Cost and Return of Investment in New Theory Farming Practices in[1] Amphoe Mueang Nakhon Si Thammarat. (P0011)

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Abstract

The objective of this research was to analyze the cost and return of investment in New Theory Farming by considering the financial value of the investment. Which are Net Present Value (NPV), Internal Rate of Return (IRR), and the Payback Period (PB) of the investment. This is a qualitative research by analyzing documents and interviewing 40 key informants, who were the representatives of each district in the research area. The research instrument was interview, and the quality of the instrument is checked according to guidelines. The research result indicated that the problems and obstacles of investing in New Theory Farming in Amphoe Mueang Nakhon Si Thammarat, when considered financial value by Net Present Value Method for the 3-year project, the net present value is positive. Which can be assumed that the 3-rai new theory farming investment is a worthwhile investment and should be invested because it will benefit more than investment money.

Keywords: New Theory Farming.

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บทคัดย่อ

การวิจัยครั้งนี้ มีวัตถุประสงค์เพื่อศึกษาและเปรียบเทียบการใช้เทคโนโลยีสารสนเทศ ในการเรียนการสอนของครูโรงเรียนเอกชนในจังหวัดนครศรีธรรมราช กลุ่มตัวอย่างที่ใช้ในการวิจัยครั้งนี้ ได้แก่ ครูโรงเรียนเอกชนในจังหวัดนครศรีธรรมราช ที่ปฏิบัติงานในปีการศึกษา 2560 จำนวน 288 คน โดยทำการสุ่มอย่างง่าย (Simple Random Sampling) เครื่องมือที่ใช้ในการเก็บรวบรวมข้อมูล คือ แบบสอบถามมีการตรวจสอบเครื่องมือตามหลักเกณฑ์ โดยใช้วิธีสัมประสิทธิ์อัลฟา (Alpha Coefficient) ตามวิธีของ ครอนบาค (Cronbach) ได้ค่าความเชื่อมั่น 0.96 ผลการวิจัยพบว่า การใช้เทคโนโลยีสารสนเทศในการเรียนการสอนของครูโรงเรียนเอกชนในจังหวัดนครศรีธรรมราช โดยภาพรวมอยู่ในระดับมาก ลำดับสูงสุดคือ ด้านการใช้วัสดุอุปกรณ์เทคโนโลยีสารสนเทศ รองลงมาคือ ด้านการใช้สารสนเทศในการเรียนการสอน ด้านการใช้แหล่งเทคโนโลยีสารสนเทศในการเรียนการสอน และด้านการใช้ระบบเครือข่ายคอมพิวเตอร์ในการเรียนการสอน ตามลำดับ ครูโรงเรียนเอกชนในจังหวัดนครศรีธรรมราช ที่มีวุฒิการศึกษาต่างกัน มีการใช้เทคโนโลยีสารสนเทศในการเรียนการสอนโดยภาพรวมแตกต่างกัน อย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05

คำสำคัญ: เทคโนโลยีสารสนเทศ ; การเรียนการสอน

Introduction

Nowadays, changes happen everywhere around the world and they also have an impact on the agricultural sector in Thailand. But what most affects Thai agriculture is a change of the farmers themselves. They transfer from food manufacturers to food buyers which makes the market completely change. Also the concept of Thailand changed. They only think of how to make more income for farmers, but do not think about how to help farmers to learn how to take care of themselves and reduce expenses. Most farmers are in debt because only working on agriculture doesn't make enough money for them to live, so it is necessary to borrow the money to use as capital for agriculture. So we should change the concept and find out how to help them to make enough money to live and have some for saving as well. (Samarn Siriphat, 2016)

At present, the global economic downturn has affected the economic situation in many regions as well as Thailand, where most of the people are engaged in agricultural occupation, which has the operating cost, resulting in less income than the household debt. As a result, the Ministry of Agriculture and Cooperatives has set up measures to address the long-term problem of developing farmers' potential. By learning new theory farming and supporting information and knowledge in the form of knowledge training through community networks and marketing channels to encourage farmers to change their spending habits. Sufficiency Economy is based on

creating financial discipline by doing households account in order to reduce the consumption of luxuries. Long-term measures have been implemented as well.

New Theory Farming - Sufficiency Economy is an alternative, which the emphasis is on the farmers' self-help. And the agricultural products left from consuming can be sold for income. Optimal resource allocation model, which was found by Leonid Kantorovich, who received the Nobel Prize in Economics in 1975 for it, can be applied. The optimal resource allocation model was later known as the linear programming model, one of the most important forms in the research operations of the king, used as a model for the study of system behavior. And to plan for efficiency (Office of Agricultural Economics, 2014).

Therefore, the researcher is interested to study the cost and return of investment in New Theory Farming in Amphoe Mueang Nakhon Si Thammarat. To compare the cost and return of investment in the new theory farming and to see the problems and obstacles of investing in new theory farming in Amphoe Mueang Nakhon Si Thammarat. Also, the information will be used to make decisions for those who are interested in investing in the new theory farming.

Research Objectives

1. To study the cost and return of investment in New Theory Farming in Amphoe Mueang Nakhon Si Thammarat.

2. To study the problems and obstacles of investing in new theory farming in Amphoe Mueang Nakhon Si Thammarat.

Literature Reviews

Cost of Production Theory

Anurak Thongsukhowong (2009) gave the meaning of cost that it's the value of lost resources to obtain goods or services. The value must be measured in monetary units. This is characterized by a decrease in assets or an increase in liabilities. These costs may benefit in present or future. When any costs are incurred and the business fully utilized them. The cost is considered to be "Expense" So, the expense is the cost that benefits and the business already utilized it at that moment. And for the costs that the business loses, but will benefit the business in the future, called "Assets".

When Expenses are Revenue, they are usually compared to earnings in the same period to calculate the profit or loss. Which means sales price of goods or services multiplied by quantity or level of activity. Returns Theory

To analyze the investment and return on investment of any project is based on a comparison of the return on investment and the costs of the project which occurs over different periods of time throughout the life of the project. Therefore, it is necessary to adjust the time value of the project to obtain the return and the cost that lost in different periods to the present time. Then, It can be compared with each other more accurately. (Sathiensri Boonrueang, 1999) Financial analysis is the analysis of expenses or investments and the returns or financial gains of a project to analyze whether a project is worth the investment. Generally, there are 2 types of Financial Analysis as follow.

1) An undiscounted approach is the measurement of the cost and return of a project irrespective of the amount of money received or spent over a different period of time, such as the amount received in the first year, and the same amount of money received in the fifth year is considered equal. The analysis of this method, such as the payback period, is calculated from the beginning of the project and calculate when the net worth of the project will equal the total capital investment.

2) A Discounted Approach is a way to measure the return and cost or cost of a project, taking into account the opportunity cost. The most commonly used methods are net present value (NPV) and Internal Rate of Return (IRR).

The importance and success of the new theory.

Bhusana Preepramote (1999 : 92-93) had studied the new theory farming profoundly. The New Theory is a developmental theory with the greatest power. In terms of the process of creating theory, explaining, predicting and applying in practice. In other words, His Majesty the King used the way of experience, both deduction and induction, to organize the theory. By using the logic or reason and fact that he had personally experienced. From his mission to visit and solve problems for people and farmers in the rural area and around the country. He had seen that mixed farming which divided the land into 4 parts at a ratio of 30: 30: 30: 10 for ponds, rice fields, horticulture and agriculture, livestock and living area, respectively. So, farmers can produce enough rice to eat all year round. And there will be enough water to grow crops and horticulture. The fish pond is used for household consumption and for sale. It helps farmers to be self-sufficient and self-reliant. In this arrangement, he calculated theoretically. In order to maximize the use of resources. The explanation in the new theory is easily understandable and can be applied without difficulty. (Ministry of Agriculture and Cooperatives, 1998 : 2)

Research Methodology

This research is a qualitative research. To study and compare the cost and return, together with the problems and obstacles of investing in new theory farming. The new theory farming will be studied from the beginning of planting to harvesting and distributing. The data collection includes primary data and secondary data by interviewing 40 relevant persons. Then analyze the data. The research methodology is as follows.

The population used in this research was the New Theory farmers in Amphoe Mueang Nakhon Si Thammarat with area of 3 rai or more. The number of samples from the new farmers in Nakhon Si Thammarat was selected from 4 districts, namely, Tha Ruea, Mamuang Song Ton, Tha Sak and Tha Rai. Only farmers who have been working for 3 years or more were selected. 10 people from each districts will have a total of 40 participants.

The research instrument was a self-generated questionnaire designed to investigate the cost and return of New Theory Farming practices. The new theory was examined by three experts and found that it was consistent with the objectives of the research.

Research Result

The problems and obstacles of investing in New Theory Farming in Amphoe Mueang Nakhon Si Thammarat are as follow.

It was found that in the new theory farming, the size of the land varies from 1 rai to 50 rais, but the size of the land with the largest number of farmers is not more than 10 rais. Farmers were various in age and career. Some of them do not have a career in agriculture as the main occupations, but most of them do new theory farming as a main occupation. Most of them are male between the ages of 46-55 years old. Farmers who do new theory farming mostly finished only primary school. In doing the new theory farming, farmers are grouped into groups in each district. About land ownership and documentation, most farmers own land. The plants that planted are local or very popular plants in the area. The study of knowledge on the new theory farming of farmers found that the majority of farmers received knowledge from their parents because they helped their parents in the past along with self study. Farmers' product distribution indicated that most of the farmers bring their products to the market. Then the buyer will provide the market price, after that the buyer will sell to the traders who buy the products in order to sell in different places.

Most farmers bring their products to sell at the central market for agriculture or Hua It market. Also, some buyers buy products directly from the farm to reduce transportation cost.

The price is vary according to the season and kinds of products. In conclusion, there are 3 problems and obstacles in investing in the new theory farming.

1) The source of funding is a problem for the new theory farming because operating businesses must have a decent budget to pay until the output is ready. The source of funding is a major obstacle. The council will not support the capital because the opportunity to get pay back is not concrete.

2) Problems on management, the New Theory Farming needs to be maintained regularity with a good system, in order to create high productivity. The principle of management and the specialized knowledge are used in agriculture, which has priority in the use of land. Allocation and implementation are based on new theory principles. Corresponding to Narongsak Pin-Gate (2009), administrators and teachers of Border Patrol Police School, He commented that Problems and obstacles in implementing the new theory farming project of Border Patrol Police School as a whole were found at moderate level.

3) Problems on the market, the middleman will provide the market price, then sell the products to another traders who buy the products for selling in different places. The price may change all the time. Buyers determine the market price, if the farmer can't bear the cost, then it can become a loss. 2. A study of the cost and return of investment in New Theory Farming.

To invest in new theory farming, there are two types of expenses as follow.

2.1 The initial investment cost, such as the cost of grains and equipments. In the study of the cost of new theory farming of 3 rai, the initial cost or investment expenditure is 58,852.5 baht, or 19,617.5 baht per rai.

2.2 In the first 1-8 years, there are operating expenses or fixed cost such as fertilizer cost and labor cost. When combined the two costs together, the total cost of the new theory farming for a period of 3 years is 768,742.5 Baht, an average of 256,247.5 Baht per rai.

2.3 The return earned by the farmer is the income earned from the sale of the products. The output is multiplied by the average price of output. The study revealed that the farmers with 3 rai of land, will earn 1,249,500 baht, or an average of 416,500 baht per rai in the third to eighth year. When analyzed for the profit from the new theory farming investment of 3 rai, It is found that farmers are profitable from farming by doing the financial analysis of investment in new theory farming. To know whether the investment is possible. Using a discount rate of 8%, the risk and uncertainty was assessed by analyzing the sensitivity of the new theory farming investment project.

Financial return analysis of new theory farming investment. In the analysis, three criteria are used: Net Present Value (NPV), Internal Rate of Return (IRR), and payback period. The discount rate is set at 8%, which will be analyzed only if the farmers have sufficient investment capital without taking on loan. The results showed that the present value of revenue is 961,217.4. The present value of the cost is 542,135.4. The net present value (NPV) is 282,019.8. The internal rate of return (IRR) is 46.38%. And the payback period is 3 years 11 months. Based on the financial analysis of the investment of new theory farming with 3 rai of land, we know the financial value of investment. The net present value of the return is positive. According to the criteria for investment decision which is net present value method, if net present value is positive, it means that the project can generate net cash flow more than investment. So, the project is worth the money.

To prevent or reduce the risk or uncertainty that will occur. The new theory farming investment is a long-term investment. So, revenue and expenses may change from the analysis. This will affect the decision in investing the new agricultural theory. Sensitivity analysis techniques are therefore required. The analysis is assumed to be 3 cases which are 1) The cost of investment increased, while income is fixed. 2) The revenue from the sale of the product decreases but the cost is fixed. And 3) The yield is delayed, farmers cannot produce the output as expected. The analysis finds that the new theory farming costs can be increased by more than 18% and that the farmer's income from the sale of the products can be reduced by more than 20% if the harvesting period is very sensitive. Considering the present value of net income decreases as farmers reap the harvest in the fourth year, and the more negative it becomes, when the farmers reap the harvest for the fifth year. However, every financial measure also shows that the new theory farming investment is worth the investment. Despite the uncertainty over higher production costs, income from sales decreased and delayed harvesting. The problems and obstacles in the new theory farming found that most farmers had problems about higher cost due to higher prices of fertilizers and chemicals. In addition, land degradation and agricultural labor are also big problems.

Conclusion and Discussion

Analysis of costs and return on investment. The financial value of the investment is determined by the net present value (NPV), Internal Rate of Return (IRR), and considering the payback period of the investment. The study found that considering the financial value by present value over the 3-year project life, the net present value is positive. According to the criteria for

the current value method, it is considered to be a good investment and worth doing, because it generates more net cash flow.

Considering the financial value, the internal rate of return of investing in new theory farming is greater than the cost of investment. The internal rate of return is the opportunity cost or the expected return. If the investor needs a return that is higher than the calculated return rate within the project. Investors should not invest in this investment. And if the investor wants a return that is lower than the return on the project. As a result, the net present value gets more cash flow from the investment. For calculating return on investment projects. The internal rate of return of the project is 46.38% which makes the net present value positive. Investors can use the internal rate of return as a tool to allocate funds efficiently.

For investment decision by considering the payback period, based on the payback period of the new theory farming investment, there was a payback period of 3 years, 11 months, which was a half of the investment project. Rengrak Champa-Ngern (2001: 317) said that project that has shorter payback period is more liquid than long period investing projects and the risk can be told in the beginning. The projects with a shorter payback period are less risky. In other word, investment in the new theory farming is considered as a slow return. Together with the consideration of the cash flow of the investment, the net return is negative from the beginning of the project until the end of the fourth year, and net return on investment will be positive at the end of the fourth year. So, investors will face financial liquidity problems. In order to reduce the risk, farmers often plant other crops in the garden, such as Lady Finger banana, Pisang Awak banana, and Gros Michel banana. About sensitivity analysis, the research results show that the new theory farming in the area of 3 rai is more sensitive in returns. If the yield is low or the harvesting is delay, farmers who invest in new theory farming are more likely to lose money in the event of increased costs. So, farmers need to maintain the best quality of products, and this may increase the cost of production. Farmers have no choice but to do it because if there is no product, it means loss anyway. So the increase in costs is a problem for farmers today. Most of the costs are for the purchase of chemical fertilizers, Pesticides. Therefore, farmers who want to reduce the cost of this part have to try to use organic fertilizer and reduce chemical fertilizer which will reduce the cost. Moreover, using organic fertilizer does not deteriorate the soil. When the soil fertile, the products will be good, and the returns will be higher.

Research Suggestions

1. The New Theory Farming is an investment that worth doing and gives you good returns on investment. Although most of the output is for domestic consumption, the amount of domestic demand is sufficient to expand production. In addition, the product can be processed into many other products.

2. The new theory farming is less risky due to lower revenues and rising costs. However, farmers must be aware of the costs and revenues. As the product is agricultural, the price is determined by the highly competitive market. If any farmer has higher costs than other farmers, products cannot be sold at a higher price than the market price. Therefore, farmers who do not control costs can have a loss.

3. The new theory farming investment requires highest care and afford. Farmers need to take care of watering, fertilizing, and giving chemicals. Otherwise it will not yield as good as it should. Most farmers suffer from the cost of chemical fertilizers. The prices of chemicals and some tools are higher, causing the cost of production to be higher. The way to help farmers is to set up cooperative, and select agents for purchasing inputs. The costs of buying inputs will be cheaper when buy a lot in one time.

References

Department of Agriculture. (1998). *Application of natural agricultural systems.* Bangkok: Institute of Rice Research, Department of Agriculture, Ministry of Agriculture and Cooperatives

Bhusana Preepramote. (1 9 9 9) . *New thinking : saving the Thai economy.* Bangkok : Ruamduaychuaygan.

Rengrak Champa-Ngern. (2001). *Financial Management*. (2nd ed.). Bangkok : Booknet.

Samarn Siriphat. (2016). Thai Farmers' Future In the changing world. *Kehakaset Journal*.(6) 200-202. Office of Agricultural Economics, (2014) “Thailand Agricultural Statistics Year 2014,” http://www.oae.go.th/download/download_journal/2558/yearbook57.pdf.

Narongsak Pin-Gate. (2009). The results of the new theory farming project of the Border Patrol Police School in Udon Thani, Nong Khai, Loei and Sangwawit Witthayu School. *Journal of Education, Khon Kaen University.* Vol. 32 No. 1 (January – March).

Sathiensri Boonrueang. (1999). *Project planning and evaluation.* Chiangmai: Faculty of Economics, Chiang Mai University.

Anurak Thongsukhowong. (2009). *Accounting of cost.* Khon Kaen : Khon Kaen University.

Likert, Rensis. (1967). *The Method of Constructing and Attitude Scale.* In Reading in Fishbeic, M (Ed.), Attitude Theory and Measurement (pp. 90-95). New York: Wiley & Son.