Improving the Income of Wood Potatoes (Manihot Utilissima l.) in Medan

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ABSTRACT

Wood potatoes is the third most important food crop after rice, with the conditions of the study area suitable for developing wood potatoes will be very easy to get benefits, besides those wood potatoes has a fairly low planting and maintenance costs, while the yield or Agricultural development which includes the food crops and horticulture sub-sectors is one of the strategic sub-sectors which economically, ecologically and culture social plays an important role in national development. The purpose of this research is to know the role of Farmers group in increasing wood potatoes farming income. To know the role of farmer group dynamics in increasing wood potatoes farming income. To know the role of Farmers group and the dynamics of farmer groups simultaneously in increasing wood potatoes farming income. The research method used in this study is a quantitative method with a descriptive correlational survey research approach. The dynamics of the farmer group proved to play a positive and significant role in increasing the farming income of Medan Wood potatoes. A dynamics of the farmer group continues to change according to changes in the economic environment and the conditions of the farmers themselves, so that the development of the farmers, in this case, becomes very important because the dynamics of the farmer groups have a big role in increasing farm income.

Keywords: Income, Group Dynamic, Economics, Farmers Group
JEL Classifications: Q12, Q13, Q18

1. INTRODUCTION

Wood potatoes is the third most important food crop after rice, with the conditions of the study area suitable for developing wood potatoes will be very easy to get benefits, besides those wood potatoes has a fairly low planting and maintenance costs, while the yield or Agricultural development which includes the food crops and horticulture sub-sectors is one of the strategic sub-sectors which economically, ecologically and culture social plays an important role in national development (Yue et al., 2010).

Food is the most basic human need so that the availability of food, especially rice for the community must always be guaranteed. With the fulfillment of the community's food needs, the community will get a calm life and will be better able to play a role in development. Food crops are also a very important sector because it is a group of food crops that produce food as a source of energy to sustain human life. There are many sources of carbohydrates as one of the sources of food throughout the world, both consisting of Cecelia and tubers. Indonesia itself currently prioritizes four types of food crops which are the focus in developing food crops in Indonesia, namely rice, corn, soybeans and wood potatoes (Kapinga et al., 2007).

Some problems in marketing agricultural commodities are found in developing countries in general and in Indonesia in particular, among others, as follows: (a) The unavailability of agricultural commodities in sufficient quantities continuously (b) price fluctuations (c) the implementation of marketing inefficient (d) inadequate marketing facilities (e) dispersed location of producers and consumers (f) incomplete market information (g) lack of knowledge of marketing (h) lack of response from producers to market demand (MacNeal, 2013).

The increase in population, increasing living standards of many people and for the benefit of public welfare is the reason for the people to consume wood potatoes so that the increase in demand for this commodity is very large. The strength of the wood potatoes market can also be seen from the growth and development of processing industry companies that process wood potatoes into various types of food products, whether in the form of snacks or other food products. Like leaves from wood potatoes can be used as vegetables that are very popular in the market, also the tubers can be used as snacks such as chips, tape, also into tapioca flour. It is clear that wood potatoes are a very promising multifunctional product (Londhe et al., 2013).

Wood potatoes farmers sell their agricultural products to traders, traders who want to buy can come directly to farmers' land. There is a price bargain and after the price agreement is reached, the wood potatoes will be handed over to the trader. Farmers' passion to increase the production and quality of wood potatoes produced is largely determined by the high and low prices received. The high and low prices received by farmers are closely related to the condition of the market structure and the number of marketing margins, so that to increase the marketing of wood potatoes farmers can be achieved if the market structure and causes of high marketing margins are known (Orinda, 2013).

South Sumatera Province has abundant natural resource potential but has not been utilized optimally so that it has not made a large contribution to regional development and improved community welfare. Investment potential and opportunities in the agricultural sector, especially the food crops agriculture sub-sector which is based on the development of local superior commodities developed through integrated farming systems or agribusiness systems need to be encouraged considering the natural conditions are very supportive. This can be seen from the dominant agroecosystem conditions with dry land. These conditions are very supportive of germplasm accession of local food plants that have unique properties in response to extreme environmental changes (Menon and Menon, 1997).

Increased wood potatoes production can be done through the expansion of planting areas, besides that wood potatoes production can still be improved by improving production technology at the farm level given the low productivity and through improved harvest and postharvest handling. The harvested area increased in 2014 covering 194 ha while the productivity decreased by 14.61 tons/ha, this was due to the attack of pests and diseases (Kapinga et al., 2007).

Showing that the planting area, harvested area, and production of Medan wood potatoes tend to increase and decrease. This is because the land used for wood potatoes plants has been widely used by farmers to plant timber plants which are agricultural productive land, so this affects the productivity and production of wood potatoes in Toba Subdistrict. So from this matter must be the attention of the relevant agencies so that Toba Subdistrict can increase the production of wood potatoes farming without the need for expansion of farming land so that in the future Toba District remains the largest area of ,wood potatoes in which ultimately can improve the welfare of farmers in Toba Subdistrict.

2. LITERATURE REVIEW

Farmer Dynamic Group is a collection of several farmer groups that join and collaborate to improve economic scale and business efficiency. Participation is a form of active and voluntary involvement and participation, both for reasons from within (intrinsic) and from outside (extrinsic) in the entire process of activities that includes decision making in planning, implementing, monitoring and evaluating, and utilizing the results of activities that achieved (Guttormsson, 2011).

Farmers group is formed to strengthen existing farmer institutions so that government development for farmers will be focused on clear objectives (Johnson et al., 2007). Farmers group in each village consists of all farmers, breeders, and fishermen in the village. The Farmers group will always be nurtured and guarded to become a business entity that is independent, professional and has a wide network. Farmers group development is carried out through mentoring agricultural extension officers with the following steps (York and Danes, 2014):

1. Changing the behavior of farmers to develop productive businesses that are managed jointly in business scale units to meet market needs that are profitable and efficient;
2. Farmers group development can be done by improving the functions of business units in Farmers group, it can also be by expanding business capacity and/or business types;
3. Empowering agricultural businesses through the development of market-oriented and economically-scale types of businesses;
4. Facilitating the establishment of agribusiness/partnership networks between key actors and business actors;
5. Furthermore, Farmers group which succeeded in developing its farms increased its ability to form the economic institutions of farmers who are legal entities.

The establishment of farmers "economic institutions is further regulated through instructions on implementing the development of farmers" economic institutions.

Group dynamics are an organized group of two or more individuals who have a clear psychological relationship between members of one another. Group dynamics describe the strengths in a group situation that determine the behavior of the group and its members. Understanding group dynamics is a method and process that aims to increase the value of this group collaboration trying to grow and build groups that originally consisted of groups of individuals who have not known each other into a single group. Mudege et al. (2015) state that a farmer group can be analyzed by measuring the value of each element of group dynamics.

According to Blinch et al. (2011), income analysis of farming is important in relation to the objectives to be achieved by each farm with various considerations and motivations. Income analysis basically requires two main information, namely: (a) State of acceptance, and (b) state of expenditure (production costs) for a certain period.

Income is a very important factor in supporting the family economy. The level of income is one of the socio-economic indications of a

person in the community, in addition to work, wealth and education. A person's decision in choosing a job is strongly influenced by resources and abilities in the individual, the type of work and level of expenditure a person also determines the level of well-being in one's socioeconomic status (Blinch et al., 2011).

Goltz (2010) states that farmers with high-income levels have something to do with the use of an innovation. Farmers with high income will find it easier to do what they want so that they will adopt agricultural innovations faster in accordance with the conditions of agriculture owned by farmers, so this generally results in higher farmer income.

3. METHODOLOGY

The research method used in this study is a quantitative method with a descriptive correlational survey research approach, which is to see the role of Farmers group and the dynamics of farmer groups in increasing wood potatoes farming income. The research unit in this research activity was a member of the farmer group which carried out the wood potatoes farming activities in Medan. The object of this research was the role of Farmers group and the Dynamics of the Farmer Group in increasing the Revenue of Medan Wood potatoes Farming.

The data collected consists of primary data and secondary data. Primary data collection is done by field observation, direct interviews and through questionnaires. While secondary data was obtained from related agencies related to this research and literature study. The population is an area of generalization consisting of objects or subjects that have certain qualities and characteristics set by researchers to be studied and then drawn conclusions. A number of Research Samples taken in each village Farmers group.

4. RESULTS AND DISCUSSION

4.1. The Role of Farmers Group in Increasing Farming Income

Based on the results of multiple regression analysis, the hypothesis summary model above shows that the contribution of Farmers group (X1) variable value in increasing farm income (Y) is 21.4%, while the remaining 78% is caused by other factors. Probability value $0.05 > 0.008$ (sig probability value), this shows that Farmers group has a significant role in increasing farm income.

The results of the coefficient table on Farmer's group variables explained that the constant values (a) = 58.183 and b1 = 0.583 and the t count value and a significance level of 0.008, the equation above can be obtained from the table: $\approx\partial = 58.183 + 0.583$ X1. So "every increase in the role of Farmers group is one unit, then farm income will increase by 0.583," with (a) constant = 58.183. The magnitude of the role of Farmers group variable (X1) in increasing the farming income variable (Y) shown in the standardized coefficients is 0.463.

The regression coefficient of 0.583 states that each addition (because of the + sign) the role of the 0.583 Farmers group will increase farming income by 0.583 on the contrary, if the role of Farmers group decreases by 1 unit, then farm income is also

predicted to decrease by 0.583, so the sign (+) indicates the direction of the unidirectional relationship, where the increase or decrease in Farmers group role variable (X1) will result in an increase or decrease in farming income variable (Y). t-test to test the significance of constants and variables of farm income. Regression equation (Y = 58.183 + 0 583 X1) which can be obtained later will be tested whether it is indeed valid to predict the variables of farm income which in other words, will be tested whether Farmers group can really play a role in increasing farm income (Blankenhorn, 2007).

4.2. The Role of Farmer Dynamics Group in Increasing Farm Income

The results of multiple regression analysis hypothesis summary models above that the contribution of the value of the farmer group dynamics (X2) in increasing farm income (Y) is affected by 48.6%, while the remaining 51.4% is caused by other factors. The probability value (Œ±) $0.05 > 0.001$ (probability sig), this indicates that the dynamics of the farmer group have a significant role in increasing farm income. In the table of farmers group dynamics coefficients explained that the constant values, (a) = 65,379 and b2 = 1,166 and the farmer group dynamics t value and the significance level 0.001, the equation above can be obtained: $\approx\partial = 65,379 + 1,166$ X2. So "every increase in farmer group dynamics is a unit, then farm income will increase by 1,166," a constant of 65,379. The magnitude of the role of farmer group dynamics (X2) in increasing farm income (Y) in the standardized coefficients is 0.697.

The regression coefficient of 1.166 states that each addition (due to the + sign) of the farmer group dynamics of 1.166 will increase farming income by 1,166. Conversely, if the farmer group dynamics fall by 1 unit, then farm income is also predicted to experience a decline of 1,166, so a sign (+) indicates the direction of a unidirectional relationship, where the increase/decrease in farmer group dynamics (X2) will result in an increase or decrease in farm income (Y). t-test to test the significance of constants and variables of farm income.

Regression equation (UY = 65,379 + 1,166 X2) which can then be tested whether it is indeed valid to predict the variables of farm income, in other words, it will be tested whether the dynamics of farmer groups can really play a role in increasing farm income. This is in line with the theory put forward. Farmer group dynamics is a dynamic that makes it possible to become farmers' business in increasing farm income (Guttormsson, 2011; Orinda, 2013).

4.3. Farmers Group Hypothesis Analysis, Farmer Group Dynamics Together on Farming Revenue

Based on the summary model. Farmers group and farmer group dynamics together play a role in increasing farm income. The contribution of the value of Farmers group (X1) and farmer group dynamics (X2) in increasing farm income (Y) by 22.7%, while the remaining 77.3% is caused by other factors. At Farmers group coefficients value and farmer group dynamics together explained that the constant values, (a) = 65.909 and b1 = 0.897 and b2 = 2.165 as well as t value Farmers group 3.013, significance level of 0.009 and farmer group dynamics t value of 7.449, significance level of 0.002, from the table above can be obtained the regression equation

is: $\approx \partial = 65.909 + 0.897 X1 + 2.165 X2$. So "every increase in the role of Farmers group by unit, then farm income will increase by 0.897," with the assumption of constant farmer group dynamics, while each increase in farmer group dynamics by unit, then farm income will increase by 2.165.

Farmers group regression coefficient of 0.897 states that each addition (because of the + sign) the role of Farmers group is 0.897 will increase farming income by 0.897. Conversely, if Farmers group falls by 1 unit, then farm income is also predicted to have a decrease of 0.897, so a (+) sign indicates the direction of a unidirectional relationship, where the increase in Farmers group variable (X1) will result in an increase in farming income variable (Y).

Farmer group dynamics regression coefficient of 2.165 states that each addition (due to the + sign) of farmer group dynamics of 2.165 will increase farm income by 2.165. Conversely, if the farmer group dynamics fall by 1 unit, then farm income is also predicted to experience a decrease of 2,165, so the sign (+) indicates the direction of the unidirectional relationship, where the increase in farmer group dynamics variables (X2) will lead to an increase in farming income variable (Y).

The results of the standardized coefficients regression analysis showed that the magnitude of the role of Farmers group (X1) and farmer group dynamics (X2) together in increasing farm income (Y) was 0.325 Farmers group (X1), 0.594 farmer group dynamics (X2). The dynamics of the Farmer Group are dominant in increasing farm income rather than the role of Farmers group However, the effectiveness of farmer group dynamics will increase if supported by the active role of Farmers group (He et al., 2013).

5. CONCLUSION

Farmers group proved to have a positive and significant role in increasing the farming income of Medan Wood potatoes. This shows that the existence of Farmers group is still needed by the farmers of wood potatoes in increasing their farming sales. The dynamics of the farmer group proved to play a positive and significant role in increasing the farming income of Medan Wood potatoes. The dynamics of the farmer group continues to change according to changes in the economic environment and the conditions of the farmers themselves, so that the development of the farmers, in this case, becomes very important because the dynamics of the farmer groups have a big role in increasing farm income. Farmers group and the dynamics of farmer groups proved to have a positive and significant role in increasing farm income. However, the dynamics of the dominant farmer group play a role in increasing Medan's wood potatoes farming income.

The potential for wood potatoes farming is very large with a large size of land in the urban area Toba still allows for the planting of large amounts of wood potatoes, but there are several obstacles, such as Capital, Marketing and training for wood potatoes farmers. Wood potatoes marketing needs government attention for farmers. Compost fertilizers are very useful for farmers. Prices are very uncertain and detrimental to farmers, asking the attention of local and central government so that farmers are more enthusiastic. For now, the price of wood potatoes is erratic, farmers hope to provide solutions to wood potatoes production channels, one of which is a wood potatoes processing plant.

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