

# **Market demand study on fresh products and derived products of banana, jackfruit, and cashew nut in Phnom Penh market**

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## **Abstract**

Tropical country like Cambodia provides a good opportunity for growing different kinds of tropical fruits such as banana, mango, longan, jackfruit, cashew, rambutan, durian...etc. GDP relies mainly on agriculture due that 80% of population belongs to this sector. Banana, jackfruit, and cashew nut, it is popular fruit for Cambodian people. Due to the lack of information in this field, we seeked to make a market study of Banana, jackfruit, and cashew nut. Our target is to do the survey of attitude consider as consumer in Phnom Penh city. Also, to survey the people in Kampong Cham and Preah Vihear province where the target fruits are significantly grown. The research study was done by three different phases. The primary phase was Desk research, the secondary phase involved qualitative research, and the third focused on quantitative research. According to the survey results, the plantation is in general as family scale for the tree type fruits. The price of raw purchased is normally fluctuating around, 0.8-1.5 USD/Kg for cashew nut, 0.25 USD/Kg for Banana, and 1 USD/Kg for Jackfruit. The status of supplying the fruits is fluctuation depending on the season. People believe that eating fruits is beneficial for the health, delicious, pleasure, beauty purpose. Normally, people spend 2-3\$ per month for fresh banana, 1-2\$ per month for fresh and process jackfruit and 0.5-1\$ per month for final product cashew nut. In conclusion, the market demand on three types of fresh products and derived product is studied. The obtained data can be useful for further study.

**Keywords-** Desk research, qualitative research, quantitative research, family scale

## **I. Introduction**

Cambodia is a developing country located in South-east Asia region. Like many other developing countries in the world, the sector of agriculture stills the main sector to push the economics of this country and about 80% of Cambodia people live in rural area where they earn their living by doing agriculture. Looking to the fruit of Banana, jackfruit, and cashew nut, it is a traditional fruit for Cambodian people. Many kinds of banana, jackfruit, and cashew nut are found in any shopping places both local markets and supermarkets. However, until now, it is impossible for the investors to find complete information about the market demand on these three types of fruits in Cambodia. So, in order to encourage and facilitate the future investment on these fruits, Institute of

Technology of Cambodia wishes to make a study about the Market Demand on the three types of fruits in Phnom Penh.

Aims and objectives of the research

The countries in ASEAN regions have the capacity to plant the different kinds of tropical fruits. These fruits have high potential for regional and international demand. This small-scale market demand would be a prototype of case study to enlarge to a bigger scale of regional level. Therefore, the overall objective is: the Study the Market Demand on banana, jackfruit, and cashew nut in Phnom Penh City of Cambodia". This objective is further divided in to the following sub-objectives:

- To identify the evolution of supply of the three types of fresh and processed products of these fruits in the big capital city of Cambodia
- To identify the evolution of demand of these products
- To determine the evolution of the sale's price of each type of fruits

## II. Methods

In order the study the Market Demand of Banana, jackfruit, and cashew nut, we seeked to make a market study. Our target is the population in Phnom Penh city where the demand of banana, jackfruit, and cashew nut are importantly high. However, we will also go to some regions in Kampong Cham province where the fruits are significantly planted like Chamkar Leu district, Memot district, etc.

The proposed research was done three stages. The first stage (Desk research) was to inspect existing sources to uncover usage figures and any useful information. The second stage involved qualitative research to provide in depth information of banana, jackfruit, and cashew nut demand and behavior/attitude of consumers/producers toward these three types of fruit while the third stage of quantitative research served to quantify the evolution of Banana, jackfruit, and cashew nut production/price/consumption.

Population and sampling

Four groups of population were chosen for the study. They are given in the table below.

**Table 1:** Sampling design of the survey

	<b>Name</b>	<b>Area</b>	<b>Sample</b>
Group 1	Farmer (agriculture)	K. Cham and Preah Vihear	30
Group 2	Transformer (industry)	Phnom Penh	2
Group 3	Distributor (service)	Phnom Penh	30
Group 4	Consumer/Buyer	Phnom Penh	100

The farmer is set as first group. The group refers to person who grows the three types of fruits. It is the originating sources of the fruits. The first group was asked for area and location of plantation, expenditure for plantation, duration to harvest and harvesting quantity, ultimate use of the fruits, earning per year for farmer, and price and quantity sale to broker.

The transformer was set as second group. The transformer means the factory of industry responsible for making fresh fruits to semi product or final products. The second group was asked for the capacity of the factory, source of raw materials, quantity of raw materials, price of fresh fruits purchased per kilo, and type of processed fruits made by the factory.

The third group was targeting to distributors. This refers to broker. It is the party who is responsible for buying fresh fruits from farmer and sells them to the consumer or factory. This group was asked about the type of fruits in their business, original cost of the fresh fruits cost of fresh, fruits to be sold to next party, quantity of sale per day, and the status of supplying for these three types of fresh fruits.

The last group that was interviewed was the last consumer or buyer. Consumer refers to the last person or sector that use the fresh fruits or process fruits of banana, jackfruits, and cashew nut. The group was asked their expense per month for fruits, their favorite fruits, location to buy the fruit, time to eat the fruits, type of fruits for eating, number of time to eat the fruits, and the reason to eat the fruits.

### III. Results

According to the survey results, it showed that 3-5 ha for Cashew Nut, 2-5 ha for Banana, Family scale for Jackfruits. The plantation is in general as family scale for the tree type fruits.

Table below summary the result in average of first group survey.

**Table 2:** Status of producer projecting on the three types of fruits

Type of fruits	Expense for plantation (ha)	Duration to harvest (Year)	Quantity (Tone/ha)	Earning (Year/ha)
Cashew nut	500-750\$	2-3	2-3	2500-3500\$
Banana	350-500\$	1-2	18-20	2500-3000\$
Jackfruit	800-1000\$	3-4	20-30	8000-10000\$

Two companies were willing to answer our question. The result showed that the two companies are classified as medium enterprise. However, these two companies can be sorted as the biggest one in Cambodia. The price of raw purchased is normally fluctuating around, 0.8-1.5 USD/Kg in average for cashew nut, 0.25 USD/Kg for Banana, and 1 USD/Kg for Jackfruit. And, the table 3 show the quantity of raw material purchased per day and type of the products. For cashew nut, the products are exported freshly and sometimes exported as semi products as the Khmer agriculture production Co.LTD is doing.

**Table 3:** Small and Medium Enterprise toward the three types of fruits

<b>Name of Company</b>	<b>Type of fruit</b>	<b>Quantity of raw material/day</b>	<b>Type of products</b>
Confirel Co. Ltd	Banana	500 kg	Chocolate sugar, dried banana, dried jackfruit
	Jackfruit	500 kg	
Khmer agriculture production Co. Ltd	Cashew	200-250 kg	Semi product

The result from the survey for the third group was about the distributor the results are shown in table 4. All fruits except cashew nut are sold freshly. They are mainly originated from neighboring countries for jackfruits and Banana from Kampong Cham province. The status of supplying the fruits is fluctuation depending on the season. For example, Banana has huge quantity during rainy season. For the cashew nut there is not sale in market for its fresh or processed products. The processed cashew nut is normally imported from the neighboring countries.

**Table 4:** Distribution status of the fruits in Phnom Penh city

<b>Type of fruit</b>	<b>Quantity of sale (Tone/day)</b>	<b>Original cost of fruit (\$/Tone)</b>	<b>Cost of fruits sale (\$/Tone)</b>
Banana	8-10	200	300
Jackfruit	3-4	500	1000
Cashew Nut	No	No	No

The last survey was on the consumer or buyer. Most of the result is not show is this table 5 since some parameters are very different from each other. For example, different individual prefers different type of fruits. And, in general people buy fruits twice per week from the market. People believe that eating fruits is good for health, delicious, boring, beauty purpose. Other results are shown in this table below:

**Table 5:** Consumer behavior toward the consumption of the fruits

Type of fruit	Type of fruit for eating	Time to eat the fruits	Expense (1 person/Month)
Banana	Fresh	11 am-2 pm Or 6 pm-9 pm	2-3\$
Jackfruit	Fresh and processed fruits	11 am-2 pm Or 6 pm-9 pm	1-2\$
Cashew nut	Final product	11 am-2 pm Or 6 pm-9 pm	0.5-1\$

#### **IV. Discussion**

Comparing large area left in Cambodia, there still have capacity for the country to grow more of the fruits to supply locally and internally. Banana is enough for local market. However, it is possible to export the products to other countries. And, it is better if the raw materials are to be transformed to semi products or final product. Jackfruits plantation is not enough for local market. Thus, expanding the growth of this fruits is a need for Cambodia because this fruits are normally imported for the neighboring countries. For Cashew nut, the plantation is growing. However, the locally processed factory should be established because final products are normally imported for local market.

It is found fluctuation of the supply of the fruits from season to another. Price is cheap during harvesting period and expensive during fewer yields of the fruits. Cashew nut has not local distributor due that the fresh cashew nut is exported to others countries and, consumer purchase the final products imported. For jackfruits and Banana, people prefer the fresh products than the processed one. There are few local companies to process these fruits for local market. Most of process fruits are imported.

In conclusion, the evolution of supply and demand for three fruits are identified. The price for raw purchase fluctuates around 0.8-1.5 USD/Kg in average for cashew nut, 0.25 USD/Kg for Banana, and 1 USD/Kg for Jackfruit.

#### **Follow-up**

The finding shows very good information as based ling data prior to national scale studying on the supply and demand of the fruits. Thus, it is better if a national level of studying is to be expended. However, the outputs of research tell us also about the future work to be such:

- Nutritional facts of each fruits to be studied to match international market
- Improve post-harvest technology
- Implementing the family scale or small scale food processing

## References

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