Analysis of Ginger Farming Business in Peat Land in West Kalimantan
(Case study: Ginger Farmer in Pasir Palembang Village, Mempawah Regency)

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ABSTRACT

Peat land potential as agricultural land in Indonesia is quite large of about 6 million hectares out of 21 million hectares or 11% of land area in Indonesia. The utilization of peat land as agricultural land requires accurate and careful planning, appropriate technological application, and proper management because of its marginal and fragile ecosystem. Peat land has a big potential as agricultural land because this land contains high organic material. The problem is that the pH is very low so that it is not good for agricultural land. However, the research in Pasir Palembang Village, Mempawah Regency proved that doing ginger farming business in peat land could increase the farmers’ income and welfare. The research aims to: 1) study problems faced in doing ginger farming business, 2) determine ginger farmer’s income. Data collection was done by using Focus Group Discussion method and R/C Ratio analysis. The research result found out that the main problem in ginger farming business was the rotten tuber. Based on the analysis result it was found that R/C ratio obtained in ginger farming business was 3.4. Total revenue obtained was IDR 75,000,000 with the profit over cash expense was IDR. 53,620,000 and the profit over total expense was IDR. 53,470,000. The research concluded that: 1) there need a serious handling of rotten tuber disease in ginger plant, 2) doing ginger farming business could increase income and welfare of the peat land farmers in Pasir Palembang Village, Mempawah Regency.

Keywords: Peat land, ginger farming, R/C ratio, Pasir Palembang Village, Mempawah Regency

INTRODUCTION

Indonesia has the largest peat land among tropical countries that is about 14.9 million hectares (Ritung et al. 2011 in Agus et al. 2014). The peat land is scattered in Sumatera, Kalimantan and Papua (BBSDL, 2011). Agricultural land function changes into industrial area, residential area and other non-agricultural purposes constitute a challenge to agricultural development. Climate change has also threatened various aspects of life including agricultural sector. The limitation of fertile land has encouraged the use of marginal land for agriculture including peat land that is scattered in Sumatera, Kalimantan and Papua. In order to give optimal benefit, peat land needs to be managed properly, according to its nature and characteristics.

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Therefore, before it is utilized as agricultural land the peatland condition viewed from various aspects needs to be known accurately the coverage and thickness as well as the level of peat maturity itself.

The utilization of peat land as agricultural cultivation is feared to cause negative impact, such as disturbing the high carbon potential stored in peat, disturbing the ability of peat to pile carbon (carbon sink), disturbing peat biological diversity, and the concernment that the utilization change of peat land would emit very high amount of greenhouse gas (GHG) (Mamat et al. 2014). It is further said, sustainable farming business in peat land forms one of agricultural models based on environmental sustainability. Farming business would sustain if (in the long run and even until future generation) it is profitable (economic aspect), peat condition is sustainable or its quality does not decrease (environmental aspect), the model developed could be accepted or adopted by various parties (social aspect). Keraf (2002) suggested
that land management would sustain if in its implementation it integrated and gave the same weight on economic, environmental and social aspects.

Based on the survey and interview results conducted on farmers in Pasir Palembang Village, East Mempawah County, Mempawah Regency, it was said that peat land was not an obstacle for farmers in farming business because there was no other alternative. This was proven by ginger farmers in Pasir Palembang Village. Based on this, then the research was conducted to: (1) study problems faced in ginger farming business; (2) determine ginger farmers’ income in Pasir Palembang Village.

MATERIALS AND METHODS

The research was conducted in Pasir Palembang Village, East Mempawah County, Mempawah Regency. The interview was done on 30 ginger farmers by using “Stratified Random Sampling” interview technique. Data were collected from secondary data obtained from related institutions and from primary data obtained from the result of interview on farmers. Subsequently data were processed descriptively and analyzed. To know the feasibility of the business, R/C ratio was used. To identify problems about ginger plant cultivation, Focus Group Discussion method was used.

RESULT AND DISCUSSION

1. Area Characteristics

Pasir Palembang Village belongs to East Mempawah County, Mempawah Regency. The area width of Pasir Palembang Village is 720 ha that consists of dry land of 458 ha and the remainder of residential area.

As for area boundary, on the North side it is bordered with Antibar Village, on the South side it is bordered with PasirPanjang Village, on the West side it is bordered with Tengah Village, and on the East side it is bordered with SeiBakau Kecil Village. In general, the topography of Pasir Palembang Village is low-lying area that is located near the coastline with the height of 2 meters above sea level so that it is very susceptible to flood and heavy torrential rain especially in the low level area.

Soil type of Pasir Palembang area can be divided into two, i.e. in the coastline area the soil type is alluvial, whereas in the higher level area or land area the soil type is peat that has a potential for horticultural plant, dry-season second crop, corn and cassava. Pasir Palembang Village generally consists of peat land with temperature of 270-320°C and humidity 79-85% (Village Monography 2015).

2. Farmers’ Characteristics

Human resource potency in an area describes the people’s ability in managing their area holistically by using managerial skill, know-how, access to information and technology and openness in accepting innovation.

Human resource potency in Pasir Palembang Village was as follows: the number of men was 1,707 persons and women 1,591 persons that consisted of 723 households. Whereas data of population number based on sex can be seen in Table 1.

| No | Sex   | Number (person) | Percentage (%) |
|----|-------|-----------------|----------------|
| 1  | Male  | 1,707           | 51.7           |
| 2  | Female| 1,591           | 48.3           |
|    | Total | 3,298           | 100            |

Source: Monography of Pasir Palembang Village, 2015.

Improvement of a village is determined by education level of the people in the village. The education level in Pasir Palembang Village varied, some of them are illiterate and having no schooling, and some had graduated from tertiary education. The education level of people’s Pasir Palembang Village can be seen in the Table 2.
Table 2. The number of people according to level of education

| No | Level of Education               | Total (Person) | Percentage (%) |
|----|----------------------------------|----------------|----------------|
| 1  | Having no schooling yet          | 540            | 16             |
| 2  | Illiterate                       | 350            | 10.6           |
| 3  | Elementary school/Equal          | 1,400          | 42.4           |
| 4  | Secondary school/Equal           | 473            | 14.3           |
| 5  | High school/Equal                | 495            | 15.0           |
| 6  | College                          | 20             | 0.6            |
| 7  | Tertiary education               | 20             | 0.6            |
|    | Total                            | 3,298          | 100            |

Source: Monography of Pasir Palembang Village, 2015.

3. Problem Identification of Ginger Cultivation

Disinterment of problems was done by using Focus Group Discussion (FGD) method that aimed to obtain input or information about the problem that was local and specific. This problem solving was determined by other party after information had been collected and analyzed. The FGD result identified the problem of ginger plant cultivation and the solution which had been done by farmers in Pasir Palembang Village presented in Table 3.

Table 3. Problems and solutions of ginger plant cultivation

| No | Problems                                      | Solutions                                      |
|----|-----------------------------------------------|-----------------------------------------------|
| 1  | Tuber decay                                   | Arrangement of planting spacing                |
| 2  | Smelling tuber                                | Soil preparation                               |
| 3  | Cause of the disease to ginger plant is not known | Fertilizing according to recommendation       |
| 4  | Disease attack during shading                 |                                               |

Source: Interview Result, 2015.

4. Analysis of Ginger Farming Business in Pasir Palembang Village

The existing farming business land in Pasir Palembang Village was of peat land and it was generally inhabited by Madura ethnic. This ethnic group was very persevering in processing the land. Despite their knowledge in processing peat land is limited, they did not surrender to the condition and based on the interview result it turned out that the farmers had a high morale and continuously search for information about farming business in peat land. The search for information was conducted by continued consultation with agricultural officials and related institutions as well as through the Internet browsing.

The utilization of peat land must agree with the typology (Najiyati et al. 2005). Farming business system that could be developed in peat land among others was in the form of farming business that was based on food crop and those of mainstay commodities (Suprihatno et al. 1999; Alihamsyah et al. 2000). Food crop based farming business system was intended to guarantee the food security of farmers and their community, whereas the mainstay commodities based farming business system, including plantation could be developed in large scale in the development perspective of agribusiness system.

Initially the farmers in Pasir Palembang Village only managed vegetable commodity in peat land which among others long bean, kale, mustard, chili, eggplant, radish and cucumber. However, with the information
obtained finally the farmers started to try planting ginger in a very small scale. After having seen the very good growth of ginger in peat land with quite good yield then most people started planting ginger. Farmers planted ginger with an average area of 0.5 ha. Ginger type being managed by farmers was mostly of local ginger because according to farmers it was easily handled, widely favored by consumers, as well as ginger cultivation business has a very good prospect. This is because market demand for ginger commodity increase day by day. The people’s increase consumption of ginger is influenced by the role and benefit of ginger in life, either as cooking spice, food ingredient, or medicine ingredient especially traditional medicine. One of the things influences the high consumer demand of ginger produce is the high content of essential oil in its rhizome. As for the analysis of ginger farming business in Pasir Palembang Village it can be seen in 4.

Table 4. Analysis of Ginger Farming Business in Peat Land in Pasir Palembang Village, 2015

| No | Item                          | Unit | Unit price (IDR) | Volume | Total (IDR) |
|----|-------------------------------|------|------------------|--------|-------------|
| I  | Variable costs               |      |                  |        |             |
| A  | Production tools             |      |                  |        |             |
| 1  | Seed                         | Kg   | 30.000           | 500    | 15.000.000  |
| 2  | NPK Mutiara                  | Kg   | 10.000           | 50     | 500.000     |
| 3  | SP36                         | Kg   | 7.000            | 50     | 350.000     |
| 4  | Urea                         | Kg   | 6.000            | 100    | 600.000     |
| 5  | KCl                           | Kg   | 8.000            | 100    | 800.000     |
| 6  | Ash (Cow Manure)             | Sack | 40.000           | 50     | 2.000.000   |
| 7  | Pesticides:                  |      |                  |        |             |
|    | - Darmason                    | Bottle | 25.000         | 4      | 100.000     |
|    | - Carakon                     | Bottle | 30.000           | 4      | 120.000     |
|    | - Dufon                       | Bottle | 75.000           | 4      | 300.000     |
|    | - Corona                      | Bottle | 70.000           | 4      | 280.000     |
| B  | Work force                    |      |                  |        |             |
| 1  | Soil Processing (DK)          | HOK  | 25.000           | 7      | 175.000     |
| 2  | Planting (DK)                 | HOK  | 25.000           | 7      | 175.000     |
| 3  | Weeding (DL)                  | HOK  | 25.000           | 2      | 50.000      |
| 4  | Piling (DK)                   | HOK  | 25.000           | 4      | 100.000     |
| 5  | Fertilizing (DL)              | HOK  | 25.000           | 4      | 100.000     |
| 6  | Happen Controlling (DL)       | HOK  | 25.000           | 4      | 100.000     |
| 7  | Harvest and Cleaning (DK)     | HOK  | 50.000           | 10     | 500.000     |
| II | Fixed Costs                  |      |                  |        |             |
| 1  | Land Rent                     |      |                  |        | 0           |
| 2  | Tool Depreciation             |      |                  |        | 200.000     |
| 3  | Land and Building Tax         |      |                  |        | 80.000      |
| III| Cash Cost                    |      |                  |        |             |
| IV | Total Cost                   |      |                  |        | 21.530.000  |
| V  | Revenue                       | Kg   | 25.000           | 3000   | 75.000.000  |
| VI | Income                       |      |                  |        | 53.470.000  |
| VII| R/C ratio on total cost      |      |                  |        | 3.48        |
| VIII| Profit                       |      |                  |        |             |
|     | On Cash Cost                  |      |                  |        | 53.620.000  |
|     | On Total Cost                 |      |                  |        | 53.470.000  |

Source: Interview Result, 2015
Total revenue of ginger farming business with an area of 0.5 ha was as much as IDR 75,000,000 with average ginger production of 3,000 kg per 0.5 ha. Ginger farmer’s income was as much as IDR 53,470,000 or equal to the profit on total cost. Analysis result of R/C ratio described the amount of farming business revenue to be acquired by farmer for every rupiah cost spent. With the value of R/C ratio more than 1 (one) it could be concluded that ginger farming business conducted in peat land of Pasir Palembang Village was feasible and efficient, meaning that ginger cultivation has been being conducted has a positive impact on the increase of household income.

CONCLUSION

1) Serious handling was needed against the attack of tuber decay disease on ginger plant in peat land.
2) Ginger business farming could increase the income and welfare of peat land farmers in Pasir Palembang Village, Mempawah Regency.

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