An analysis of the feasibility of the copra business in the village of Pendowo Harjo, sub-district of Sungsang, Banyuasin Regency

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Abstract
Copra is used as raw material of coconut oil and exported commodity. This study was conducted in the Tidal Land of Pendowo Harjo Village, Subdistrict of Sungsang, Banyuasin Regency, which aims to calculate the production costs incurred, the income earned, and to analyze the feasibility of the business of producing copra. In this research, sampling was conducted by simple random sampling method. The number of samples taken in this study was 10 individuals who were the copra business people out of 117 people of population. The results of analysis show that the production cost incurred is Rp 1,198,076.12, and the income earned is Rp 414,598.88 per unit of the production process. Financially, the value of NPV obtained is Rp 19,668,343.86, the value of IRR is 60.75 percent and the value of the Net B/C is 1.74. Therefore, economically, the copra business is feasible to be developed.

Keywords: business, feasibility, copra, tidal land

1. Introduction
Coconut (Cocos nucifera L) is a plantation commodity and socio-economic commodity grown from generation to generation in almost all parts of Indonesia of the total coconut planted area, 98% of is people owned coconut plants, either grown as a garden plants or as the house yard plants that concern the needs of the lives of the 1.3 million households that rely on the coconut plants [1]. Coconut in Indonesia is basically allocated to meet the needs of fresh coconuts and copra. The fresh coconut in Indonesia is consumed as a foodstuff in the form of young coconut and coconut milk, raw material of homemade frying oil, raw material of desiccated coconut and coconut seeds [2]. Whereas copra is used as raw material of coconut oil and exported commodity [3].

The data obtained from the Assessment Institute of the Agricultural Technology of South Sumatra in 2013, estimated that 82.5% of the total coconut production is processed into copra. This is because in the marketing of coconut products, copra has higher price level. It can be stored for a long period of time. Besides, it is a raw material that can be further processed into consumer goods, such as cooking oil, butter, cheese and soap. Copra is the endosperm which has been dried through the drying process. Good quality copra is derived from the ripe coconut drupes whose age is around 11 to 12 months [1]. To business people, copra business still has a good opportunity in the future. With high coconut potential, the entrepreneurs are still interested and motivated to do business of coconut that is...
processed into copra or other derivative products. The copra farmers are very interested in dealing with the prospective foreign buyers from abroad, such Malaysia, Thailand, and other countries who want to accommodate their products.

Pendowo Harjo village is located in one of the low tide areas which has potential to be a marginal land [4]and to be made a place for managing the business of producing copra in the Subdistrict of Sungsang, Banyuasin Regency. The copra production at this location is very simple, but it is able to increase the income of the owner in fulfilling the needs of everyday life. The copra businesses in the village of PendowoHarjo is promising enough, because generally coconut palms flourish in the courtyard yard of the farmers in this village, so many farmers do copra production enterprises. Although in some other villages there are farmers who do copra production enterprises, but there many more farmers who conduct a business of copra production in the village of PendowoHarjo. How big is the business of producing copra can be developed[5].In this case there is still few research has been conducted about feasibility analysis particularly on copra. However, there is one similar research but on feasibility analysis of pepper farming in Lahat Regency by Sumantri, Sigit, Isroni[6].

Based on the aforementioned background, the problem can be formulated by calculating the production costs incurred and the expected profit earned in the business of producing copra and its feasibility in the Village of PendowoHarjo

Based on the existing problems, this study has the objectives and the usage as followsto calculate the amount of production costs incurred and profit earned in the business of producing copra in the village PendowoHarjo and to analyze the feasibility of copra producing business in the village PendowoHarjo. The usages of this study are as follows: the results of the study can be an information source for the researchers and it can also broaden the knowledge about the business of copra production business particularly in the Village PendowoHarjo and the results of the study can be made as references for other researchers whose study is doing your math in connection with this study.

The model of approach used in this study describes that copra production is summed up from production factors while the gross income expected to be earned is calculated from total production multiplied by current price of copra obtained while the research was conducting. The net profit can be calculated from dividing gross income by production costs. The final result of this study is to assess the feasibility of copra production business by calculating NPV, IRR and Net B/C.

2. Material and Method

This study was conducted on Low Tidal Land of PendowoHarjo Village, Subdistrict of Sungsang, Banyuasin Regency. The location determination is done intentionally (purposive) with the consideration that most of the residents of the village conduct the business of producing copra [7].

The method used in this study is survey [8]. Survey method is an approach used by means of interviewing a small number of the population, aiming to collect information about the large number of samples using questionnaires, interviews and direct observation directly in the area of the study [9, 10].

The data collected consist of the primary data and the secondary data [11]. The primary data are obtained from direct interviews with the copra business owners using questionnaires that have been prepared in advance. While the secondary data are obtained from the office, agencies and institutions that are related to this research. The sampling method used in this study is simple random sampling [12], with the number of samples taken as many as 10 copra businessmen from 117 members of the population.

The data obtained from the field are processed in tabulation, and then analyzed quantitatively and descriptively (processed, analyzed and conclusions drawn that describes the object under study). The calculation of cost of production and income were conducted according [13]. Feasibility was analyzed using Net Present Value (NPV) according to [14-16].
3. Result and Discussion
The results of the analysis reveal that it takes one week for one process of production of the copra, starting from the cutting of the coconuts, gouging and drying. For the average costs incurred and income earned, more details can be seen in the following table.

3.1 Production cost

Table 1. The Average Production Cost of Copra Producing Business in the Village Pendowo Harjo, Subdistrict of Sungsang, Banyuasin Regency per unit process.

| No | Description               | Values (Rp) |
|----|---------------------------|-------------|
| 1  | Fixed Cost                |             |
|    | a. Rent of Site           | 26,727.78   |
|    | b. Wear of Tools          | 19,444.44   |
|    | c. Depreciation of tools  | 7,283.34    |
| 2  | Variable Cost             | 1,171,348.33|
|    | a. Means of Production    | 99,348.33   |
|    | b. Labor                  | 372,000.00  |
| 3  | Total Production Cost     | 1,198,076.11|

The average cost of production which has been incurred in the business of producing copra in Pendowo Harjo Village is Rp 1,198,076.11 consisting of fixed costs of Rp 26,727.78 and the variable costs of Rp 1,171,348.33 per production process. The average cost of site rent is Rp 19,444.44, depreciation of tools (calculated based on the tool use) in the amount of 7,283.34 per production process (consisting of a drying floor is Rp 4,193.52, cleavers is Rp 939.00, gouging is Rp 520.01, baskets of rattan is Rp 659.17 and scales is Rp 971.64).

The average variable costs already incurred is Rp 1,171,348.33 per unit process, consisting of (means of production is Rp 799,348.33 and labor is Rp 372,000.00). Means of production consists of the purchase of coconut, sacks and raffia, the average purchase of coconut is as many as 605 coconut drupes of big size at Rp 441,200.00, medium-sized coconut drupes as many as 549,40 drupes at Rp 200,125.00, and the coconut of small size as many as 582 drupes at Rp 141,283.33, with the average price of the coconut fruit of Rp 730.00 per item. The average cost of purchasing a sack is Rp 15,340.00 per process with an average price of Rp 1,360.00 per piece. The sacks are used to bag the copra produced which is ready to be weighed. The average purchase of raffia is Rp 1,400.00 per process.

The labor employed in the business of producing copra is derived from the internal and the external of the family. In this analysis, the use of labor from the internal and the external of the family is still reckoned to reveal the profit and the loss of the business done [17]. The average labor costs incurred include the cost of cutting the coconut in half is Rp 96,000.00, the cost of drying the coconut is Rp 48,000.00, costs of gouging is Rp 152,000.00, the cost of drying is Rp 48,000.00, cost of sacking is USD 28,000.00 per process. The work of cutting the coconut into two requires an average of 2.4 person-days with an average wage of Rp 40,000.00 per person. The work of drying requires an average of 1.6 person-days with an average wage of Rp 30,000.00 per person. The work of gouging requires an average of 3.8 person-days with an average wage of Rp 40,000.00 per person. The activity of sacking requires work of labor with an average of 0.70 HOK with an average wage of Rp 40,000.00 per person.
3.2 Revenue and Profit

Table 2. The Average Revenue And Profit of the Copra Producing Business In the village of PendowoHarjo, Subdistrict of Sung Sang, Banyuasin Regency.

| No | Description                  | Values         |
|----|------------------------------|----------------|
| 1  | Production (Kg)              | 455.56         |
| 2  | Selling Price (Rp/Kg)        | 3,540.00       |
| 3  | Revenue (Rp)                 | 1,612,682.40   |
| 4  | Total Production Costs (Rp)  | 1,198,076.11   |
| 5  | Profit (Rp)                  | 414,606.29     |

In terms of the economic sense, the production is a process of utilization of all the resources available to achieve the results that guarantee the quality and quantity, well managed, so it is worth being a traded commodity. The product which is derived from this enterprise is the copra which has been packaged in sacks. On the average in one production process (per production) the business produce as much as 455.56 kg of copra with an average selling price of Rp 3,540.00, so a revenue of Rp 1,612,682.40 is obtained and a profit of Rp 414,606.29 is obtained. The calculations show that in conducting the business of producing copra, the business owner receive an average revenue of Rp 1,612,682.40, out of production costs which is already incurred in the amount of Rp 1,198,076.11 (The revenue can cover the production costs which is already incurred, it means that the business is profitable for the business owner).

3.3 Business Feasibility

In this analysis, the financial, the ecological and the technical feasibilities are calculated. Financial feasibility analysis is conducted to determine whether or not the business is worth developing. An enterprise may results in profit, but it is not necessarily worth developing. The financial analysis involves the use of NPV, IRR, and Net B/C Ratio. Ecologically, according to the local people, the copra production enterprises have an impact on the environment where they live, because coconut water has not be used properly (coconut water is just thrown away), causing unpleasant odor. To avoid the environmental impact, product diversification should be done [18]. Technically in terms of copra production, purchase of raw material from the climbers who come directly to the owner of copra business, and the tools in use are still fairly simple, but the quantity and the quality of the copra produced is still the first priority [19, 20].

The results of financial calculations are as follows: The value of NPV is Rp 19,668,343.86 which means that the profits derived from the business for three years is Rp 19,668,343.86 at the prevailing interest rate of 18 percent per year. The IRR analysis is used to convince and evaluate the resulting level of investment. The value of IRR obtained is 60.75 percent. These results suggest that the businesses may still be continued because it is still profitable (profit of above 18 percent). The total investment equals the NPV or NPV is 0 lying between (18 % - 60.75%). The businesses earning will finish at 60.75 percent interest rate for 3 years. The analysis of Net BC ratio is the ratio between the net benefit which has been discounted positive (+) and a net benefit which has been discounted negative (-). The results of the calculation is the value of Net B/C of 1.74 which the business of copra producing is worth developing.
Table 3. The Feasibility of the Copra Production in PendowoHarjo Village, Subdistrict of Sungsang, Banyuasin Regency.

| No | Description | Values       |
|----|-------------|--------------|
| 1  | NPV (Rp)    | 19,668,343,86 |
| 2  | IRR (%)     | 60.75        |
| 3  | Net B/C     | 1.74         |

4. Conclusions
Based of the results of the study, the following conclusions are drawn:

a. In an effort to produce copra, the production cost incurred is Rp 1,198,076.11, and the profit obtained per unit of production is Rp 414,598.89.

b. Based on the 3 (three)-year experience of producing copra, it can be concluded that financially the copra production enterprise is feasible to be developed with an NPV of Rp 19,668,343.86, the value of RR of 60.75 percent, and the value of Net B/C of 1.74.

Based on the results of the study, to increase the added value and revenue from the coconut products, it is suggested that the business of copra production should not only take the benefit of the coconut flesh only, but also the coconut water which can be processed into nata de coco. The copra produced can be further processed into vegetable oil, although the manufacturing process is still the traditional way, it will be able to meet the needs of vegetable oil, particularly in the village of PendowoHarjo.

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References
[1] Setyamidjaja D 2008 Coconut Planting and Processing (in Bahasa Indonesia) (Yogyakarta: Kanisius Publisher)
[2] Jackson E 2006 From Where Comes Coconuts. The Panama News (Volume 12, Number 16). Retrieved April 10, 2011.
[3] Suhardiman P 2001 Planting Hybrid Coconuts (in Bahasa Indonesia) (Jakarta : Penebar Swadaya Publisher).
[4] Sianturi D E 2010 Alignments In Developing Tidal Land Farming. Puslitbangtan, Bogor Agricultural Research Agency (in Bahasa Indonesia). Puslitbangtan, Badan Litbang Pertanian Bogor. http://els.bappenas.go.id/upload/other/Keberpihakan_dalam.htm
[5] Marawila T, Ancev T and Odeh I 2011 The Economics of Agricultural Land Use Dynamics in Coconut Plantations of Sri Lanka. Paper presented at the 2011 Conference (55th), February 8-11, 2011, Melbourne, Australia.
[6] Sumantri, B., Sigit, BP., Isronita, M 2004. Analysis of the pepper farming financial feasibility (Piper nigrum) in Kunduran Village, Ulu Musi Subdistrict, Lahat Regency of South Sumatra (in Bahasa Indonesia) J. Indonesian Agric. Sci. 6 (1) 32-42
[7] Sriati 2004 Methods of Social Research (in Bahasa Indonesia) Faculty of Agriculture, Sriwijaya University,Indralaya.
[8] Beck S E and Manuel K 2008 *Practical Research Methods For Librarians And Information Professionals.* (New York: Neal-Schuman)

[9] Nasution S 2004 *Research Methods* (in Bahasa Indonesia) (Jakarta : Bumi Aksara)

[10] Bouma G D, Ling R and Wilkinson L 2009 *The Research Process Canadian edition.* (Don Mills : Oxford University Press)

[11] Odimegwu, CO. 2000. Methodological issues in the use of focus group discussion as a data collection tool. *Journal of Social Sciences, 4*(2-3) 207-212

[12] Silalahi, Ulber. 2009. *Methods of Social Researches* (in Bahasa Indonesia) (Bandung: PT. Refika Aditama)

[13] Soekartawi 2002 *Analysis of Farming Enterprises* (in Bahasa Indonesia) (Jakarta: University of Indonesia Press)

[14] Harmoni A 2007 *The Feasibility Study* (in Bahasa Indonesia) (Jakarta : Gunadarma University Press)

[15] Nurmalina R, Sarianti T and Karyadi A 2010. *Business Feasibility Study* (in Bahasa Indonesia) (Bogor : Department of FEM Agribusiness. IPB)

[16] Kasmir J 2010 *Business Feasibility Study 2nd Edition* (in Bahasa Indonesia) (Jakarta (ID): Bumi Aksara)

[17] Pathiraja P M E K, Fernando M T N, Abeysekra A W A D R and Subasinghe S D J N 2010 An Assessment of Labour Availability in Major Coconut Growing Areas in Coconut Triangle *J. Coconut Research Institute of Sri Lanka (cocos)* 19(1) 13-26. DOI: http://dx.doi.org/10.4038/cocos.v19i1.4747

[18] Kamaluddin 2008 *Diversified Farming of Coconut As an Effort To Increase Farmers' Income* (in Bahasa Indonesia) Riau University, Faculty of Agriculture.

[19] Fernando M T N, Zubair L M, Peiris T S G, Ranasinghe C S and Ratnasiri J 2007 *Economic value of climate variability impacts on coconut production in Sri Lanka AIACC Working Papers.* (Washington DC : The AIACC Project Office,International START Secretariat)

[20] Bourke R Michael and Harwood T 2009 *Food and Agriculture in Papua New Guenia* (Canberra: ANU Press)