale not only in producing these inputs but also in transporting them and therefore lower costs. Thus, support or downstream industries such as plastic and corrugated box production for bananas, and cannery operations for pineapples have large scale operations that are efficiently linked to the production or upstream industries.

The key to ensure production of quality outputs specified in the contract is the provision of incentives. The incentives for growers to produce high quality outputs are clearly specified in the contract. These in turn provide incentives for growers to adopt technology requirements in order to meet the quality standard required by the market aside from avoiding costs and penalties involved in not adopting production requirements. Hence, transaction or monitoring costs are minimized.

Moreover, contract growing has provided a way for contractors particularly multinational companies in banana and pineapple industries to overcome land constraints particularly with the implementation of the Comprehensive Agrarian Reform Law (Republic Act 6657) or CARL enacted in 1987 that stipulates the provision of a production and profit sharing scheme (PPS) for farm workers. However, under this law, the distribution of commercial farms was deferred for 10 years from 1987 to 1997 although the first "model" contract was developed in 1995 between Dole-Stanfilco and the agrarian reform beneficiaries (former employees/farmworkers of Dole-Stanfilco).

Production of quality bananas for exports has become more consistent compared to open market transactions.

Financial support for start-up operations is provided by the contractor. For example, a memorandum of agreement supplemental to the contract provides for materials and cash advance for rehabilitation cost (all cost of farm materials and cash advance for salaries of farm workers, cost of rehabilitation of packing sheds and other facilities were extended interest free to the seller on its initial year), signing bonus at the amount of 1-1.65 million (depending on the size of the farm to be given equally among members), and profit sharing plan at 3% on gross sales to be given aside from the rental of the land (in case of lease-back agreement).

Most multinational companies' support to the cooperatives extends beyond material-input, technical assistance or logistics support provisions. Cooperative enterprise development such as assisting investments on consumers' credit, lending, training, and other livelihood programs were extended to the cooperative (such in the case of HEARBCO I, 2 and 3 by the Lapanday Foods Inc). Maintenance of roads, river banks, watershed and waste disposal were jointly performed by the cooperative and the buyer-multinational as incorporated in the terms of infrastructure, facilities and equipment maintenance.

While risk is shared between parties, there is a guaranteed price and minimum volume purchased by the buyer. For example, in the banana industry, when demand in export market fluctuates, a guaranteed yield of 2,000 boxes per hectare class A bananas. The seller is given the option to look for buyers for the excess volume. Similarly, when price fluctuates in the world market, buying price from cooperatives is pegged at US$2.60 (gross) or 1.8 (net) per box.

In summary, contract growing ensures production of high quality standard products that meet the requirements of the market as well as lower production costs as it allows consolidation and hence exploit economies of scale. Operational efficiency is achieved and hence competitiveness of the industries is enhanced.

6.3 Some Issues

There were a number of problems that surfaced after the implementation of CARL and the contractual arrangements that evolved.

The cooperatives were not ready. Before CARL implementation, farmers were direct wage earners of multinational company such as Dole, Del Monte, Lapanday, etc where they earned P146 a day with medical and pension benefits as well as other fringe benefits such as paid vacation and sick leaves. Now under the cooperative formed to accommodate transfer of the ownership of the land, daily income dropped to less than P100/day, lost their medical, pension and other benefits, and they could hardly send their children to school (Bacon, 1999). The cooperatives were forced to accept a low price from multinational-buyers resulting from the contractual arrangements with limited fund to increase the salary of member-ARBs. Cooperatives incurred debts from multinational companies (as per record Diamond Farms lost 30 Million and Checkered Farms 11 Million upon operations – they were former subsidiary plantations of Stanfilco, a division of Dole Phils). Farm households were forced to send all members in the family to work including children as young as 7 years old to work in the plantation in order to augment family income. The agrarian reform did not improve their economic condition but instead reduced opportunities by being dependent on the buyers and led to social degradation with no opportunity to grow (Bacon, 1999).

The cooperatives had limited options. A provision of the agrarian reform law allows landowners to make voluntary offer to sell (VOS) only part of their assets when faced with a petition for land distribution (a case experienced by multinationals operating large banana plantations). Under this provision, the company retains ownership of the plantation roads, the packing sheds and the complicated network of cables needed to support the bananas and transport the bananas. These assets are basic leaving cooperatives with no options but to accept the terms in the contract such as low buying price. DAR has no power to force these companies to sell those assets.

The cooperatives have limited control on production. In 1996, the Department of Agrarian Reform redistributed the land to give Filipino plantation workers the right to become landowners through purchases financed by Land Bank of the Philippines. These cooperatives pay yearly amortization. Multinationals immediately welcomed this scheme and insisted on arrangements in which they subsidized part of the production cost (fertilizers, chemicals, etc) and paid net proceeds to the cooperatives. Cooperative members accepted the terms in order to receive

severance pay legally mandated when their status on employment ended. This move was done in order to assure quality and other standards set by export markets as well as for the multinationals to control the production.

Policy on incentives is also unclear. Under RA 6657 or CARL, entities operating lands under contractual arrangements are mandated to execute a profit-share plan if their sales exceed five million per year. Sharing plan is 3% of the gross sales from the production of the land. However, multinational companies computed the gross sales based on prevailing local market farm-gate price at P24/box instead of the actual export price (US$2.80/box). They contend that gross sales refers to the annual revenue of bananas in their raw or original form, not those that come out of the packinghouse. This triggered further disagreements between cooperatives and buyers.

The provisions in the memorandum of agreement supplemental to the contract are beneficial particularly to start up the operations if implement. They provide for materials and cash advance for rehabilitation cost that cover cost of farm materials and cash advance for salaries of farm workers, cost of rehabilitation of packing sheds and other facilities were extended at interest free to the seller on its initial year, signing bonus in the amount of 1-1.65 million (depending on the size of the farm awarded to be shared equally among members), and profit sharing plan at 3% on gross sales to be given above the rental of the land (in the case of lease-back agreement).

There are also issues on COV or cut-off volume. When demand in export market fluctuates, multi-national buyers continue to buy only within the guaranteed yield sometimes at 2,000 boxes per hectare class A. In excess of this maximum volume, the seller is given the option to look for other buyers.

There are allegations that the terms of the contract in the industries covered are inequitable.

One of the contentious terms in the contract is the price of the output. In the banana industry for example, the contract between Dole-Stanfilco and the agrarian reform beneficiaries (former employees/farmworkers of Dole-Stanfilco) who were supposed to own the land developed three years before expiration of the 10-year CARL deferment period for commercial farms was supposed to serve as a model for other commercial farms to emulate. However, this led to several problems as beneficiaries did not receive separation pay upon implementation of the contract and received a very low buying price at P22.50 per box which contains 13 kilograms of bananas. During that time, the buying price in Japan was $2.18/kg and the exchange rate was US$1 to P27.7. In November 1997, three farmer groups went on farm strike demanding for a higher price and requested the Department of Agrarian reform to allow them to sell bananas to other buyers because they learned that Dole-Stanfilco offered other sellers at US$2.80 per box and they were only receiving P22.50/box. Also, a banana trading company offered these groups to buy their bananas at US$2.80 per box Finally, Dole-Stanfilco offered them a buying price of US$2.10 per box to be picked up at farm or US$2.60 per box if delivered by farmers at the wharf (AFRIM 2002).

Another issue is the determination of land rent of farms under lease arrangements with multinational companies or large domestic growers. For example, some banana farmers or lessors in Mabini, Campostela Valley in Region XI under lease arrangements with Lapanday

Corporation are now on strike demanding an increase in lease rental from P6,250 per year per hectare to P45,000 per year per hectare. The issue has not been settled but Lapanday Corporation has agreed to settle at P26,000 per year per hectare.[1]

In the pineapple industry for example, there are allegations as in the case of Tiboli Agro industrial development incorporated (TADI), the terms of contract growing are inequitable. For example, crop damages caused by natural calamities are the sole responsibility of the farmers. The company also retains the right to terminate the contract when it finds the business not commercially viable (AFRIM 2000).

While credit is provided by the contractor, access to alternative credit sources is limited. For one, CARP lands are not accepted as collaterals by banks.

7.0 Concluding Comments

Contract growing provides opportunities to transfer technology, access to credit and markets, overcome land constraints, allow consolidation of outputs and inputs thereby exploiting economies and scale and help to efficiently coordinate the vertical chain through the uniform production system and quality standards stipulated in the contract. It minimizes risks by providing standard technology and management systems, specifying quality requirements, prices as well as the sharing of production costs, and specifying the incentives and disincentives to meet terms of the contract. Moreover, the uniform production system and quality standards under contract arrangements facilitate efficient coordination of activities in the vertical chain allowing consolidation of outputs and inputs thereby minimizing production and marketing costs as well as transaction costs. Contract schemes therefore enhance competitiveness of these industries and help accelerate development of Mindanao agriculture. Exports of banana and pineapple products reach over $500 million dollars per year and generate direct employment of at least 20,000 individuals.

However, while contract growing promotes efficiency, there are also issues in inequality. There are only a few buyers of bananas for the export markets and these buyers may have the tendency to set prices higher than competitive prices in the input or output markets. Agents do not have perfect information about the market and therefore may sign the contracts trusting that the principal will not extract monopoly rents. Issues that emerged indicate the exercise of market power. These include low lease rental, limited access to alternative sources of credit aside from the contractor, asset specificity that obliges the growers to deal with former owners of the land, limited market access and information asymmetry particularly on output prices and quality of inputs provided by contractors.

Clearly, it is important to examine how issues on alleged inequitable contracting arrangements can be addressed to minimize polevaulting or strikes that affect productivity and competitiveness of agricultural industries in general. Agrarian reform has caused uncertainties which have constrained investments in agriculture and reduced market valuation of land. Regardless of the mode of resolving the issues, a price setting mechanism that will lead to more acceptable terms of contractual arrangements must be encouraged. It is important that the terms are acceptable not

[1] Mampising CARP Beneficiary Cooperative Manifesto (2004).

only for farmers but also for corporate growers so they will be encouraged to invest in efficiency-related investments.

There are, however, indications that growers are beginning to improve bargaining power as cooperatives gain access to market and a number of independent growers are beginning to explore direct exporting. Also as farmers gain more access to information, they are able to bargain better with the contractors as in the case of lease arrangements with large corporate domestic growers.

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