CHAPTER I

INTRODUCTION

Export development of certain goods based upon the comparative advantage (Krugman and Obstfeld, 1994). Small domestic market is another significant factors drives to exportation. However, reliance on exports certain commodities only would result export growth problem in a long - run due to the volatility and unpredictability in the world market.

Thailand, an agricultural base economy, produces a wide range of agricultural products. Some are produced equal to market demand, some are produced less than demand. Large numbers of agricultural production together with small domestic market press the market price, due to market mechanism. Governments have coped with this problem by setting a floor price and giving the subsidies to farmers. However, this intervention is for a short – term solution and it generates some costs to the government. Therefore, exporting is another alternative to release excess supply, improve domestic price and gain profits from the world price.

1.1 Problem Statement

Mango is one of the main fruit that has been grown widely in Thailand. The major growing areas are Chacheungsao, Sukhotai, Sri-sa-kase, Chiang Mai, and etc. Total area of mango orchard has been increased gradually, from 1,147,133 rai in 1988 to 2,249,986 rai in 1997, with a growth rate of 8.23% per year (OAE, 1999).

Additionally, the growth rate of total production of mangoes was 12.37%, while the yield growth rate is 4.3 % from 1988 to 1997.

The minimum and maximum prices observed in 1988 were 2.50 and 35.69 Baht per kilogram, respectively. In recent years, an observed minimum price was 7.17 Baht per kilogram (inflation rate included). Besides domestic consumption, one percent of the Thai mangoes has been exported to many countries. Those high market potentials are Malaysia, Singapore, Australia, Germany, Netherlands, United Kingdom, and etc. By looking at the annual export performance from 1995 to 1997, the volume accounted for less than 1% of total production. It is, therefore, to take foreign market expansion under consideration.

China is known for a huge population size with unsaturated demand for food. Geographically, southern part of China – Kunming, the capital city of Yunnan Province, is located approximately 800 kms from Chiang Mai. This Province shares the main river (Mekong) in ASEAN. Thus, it is curious to observe the fruit markets in China (i.e. Kunming City) and assess the feasibility to export Thai mangoes.

1.2 Objective of The Study

The ultimate objective is to assess the potential for Thai mangoes in Kunming City. It could be the guide-line to improve the volume of mango exportation and provide some implications to the Thai mango exporters and Thai government. The specific objectives are to:

1. investigate the marketing channel of fruits in Kunming City

2. analyze consumers' preferences of the mangoes
3. analyze relationship between mango prices and mango attributes and purchasers' characteristics and prices of mango
4. analyze characteristics of consumer who have quality and health consciousness
5. evaluate export potential of the Thai mangoes to Kunming City via cost calculation and SWOT analysis

1.3 Usefulness of the Study

The contributions of this study are to

1) provide useful information to the Thai exporters to supply mangoes, which are compatible with consumer preferences.
2) provide the information to the Thai government to implement the right policy to encourage mango exportation to Kunming City.
3) be a good start to export other kinds of fruit through the same marketing channel.
4) improve consumer utilities of Kunmingnese by having more varieties of mangoes available in the markets.
5) improve the trade balance of a country, especially with China.

1.4 Scope of the Study

The scope of this feasibility study composes market survey in Kunming City. The primary data was collected from one hundred households from 10 areas of zip code within Kunming City. Time period of data collection was from May to June 1999. Apart from household survey, other stakeholders in fruit market were interviewed. Furthermore, exporting cost of mangoes from Chiang Mai to Kunming was calculated.

1.5 Literature Review.

With succession in nontraditional export in Costa Rica, it is a good example for other developing countries with agricultural base, such as Thailand. An exportation of mangoes in Ratchaburi Province reveals the situation of mango exportation in 1993. Border trade in Yunnan Province, unsaturated demand for food in China, and Chinese market and consumer behavior indicate potential to export some food to this market. Moreover, an application of Hedonic Price model and Ordered Probit model quantify an analysis more precisely.

1.5.1 Nontraditional Export and Export Led Growth

Nontraditional exports boomed in Costa Rica between 1983 and 1992 which soared export value $90 million to $781 million, while the proportion of export

earnings quadrupled from 10% to 42% over the same period[1]. In 1993, Costa Rica's leading nontraditional export products were textiles ($757 million)[2], fresh and frozen fish and shrimp ($92 million), flowers, ornamental plants, and foliage ($81 million); and fresh pineapple ($54 million)[3]. Clark (1995) had studied the sustaining export-led growth for those nontraditional products. It was found that a combination of political and economic factors, and some other outside the control of an individual country determines the survival rate of export-based development strategies. In addition to politics, financial policy, and demand and supply of nontraditional products can greatly affect value and volume of export.

In Thailand, a study of Agricultural Employment Creation and the Improvement of the Quality of Agricultural Commodities for Increasing Income and Export Earnings: Northern Region (Chiang Mai University and Chulalongkorn University Social Research Institute, 1995) results that besides the exportation of rice, tobacco, and corn, fruits such as longan, lychees, and mangoes, generated high income to farmers, particularly longan. In 1981/82 the North accounted for 93.9%, 92.4% and 30.3% of total national production area for longan, lychee and mangoes,

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[1] The data for 1983 come from Salazar *et al.* (1988) and those for 1992 from *Centro de Promotion de Exportacionese Investones* (CENPRO, 1994a). All of the data exclude the gross value of assembled exports (mostly apparel) but the 1993 figures include the valued added of such products. In Costa Rica, a nontraditional export is anything other than coffee, bananas, sugar, and cotton which is sold to "third markets" of those outside of Central America.

[2] Figure for gross value of Costa Rica's textile exports provided by the *Camara Textily de Confeccion* (CATECO, 1994:1).

[3] Information on 1993 export levels of flowers and plants, seafood, and pineapple from unpublished CENPRO data.

respectively. For longan, in 1996, the production area was 207,771-rai with 147,170 tons produced[4]. For this reason, it was urged to be exported to foreign markets such as Hong Kong, Singapore, and Malaysia. Today, Thailand has exported both fresh and dried-longan directly to China. In addition to longan, mangoes, rambutans, coconuts, guava, lychee, papaya, and tamarind have been exported also.

1.5.2 Thai Mango Exportation

Intusorn (1993) studied a *mango producing and selling by Ratchaburi mango production and export farmer's association in Ratchaburi Province*. It is found that Thai mangoes, both ripe and green ones, have been exported to Hong Kong, and Singapore. Netherlands, France, United Kingdom, Germany, are the major importing countries in European markets. For Thai mangoes, the main varieties include Namgklangwan, Thongdum, Nam Doc Mai, Pimsendang, and Keawsaweuy. Unhawth (1989) found that Japan has imported Nangklangwan variety since 1987. However, Japanese Plant Quarantine demanded a vapor heat treatment before exporting to Japanese port. Not only did Japanese government strict on this kind of treatment, but Fruit Temperature Sensor and Air Temperature Sensor should be also approved by Director-General, Agricultural Production Bureau, Ministry of Agriculture, Forestry and Fisheries; and Chief of Plant Quarantine section, Department of Sericulture and Horticulture, Ministry of Agriculture, Forestry and Fisheries.

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[4] Office of Agricultural Economics, Ministry of Agriculture and Cooperatives; Document No. 95/2540.

In the mid – 1980s, China has been an important market for the world's agricultural exporters, especially for U.S. exporters. Economic development brought about changes in both average level and distribution of income and food consumption. For this reason, an income inequality has increased since the mid – 1980s. Han and Wahl (1998) worked on *China's Rural Household Demand for Fruit and Vegetables*. This study focuses on food consumption patterns, with special emphasis on fruit and vegetables of China's rural households across different income groups and regions. The goals of this study are to provide estimate of price and expenditure elasticities for fruit and vegetables. It applied a two-stage budgeting model to estimate a complete demand system. This estimation was done at the micro level by using cross sectional data. All major economic activities for 66,960 participating rural households were recorded by the National Rural Household Surveys of the State Statistical Bureau (SSB). The result is that China's rural household decided to allocate their consumption expenditure across broad subcategories of expenditure such as food and then allocate their expenditure on food to individual food items such as fruit and vegetables. The own price elasticity for food is more elastic than for clothing, housing, durable goods, and other items. Furthermore, fruit was more price elastic than vegetables, while grapes are the most price elastic (note that this research work does not focus on mangoes). Additionally, the rapid growth in income will increase demand for fruit and vegetables, and different income group shared a common demand function.

In addition to the study by Han and Wahl, there is another study about China's household demand by Gao, Wails, and Cramer (1996). This study is quite similar with the work of Han and Wahl, but it is different in terms of scale. It focuses

only on Jiangsu province, only. They studied on A *Two-stage Rural Household Demand Analysis: microdata evidence from Jiangsu province – China*. In this paper, they evaluated economic and demographic effects on China's rural household demand for nine food items[5] and five groups[6] of nonfood commodity. The results indicate that a slow growth of food consumption in China during the latter half of the 1980s was a result of income stagnation rather than consumption saturation. Growth in demand for better food and shelter by Chinese rural household would continue to be a major concern.

In summary, a large market in China implies a high capacity to import goods, particularly food. Moreover, it was proved that growth in demand for better food would be continued on and on until it is saturated.

1.5.3 Border Trade in Yunnan Province.

An emergence of border trade in China was in early 1990s. This resulted many changes in economic and political life in Yunnan Province. The border trade in Yunnan, therefore, has been developing into a "grand border trade", namely economic cooperation within the quadrangle region of Yunnan, the northern and northeastern parts of Myanmar, and the northern parts of Laos and Thailand (Guangzhi, 1997). Particularly Burma, Chinese central governments aided Yunnan Province by establishing economic links with her (Matt, 1997).

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[5] Vegetables, pork, beef, poultry, eggs, fish, sugar, fruit and grain

[6] clothing, fuel, stimulant, housing, and durables

1.5.4 Demand for food in China

Since China has been experiencing rapid growth, resulting in increased demand for food. Estimation has been done from Chinese production and consumption of rice, wheat, corn, and soybeans to the year 2005. The results indicate that China will become a large net importer especially of wheat, corn, and soybeans. In addition, Chinese consumers have demanded diversified higher quality nutriments. It is because of a rise in disposable income caused Chinese people, especially urban consumers, to demand various higher quality food (Koo, 1996). As a result, it yields new opportunities for U.S. agricultural exports such as, wheat, refined oil, processed foods, and seasonal fruit and vegetables (Frederick, 1994).

1.5.5 Chinese Market and Consumer Behavior

For multinational companies to be successful in China, it is necessary to understand Chinese market structure and her consumers. A number of Chinese consumers can afford foreign-made appliances, food, and other goods, but regional differences in levels of economy. Further than this, to predict consumers precisely, geographic factors, demographics, and differences in attitudes, values, beliefs, or even personality need to be taken under consideration. Based on these factors, Chinese consumers can be grouped into four segments: the "nouveau riche" group, whose income exceeds $5,000 a year; China's yuppies, who earn $1,800-$5,000 a year; the "salary men", who earn $1,150-$1,799 per annum; and Chinese "working poor". The yuppies, together with the nouveau riche, can be considered as Chinese emerging middle class and are the primary consumers of foreign products (Geng,

1997). However, the animosity of foreign products purchased should be thoughtful for better understanding of consumer behavior. A study of Chinese consumer attitudes toward Japan and Japanese products results that animosity has a significant impact on buying decisions above and beyond the effect of consumers' ethnocentrism. Accordingly, the measurement of cross-national hostility enables managers to understand better the purchase behavior of consumers in the international marketplace.

Han et al. (1997) researched on 'Rural Household Food Consumption in China' with special emphasis on changes in demand for food commodities across different income groups. By applying a two – stage budgeting LES-LA/ AIDS system, it was drawn that the own – price elasticity for food was more elastic than those for clothing, housing, durable goods, and other items. Within the food group, price elasticity ranged from –0.18 to –1.24. For the average rural households, wheat and coarse grains were still important staple foods with an expenditure elasticity of almost unity. Nevertheless, meat is the most price elasticity among non-staple foods, while educational level, an employment structure, and geographical location significantly affect on food consumption.

Wu and Findlay (1997) studied for 'China's Grain Demand and Supply' in South and Southwest to Yangtze River. It was found that determinant factors of individual consumption include income (with elasticity of demand for food grain varied from –0.2 to +0.6), prices (own-price elasticity of demand ranged from –0.1 to –1.5), and dietary habits. Consumers tended to spend an increasing proportion of additional income upon luxury foodstuffs (e.g. Meat) and a decreasing proportion of

it on staple foodstuffs (e.g. Rice). [In other words, food grains, especially rice and coarse grains, tend to be 'inferior goods' in the high- income group. Indica rice has become an 'inferior good' even to rural households with higher income]. Utility maximizing consumers highly consumed less of one food item and shift to its substitutes when its price rises or the prices of its substitutes fall. Generally, consumers were strongly influenced by culture and religion or belief, though their dietary habits do change when their lifestyle changes (e.g. from rural to urban or from traditional to modern lifestyle).

In addition, population contributes a great impact to national demand for grain. Wu and Findlay (1997) investigated that China's population will grow by 1.33% a year before it slow down after 2000 and reaches 1.43 billion by 2010, 1.53 billion by 2020 and 1.60 billion by 2030. With different incident of fertility between urban and rural areas, and with labour migration from rural to urban areas, changes in the age structure will have an impact on food consumption, particularly in a long-run.

1.5.6 Application of Hedonic Price Model and Ordered Probit Model

Hedonic price modeling has been developed and applied the technique for analyzing agricultural commodities. Ladd (1982) contributes an excellent review of the economic theory behind the goods characteristics model. Ladd and Martin (1976); Ladd and Suvannunt (1976); Ethridge and Davis (1982); Hyslop (1970), Lin and Mori (1991), Menkaus and Kearl (1976); Buccola and Iizuka (1997) have

successfully extended previous theoretical models of consumer goods characteristics to agricultural products.

An analysis of consumers' valuation of food characteristics for breakfast cereals in the United States (consumers' valuation) purposes to estimate consumers implicit valuation of food characteristics in breakfast cereals. Hedonic Price models were developed by incorporating varieties of household socio-economics and socio-demographic variables. Nationwide Food Consumption Survey data set was collected from 1977-78 and 1987-88. The results yield that the overall consumers had positive values for energy, protein, calcium, iron, and Vitamin B, but negative values for fat, Vitamin C., and dietary fiber. Among these nutrients, energy was the most important in terms of its implicit value. For the no-nutrients cereal characteristics, consumers' overall had positive value for variety pack, presweetened, fruit/nut added, rice, bran, and puffed processing. These findings have important implications in the production and marketing of cereal products. Additionally, they also have important policy implications for nutrition education program (David, 1992).

Ladd and Suvannunt (1976) had worked on "A Model of Consumer Goods Characteristics" by applying a Hedonic Price model. The consumer goods characteristics model (CGCM), which leads naturally to the idea that, measures product characteristics in order to measure its quality. This recognizes that it may not be possible to rank two similar products according to their quality. It may be that product A has a higher quality than product B according to one characteristic but of lower quality to a second characteristic. In short, A and B are of different quality.

CGCM was developed to test the two hypotheses. One is that a retail price paid is a weight linear combination of product yields of characteristics, each weight being a marginal implicit price of a characteristic. Another is a consumer demand for a product is expressed as a function of income, product prices, and product's yields of characteristics. From this paper, it is found that for each product consumed, the price paid for the product equaled the sum of the marginal monetary values of the product characteristics (i.e. water, food energy, protein, fat, carbohydrate, Ash, calcium, Phosphorous, Iron, Sodium, Potassium, Vitamin A value, Thiamine, Riboflavin, Niacin, Ascorbic Acid). In addition, consumer demands were affected by characteristics of goods. If the relation of consumer purchases to product characteristics is known, a product can be designed to maximize profit by determining how much of each product characteristic to put into the product.

Another study of Hedonic Price model – Modeling Hedonic Price Equations As Stochastic Frontiers" (Palmquist and Munn, 1999). It is used to explain the price of differentiated product or factors of production. Palmquist (1989, cited by Palmquist and Munn, 1999) extended Rosen's (1974, cited by Palmquist and Munn, 1999) model, i.e. price of a consumer goods and the characteristics to differentiated factors of production. The necessity assumption is a perfect competition. This paper examines private timber sales. The price paid for a tract of timber is determined by its Hedonic characteristics, implying an empirical specification for the hedonic model of the form. In addition to the application of Hedonic Price Model to agricultural commodities, a conduct of this function was for other types of goods such as housing. Wallace (1996) created Hedonic – Based Price Indexes for

Housing. The characteristics such as square footage, bathrooms, public service amenities, and location were explanatory variables included in this model.

Besides the Hedonic Price model, an Ordered Probit model is relevant for this study also. Ordered Probit model is an extension of the Probit model applies in which there is an ordering to the categories associated with the dependent variable (Pindyck and Rubinfeld, 1998). Cooper and Osborn (1998) applied this technique to study "The Effect of Rental Rates on the Extension of Conservation Reserve Program Contracts". By doing a survey of over 8,000-conservation reserve program (CRP) contract holders, ordered response model estimated acreage re-enrollment. Gerdtahm amd Johannesson (1997) also applied this technique to study the relationship between happiness, health and socio-economic factors. This paper investigates relationship between happiness (utility) and a host of socio-economic variables with data set sized over 5,000 individuals from Swedish adult population. Happiness was measured by a three-point categorical measure of overall happiness (not happy, happy sometimes, happy most of the time), and an Ordered Probit model was assigned to estimate the happiness equation.

These two models – Hedonic Price Model and Ordered Probit Model are to be employed in this thesis work. Hedonic Price model is to ascertain the importance of each product characteristic to the price offered to the Thai mangoes. While Ordered Probit model would estimate the factors that decided the probability to prefer mangoes as fruit list in a consumer's mind.