



**SEOUL  
SOUTH KOREA**

**Conference Proceedings**

**December 5-7, 2017**

**TISSS**

**The International Symposium on Business and Social Sciences**

**ACSSC**

**Annual Conference on Social Studies, Communication and Education**

## The Cost Analysis of Cost Accounting System for Investment Decisions to Financial Benefit of Dried Mango Products in Thailand Community

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### Abstract

This paper presents a cost analysis of cost accounting system for investment decisions to financial benefit. The case study: the dried mango products in Chachoengsao province of the community area, in Thailand. For the purpose of cost analysis and accurate cost accounting system. To study the cost accounting and financial benefit from the dried mango production of the housewife group. This was passed through the standard of community products in Chachoengsao province in the year 2016-2017, by collecting the questionnaires from the housewives group in the communities area for producing of dried mango in one Tambon of the Chachoengsao province. The sample group was the prototype community housewives product group. The cost accounting system of the community products will be consistent with the needs of the sample. Analysis of financial benefit to measure the benefit on a total of four criteria, which include is the discounted payback period: (DBP), the net present value: (NPV), the benefit cost ratio: (B/C ratio) and the internal rate of return: (IRR). Therefore, it can help to make investment decision of the housewife group in the community area. Research results show that production costs. It will consist of fixed costs is 393.55 USD/year. The variable cost was 867.70 USD/year, and the total cost was 4,580.87 USD/year. The sales of dried mango averaged 6,266.58 USD/year/kg. The good quality of the housewife group 1 will have a net present value: NPV is 960.69 USD/year, the internal rate of return: IRR is 18.11 %, the ratio of benefits to costs: B/C is 1.16, and the discounted payback period: DBP is 4 years with 3 months. The net cash inflows are 246.74 USD/year. The criteria results for the investment decision of the total housewives group for this dried mango products project are possible of the next investment.

Keywords: Cost accounting, benefit, community products, dried mango, investment

### 1. Introduction

The ASEAN Economic Community is an important economic business goal to drive ASEAN group international cooperation. Later, the signing of the ASEAN free trade area was well underway in various countries. The ASEAN group is aiming to establish an economic

community in 2015. As a result, the size of the larger ASEAN marketing, and the ASEAN countries have increased their purchasing power. As well as being able to compete with other regions is increasing. This enables ASEAN members to adapt to the changing world of globalization. If the ASEAN countries can successfully build the ASEAN Economic Community Thailand will benefit from the expansion of its exports and trade opportunities and trade opportunities with ASEAN countries. Regional services in Thailand will be strengthened and Thailand is the center of tourism.

In Thailand, there may be conferences to showcase the products of dried mango products in the community from the manufacturer. From this business opportunity, the manufacturer of the One Tambon One Product (OTOP) project must accelerate the development of good quality products and international standards. Include product cost analysis and appropriate cost accounting system in accordance with accounting principles. OTOP project is one of the government's urgent policies. The goal is to focus each in community on local wisdom to development products. To promote and support the local development process, can create a strong community area, self-reliant and public participation in job creation. This is bringing local wisdom resources into quality products and services by preserving the local wisdom.

Therefore, to support and strengthen marketing business opportunities for the community, the mango products cost analysis and appropriate accounting system. The researcher studied, cost analysis and cost accounting system of mango products in the community. Study the potential of community product manufacturers on cost analysis and cost accounting. To analyze the cost of community products and to develop a cost accounting system for community mango products, to guide the use of existing dried mango products by accurately calculating costs and selling prices.

The researcher selected mango fruit in the community area of the Bang Khla amphoe, Chachoengsao province, in Thailand. To want mango products to be processed in community area of dried mango products. Chachoengsao province is a good source of mango and it can build a great reputation both nationally and internationally. The highest mango area in the eastern part of Thailand is about 17,801 rai, accounting for 35% of the mango growing area in the east. It will produce more than 7,617 tons. For sale in the domestic market and can be exported both in raw form, cooked and processed mangoes to increase the value of domestic income to hundreds of millions USD per year. The purpose of this research was to study the financial return analysis of mango processing, ie dried mango products for export of Chachoengsao province. To analyze cost and cost accounting system of dried mango products. Study the potential of the housewives community group in dried mango products on cost analysis and cost accounting system.

## **2. Research Objectives**

- 2.1 To analyze the financial returns benefit of dried mango products for export sales.
- 2.2 To study and analyze cost and cost accounting of dried mango products of the OTOP project.
- 2.3 To study the potential of housewives group in the community area of mango processing by cost analysis and cost accounting.
- 2.4 To analyze the cost of the dried mangoes products and community product cost accounting for investment decisions to financial benefit.
- 2.5 To guide the development of dried mango products with accurately calculating costs and selling prices within Thailand.

## **3. Scope of Research**

Study and research of the housewives group or the manufacturer of the One Tambon One Product (OTOP) of this project in the community area of dried mango products, is Bang Khla amphoe, Chachoengsao province, in Thailand. For Bang Khla amphoe can be divided into 9 Tambon, 56 villages. The criteria for selection of producer groups of dried mango products as follows: 1) Must be local wisdom products, 2) Must be patient and work minded, 3) Have a marketing understanding, 4) Continuity of dried mango products, 5) Opportunity to create marketing output, 6) Creativity in product development all the time. Since the start of the research project of product processing, as well as the distribution that the cost and return on investment, during the period from August 2016 to October 2017.

## **4. Research Principles**

Production of processed fruit is limited in marketing, and the selling time almost all agricultural products are easily lost so they can not sell fresh produce. Therefore, mango is one of the fruit. Although Thailand has developed mango varieties for sale in the market by export sales in the form of fresh fruit to a moderately high level. But the development of privatization is still not important. Even mango growers have no interest in native mango varieties. For the export sales of mangoes, they are featured that can not be replaced. Mango processing should be mango meat. There is a lot of meat and sugar, when the mango is cooked, it will have a beautiful color and low acidity. Mango used in processing are 2 groups as the following

Group 1 is a fleshy type of mango. This mango is suitable for processing into pickled mangoes. Mangoes in canned syrup such as mango

Group 2 is juicy mango and juicy type when cooked in a beautiful color and aroma. The mangoes are suitable for processing as mango juice. The chemical properties of mangoes used in processing are total soluble solids, acidity and pH.

Harvesting time for processed mangoes, which must be kept unfinished but not yet ripe, for mango fruit products can be processed include: mango chives, mango jam, dried mango, mango stir, mango pickled salt, mango jelly, mango sauce, ripe and raw mango juice and ice cream mango, etc.

Dried mangoes are one of the methods used to preserve food. It can keep mangoes for a long time using the principle of reducing the moisture level of mangoes to the level of microorganisms less. Mangoes that are dried will rely on heat energy to evaporate water into steam. The advantage of dried mangos is that it does not affect the nutrients that provide energy to the body and minerals present in the fruit. It has long been preserved, reduce transportation costs by approximately 90 %, and mango processing and processing process is easy and cost effective.

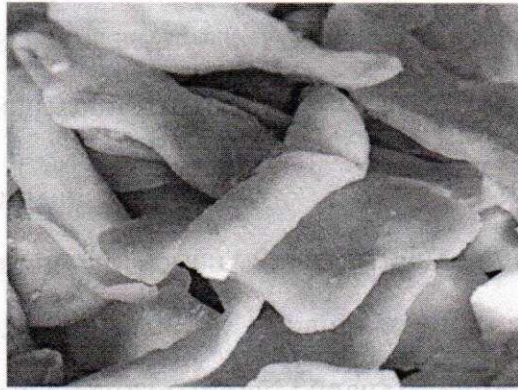


Fig 1: Processed products of dried mangoes OTOP products of the housewives group in community areas of the Thailand

## 5. Operating Research Methodology

### 5.1 Population and Sample Group

5.1.1 The population to study: the housewife group where the products. To learn and understand the process of mango drying through the standard of the community products of Chachoengsao province in Thailand. This research is applied research using interview form as a data collection tool. The population used in this study was the chairman, vice president, treasurer and housewife group of the Bang Khla amphoe, in Chachoengsao province. There are a total of 542 people.

5.1.2 Sample group: samples are community area product manufacturers. with sampling from the population of the housewives group are interested in processing dried mangoes products are including 4 amphoe in Chachoengsao province area. Therefore, select the Bang Khla amphoe that have passed the standard of community products of the province and have the age of the standard of community products no later than on December 31, 2017. For Bang Khla amphoe can be divided into 9 Tambon, 56 villages, and this research project is choose one Tambon only

of 3 housewives groups for investment amount of the dried mango products.

### 5.2 Research Tools

The research instrument was a questionnaire consisting of 4 parts, as the follow:

Part 1. General information of interviewees.

Part 2: Information on investment cost of dried mango production and process mango products.

Part 3 Information on revenue from dry mango products.

Part 4: Problems and obstacles to work, benefits to the project and more suggestions.

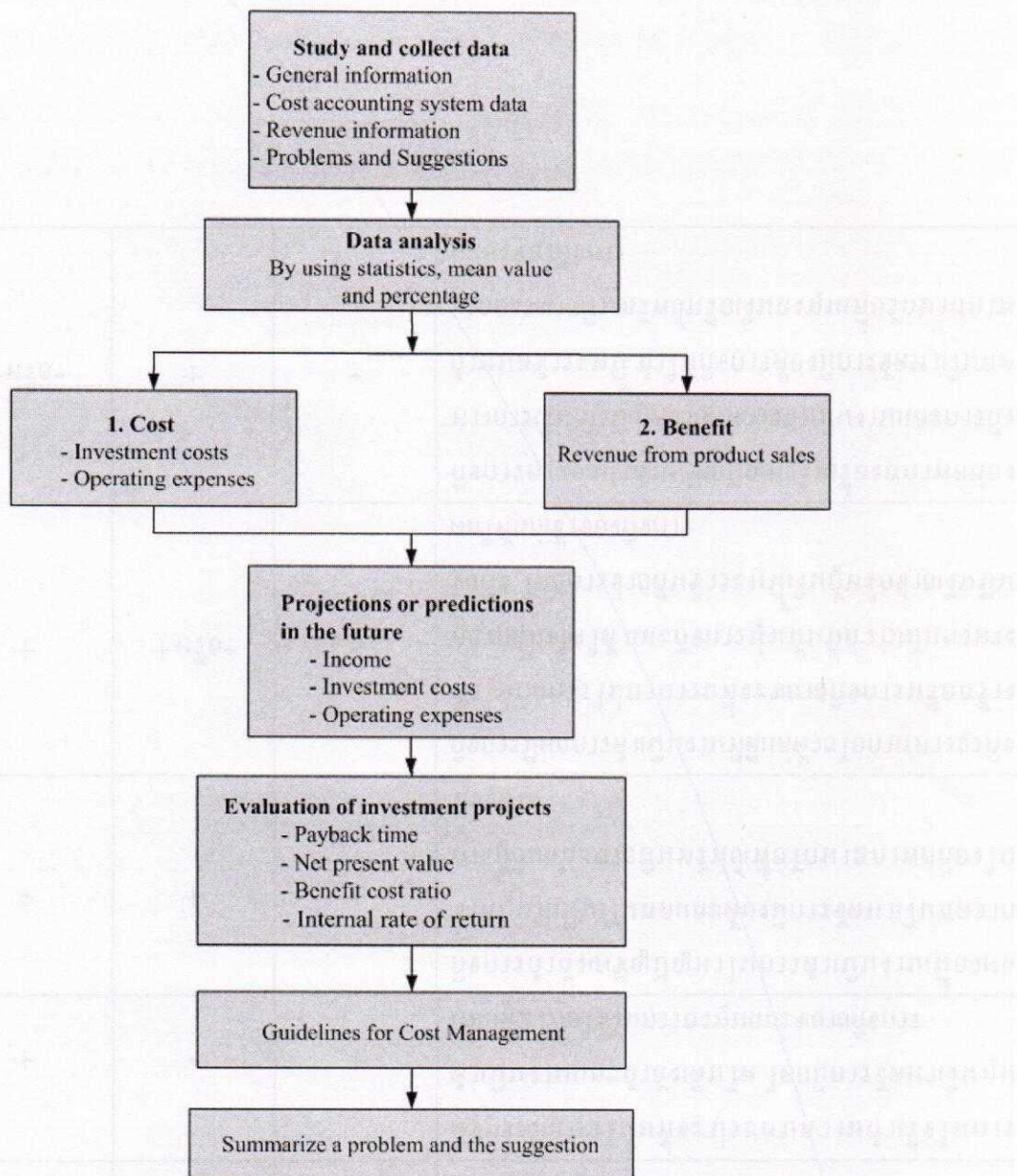


Fig. 2: The conceptual framework of the research process in processing dried mangoes products

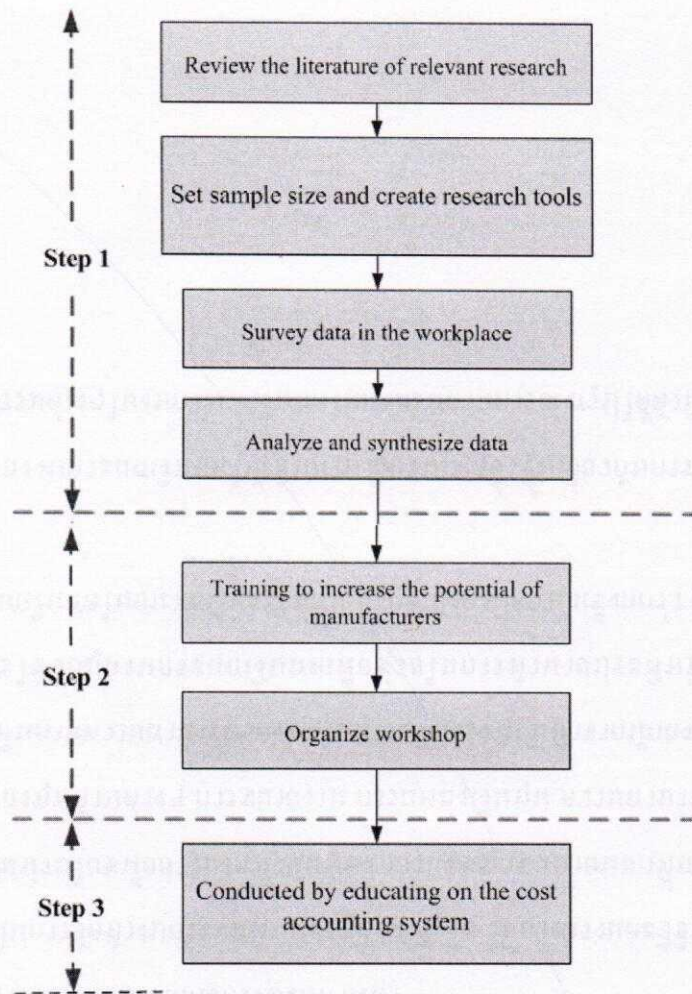


Fig. 3: Research process methodology of the cost accounting system in processing dried mangoes Products of project

### 5.3 Data Collection

The researcher is a self-collected person, to cover this project purpose of the study. By collecting information data in the manner of storage and group discussion. Interview the president and vice president of this project.

Data collection is an open-ended question to gather information, summary of interview data and analysis of the project will consist of 4 sections as follows:

- Part 1: General information of the housewife group was dried mango products in the community.
- Part 2: Analysis of cost and cost accounting system of current products in the community.
- Part 3 Potential of the housewife group was dried mango products in the community on cost analysis and product cost accounting in community.
- Part 4: Comments and suggestions of this project.

### 5.4 Data Analysis

This research is a descriptive method that uses tables to describe the general condition of a project's operation, such as production volume, the amount of investment, revenue, expenditure and factors used in production with using interview data and from observation during the survey to accompany the document and research paper. The study was originally conducted to assist in the analysis. Statistics used in the data analysis are descriptive statistics and to calculate the mean value and percentage value. Finding the cost of dried mango products in the community area, and the benefit return of dried mango products. To be used as a guide to cost reduce of mango production. Using the analysis tools are as follows:

#### **5.4.1 Quantitative Analysis**

Quantitative analysis is an analysis to achieve the objectives. The information obtained from the farmers' questionnaire was analyzed, to study the costs and returns for investment decisions to financial benefit of dried mango products according to economic theory.

#### **5.4.2 Descriptive Analysis**

Descriptive analysis was an analytical method for achieving the objectives, using data from the farmers' questionnaires to study the internal and external factors that affected the cost of dried mango products. Including problems and solutions in production.

### **5.5 The Cost Analysis for Investment Suitability**

#### **5.5.1 Total Cost Analysis**

Total Cost (TC): the total cost incurred by using various inputs, to produce a number of products and services. It consists of total fixed costs and variable costs, which can be calculated from the equation as follows:

$$TC = TFC + TVC \quad (1)$$

when

TFC is the total fixed cost that does not change according to the volume of production, or is the cost paid for fixed inputs of all kinds of business operations over a period of time at one production rate level, such as interest, land rent, depreciation, etc.

TVC is the total variable cost that varies with the volume of production, or is the cost paid for using different variable factors. This will vary with the volume of production, such as raw materials, electricity, fuel costs, labor, working hours, food and transportation costs, etc.

#### **5.5.2 Benefit of Production**

Benefit of production: is the return on the production of agricultural crops, ie, total revenue (TR) is the amount of money that the farmer produces from the plantation. It is equal to the product price (P) multiplied by the output quantity (Q), as follows:



$$TR = P \times Q \quad (2)$$

Average revenue (AR) is the average receipt of all goods that can be exported. This is obtained from all receipts (TR) divided by the total output (Q), as follows:

$$AR = \frac{TR}{Q} \quad (3)$$

Net profit (NP) is the portion of revenue that is greater than the cost. If the cost is greater than the revenue above that, then this is called net loss, can be found as follows:

$$\text{Net Profit (NP)} = \text{Revenue} - \text{Total Cost (TC)} \quad (4)$$

and

$$\text{Business Profit (BP)} = \text{Total Revenue (TR)} - \text{Accounting Cost (AC)} \quad (5)$$

$$\text{Economic Profit (EP)} = \text{Total Revenue (TR)} - \text{Economic Costs (EC)} \quad (6)$$

Return on Cost (RC) is the total revenue divided by the cost of production.

If the return to cost ratio is greater than or at least 1, it is worthwhile investing, but if the return to cost ratio is less than 1, it means that the return on the project is less than the cost of the investment, as follows:

$$\text{Return on Cost (RC)} = \text{Total Revenue (TR)} / \text{Production Cost (PC)} \quad (7)$$

### 5.3 Calculate the Payback Period

The payback period is to measure the return on investment in the marketing business operations with enterprises in a few years it will be paid back. If the payback period is less to projects that fit the investment can be obtained as follows:

$$\text{Payback time} = \frac{\text{Initial investment}}{\text{The average annual net return}} \quad (8)$$

### 5.5.4 Calculate the Net Present Value

The net present value (NPV) is the difference value between of the revenue and expenditure value throughout of dried mango products for project. The NPV is indicative of net benefit return will be for the duration of the all project, will based on the present value of revenues (PVB), and net present value of costs (PVC) of this project for the following:

$$NPV = \sum_{t=0}^n \frac{B_t - C_t}{(1+r)^t} \quad (9)$$

where NPV is the net present value of the project,  $B_t$  is the return value of the year,  $C_t$  is the cost or the investment of the project in the year,  $t$  is an annual project of the year at 0, 1, 2, ... n,  $(1+r)^t$  is discount factor of the project in the year:  $t$ . and  $n$  is the life of the project (years).

If the value NPV is greater than 0 means the benefits over the life of the project is more than the cost of the project. This project is going to be invested decisions to financial benefit.

#### 5.5.5 Return on Total Costs (Benefit Cost Ratio)

For calculate the return on total cost (B/C) are comparison between the current value of the return on the value of current investments and the finance cost. In this project, if the B/C ratio greater than 1 means of the return worth the investment cost, as the following:

$$B/C = \frac{\sum_{t=0}^n B_t(1+r)^{-t}}{\sum_{t=0}^n C_t(1+r)^{-t}} \quad (10)$$

#### 5.5.6 The Yield of the Project (Internal Rate Return: IRR)

The yield of the project refers with the rate of returns on investment, which is the rate that makes the present value of the net revenues of the initial investment amount this of the project. Return on investment is the difference between the total money values of receipts (B) to the present value of cash expenditure (C) the rate of interest (k) values as follows:

$$\sum_{t=1}^n \frac{R_t}{(1+k)^t} = 1 \quad (11)$$

### 6. Research Results

Analysis of community product costs and preparation of the appropriate community product cost accounting system for dried mango products, for based on data collection, research, data collection and analysis. It was found that the potential of the current housewife group before and after the cost accounting system, which can be explain as follows:

1. Basic information of housewives producing crispy mango and dried mango in the community area of the Bang Khla amphoe, in Chachoengsao province, Thailand. It is a housewives groups have formed a groups with only one investment. There will be labor outsourcing among the majority of workers coming from the local area, promoting local workers to get work and finance. Most of this group is experienced in fried mango by learning. Study from neighbors and rely on local wisdom. The cost analysis and benefit on investment of dried mango product in Chachoengsao province, by using cost and benefit return calculations of crisps and dried mangoes in a production cycle with 3 production periods in each period, it takes 3-4 months, with starting from on August 2016 to on October 2017, which consists of fixed costs, variable costs and sales of dried mangoes product.

2. Fixed costs is 1 kg of dried mangoes as shown in Table 1. The study found that the fixed cost of mango production of 1 kg will consist of the opportunity cost of equipment is 98.90

USD/year, the rent expenses of the house is 67.65 USD/year. The costs lose opportunities for labor are 186.65 USD/year and the depreciation of equipment such as knife cutters, gas stove, mango bucket, oven and tray, etc. is amount to 158.24 USD/year. Total fixed cost is 393.55 USD/year. Variable cost of producing at 1 kg of mangoes cooled product is 867.70 USD/year as shown in Table 1 that, the total cost of this project is 4,580.87 USD/year. Therefore, the research results for year 2016 as in Table 2 shows that was an average selling income of dried mango products is 6,266.58 USD/year/kg or income per year is 100 % of housewife group1. There will be a return benefits to produce 1 kg of dried mango with a net income is 6,266.58 USD/year.

The research results of the cost analysis can be seen as the difference between total cost accounting and variable cost accounting. The cost accounting method is used to calculate fixed costs. This is part of the cost of processed mangoes. But variable cost accounting does not bring fixed production costs into account and is part of the expenses cost of mangoes. For dried mango products, the cost of production consists of investment costs and operating costs. Thus, estimation of operating costs is operating expenses include: direct raw material, direct labor and the other cost of production. There will be a tendency of cost of production of dried mango products as shown in Table 1.

Table 1: Results of total cost of dried mango products (USD/year)

List	Cost of dried mango products (USD/year)		
	Monetary cost	Non-monetary cost	Total cost
<b>1. Fixed cost</b>			
1.1 Water cost	136.41		136.41
1.2 Depreciation of equipment		158.24	158.24
1.3 Opportunity cost of equipment		98.90	98.90
<b>2. Variable cost</b>			
2.1 Mango cooked	867.70		867.70
2.2 Fuel cost	284.99		284.99
2.3 Vegetable oil	202.68		202.68
2.4 Labor cost of housewife per group	1,795.02		1,795.02
2.5 The electrical cost of the oven	624.84		624.84
2.6 Packaging costs	225.44		225.44
2.7 Costs lose opportunities for labor		186.65	186.65
<b>Total</b>	<b>4,137.08</b>	<b>443.79</b>	<b>4,580.87</b>

Note: 1 group = 15 x 22 days (1 month) x 12 month

Table 2: Results of income from dried mango products of housewives group1 from year 2016

List	Price per pack (USD)	Average volume (pack / year)	Income (USD/year)	Percent (income per year)
Packing large products	7.52	250	1,880	30.01
Packing medium products	5.41	490	2,650.9	42.30
Packing small products	2.26	768	1,735.68	27.69
<b>Total</b>	<b>15.19</b>	<b>1,508</b>	<b>6,266.58</b>	<b>100</b>

Table 3: Results of calculate initial investment and net cash inflows for housewives group 1

List	Today	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016
Initial investment	6,010.16					
Income		5,903.42	6,125.78	5,712.36	6,189.59	6,266.58
Cost		4,096.25	4,122.94	3,967.12	4,128.67	4,137.08
Net cash inflows		<u>1,807.17</u>	<u>2,002.84</u>	<u>1,745.24</u>	<u>2,060.92</u>	<u>2,129.50</u>

Note: Unit price is USD/year

From the research results as shown in Table 3, shows income estimation of dried mango products, this means the amount of money earned for selling dried mango products of the housewives in the community area each year. Over the life of the 5-year project, from the data from year 2012 to 2016, which sales of dried mango products are expected to increase by 2%. The benefit cost ratio (B/C) of the housewives group was calculated as group 1, which the calculation principle is similar to NPV as shown in Table 4.

NPV value will bring the current value of cash inflows minus the investment value is calculated as follows:

$$NPV = 6,970.85 - 6,010.16 = 960.69 \text{ USD}$$

But B/C value is divided into the following values:

$$B/C = 6,970.85 \div 6,010.16 = 1.16$$

Thus, the result of B/C value will be greater than 1, which means that the project has more return on investment than the money invested.

Table 4: Results of net present value analysis of capital investment cash flows for group 1

List	Today	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016
Net cash flows	6,010.16	1,807.17	2,002.84	1,745.24	2,060.92	2,129.50
Present value factors at 12 %	× 1.000	× 0.893	× 0.797	× 0.712	× 0.636	× 0.567
Present value at 12 %	6,010.16	1,613.80	1,596.26	1,242.61	1,310.75	1,207.43
Sum of PVs years 2012 to 2016	<u>6,970.85</u>					
Net Present Value (NPV)	<u>960.69</u>					

Note: Unit price is USD/year

From the results of calculate as shown in Table 4, the NPV is positive at 960.69 USD. The 5-year performance of the housewives group 1 was higher value than the required minimum return at 12 %. Because it has a positive NPV is 960.69 USD. Estimation of Net Cash Flow It means the return on investment in mango production as dried mango. It shows that the sales of dried mango products are deducted by the investment costs and operating expenses. It is equal to the net cash flow from the dried mango product investment.

Table 5: Results of internal rate return: IRR of the dried mangoes products project for group 1

	Net cash inflows	Present value at 18 %	Present value at 20 %
Year 2012	1,807.17	1,530.67	1,505.37
Year 2013	2,002.84	1,438.04	1,389.97
Year 2014	1,745.24	1,062.85	1,010.49
Year 2015	2,060.92	1,063.43	993.36
Year 2016	2,129.50	930.59	856.06
<b>Total</b>		<b>6,025.58</b>	<b>5,755.25</b>

Note: Unit price is USD/year

The results of calculating from as shown in Table 5, the present value at 18 % and 20 %, the sum is not equal to the investment budget of 6,010.16, so it must be compared as follows:

$$6,025.58 - 5,755.25 = 270.33 \text{ is difference} = 2 \%$$

$$6,010.16 - 5,755.25 = 254.91 \text{ will be different} = \frac{254.91 \times 2}{270.33} = 1.89 \%$$

So, the IRR is equal (20 % - 1.89 %) = 18.11 %

When the results of the IRR return will be 18.11 %, which is more than the required return of 12 %. Therefore, this project is expected to generate satisfactory returns. Therefore, we should invest in this dried mango product project.

The discounted payback period: (DBP) of the housewives group 1 was calculated. By implementing the net cash inflows calculated as the current value. To add up in a continuous way to the budget of the money invested in this project, show values as follows:

Table 6: Results of the net cash inflows and accumulated net cash inflows of the dried mangoes products project for housewives group 1

	Net cash inflows (USD/year)	Accumulated Net cash inflows (USD/year)
Year 2012	1,613.80	1,613.80
Year 2013	1,596.26	3,210.06
Year 2014	1,242.61	4,452.67
Year 2015	1,310.75	5,763.42
from Year 2016	246.74	6,010.16

The results of calculating from as shown in Table 6, the Net cash inflows are missing, with a total of 246.74 USD/year from year 2016 and accumulated net cash inflows is 6,010.16 USD/year, which is less than a year. Therefore, it must be compared to the value to 246.74 USD/year, which it is equal to a few months, as shown follows:

$$\begin{aligned}
 \text{when } 1,207.43 \text{ USD} &= 12 \text{ months} \\
 246.74 \text{ USD} &= \frac{246.74 \times 12}{1,207.43} \\
 &= 3 \text{ months}
 \end{aligned}$$

Therefore, this project uses a payback period of 4 years with 3 months.

Table 7: Result of financial return for an investment in the choice from housewives group size of dried mango products in year 2012-2016 of project in Chachoengsao province community

Return value of an Investment	Housewives group 1	Housewives group 2	Housewives group 3
Net present value: NPV (USD)	960.69	984.25	943.16
Internal rate of return: IRR (%)	18.11	17.64	18.25
Ratio of benefits to costs: B/C	1.16	1.28	1.12
Discounted payback period: DBP (year)	4.3	3.9	3.6

For the result from in Table 7 shows a net present value of dried mango products of year 2012-2016 in Chachoengsao province community from total housewives group are 3 groups. The results of the research found that of housewives group 1 will have a net present value: NPV is 960.69 USD/year, the internal rate of return: IRR is 18.11 %, the ratio of benefits to costs: B/C is 1.16, and the discounted payback period: DBP is 4 years with 3 months. When comparing with the housewives group 3 is the result found will have NPV is 943.16 USD/year, IRR is 18.25 %, B/C is 1.12 and DBP is 3 years with 6 months. Because there will be differences value in the diligence of the housewives groups. Therefore, the criteria results for the investment decision of the total housewives group are 3 groups for this project are possible of the next investment.

## 7. Conclusions

Budgeting in this project, make changes to the product does not affect the operation of the total cost accounting method. This is the same as the variable cost accounting method. However, the reliability of the fixed production cost estimates. And the theoretical capacity or operating capacity remains the weakest point in the budget from profit or loss statements. The payback period of this project is calculated by the payback period. Net cash flow from the first year onwards is the sum of net cash flows, equal to cash flow or the amount invested in year 0, using the results from the collection and analysis. Producers should be provided with cheap raw materials, educate their members to operate efficiently, maintain, record production so that costs and revenues are known. From production, the data can be used to manage cost effectively.

## References

- Nongluck Wiratchai. 1999. Model LISREL : Analytical statistics for research. Bangkok : Chulalongkorn University Press.
- Thailand Social Business Initiative. 2009. Business compass for society. Bangkok : Icon printing. www.dbd.go.th
- Aday, L. A., and Andersen R. 1975. Development of Induce of Access of Medical Care. Michigan Ann Arbor : Health Administration Press.
- Andreassen, T. W., and Lindestad, B. 1998. "Customer loyalty and complex services : The impact of corporate image, customer satisfaction and loyalty for customers with varying degrees of expertise." *International Journal of Service Industry Management*. 9, 1 : 7-23.
- Brown, T. J., and Barry, T.E., Dacin, P. A., Gunst, R.F.T.J.2005. "Spreading the word : Investing antecedents of consumers' positive word-of-mouth intentions and behaviors in a retailing context." *Journal of the Academy of Marketing Science*. 33, 2 : 123-138.
- Chao, Y., and Lee, G. Y., Ho, Y. C. 2009. "Customer loyalty in virtual environments : An empirical study in e-bank." *Journal of Computational Methods in Science and Engineering*. 48, 2 : 497-500.
- Chaudhuri, A., and Holbrook, M. B. 2001. "The chain of effects from brand trust and brand affect performance: The role of brand loyalty." *Journal of Marketing*. 65, April : 81-93.
- Chiou, J. S., and Droge, C. 2006. "Service quality, trust, specific asset investment, and expertise : Direct and indirect effects in a satisfaction-loyalty framework." *Journal of the Academy of Marketing Science*. 34, 4 : 613-627.
- Dick, A., and Basu, K. 1994. "Customer in Business loyalty: Toward an integrated conceptual framework." *Journal of the Academy of Marketing Science*. 37, 2 : 170-180.
- Gronroos, C. 2001. "The Perceived Service for Cost Quality Concept Mistake." *Measuring Business Excellence*. 5, 1 : 46-47.
- Gulid, N. 2007. Customer Business Loyalty in the Luxury Hotel Industry : A cross Cultural Perspective. Ph.D. Dissertation, Thammasat University.
- Hair, J. F., and Black, W. C., Babin, B. J., Anderson, R. E. 2010. *Multivariate Data Analysis*. 7<sup>th</sup>

eds. Upper Saddle River, NJ : Pearson Education International.

Islam, M. S.2008. "The analysis of customer loyalty in Bangladeshi mobile phone operator industry." Independent Business Review. 1, January : 1-15.

Joreskog, K.G., and Sorbom, D. 1996. Lisrel 8 User's Reference Guide. Chicago : Scientific Software International

Klemperer, P.D. 1995. "Competition when consumers have switching costs." Review of Economic Studies. 62, 1 : 515-539.

