

ABSTRACT

FARMER'S RESPONSE TO *Jatropha curcas* L. DEVELOPMENT IN KETIBUNG DISTRICT, LAMPUNG PROVINCE

Tubagus Hasanuddin ✓

The Department of Agribusiness, Agricultural Faculty, Lampung University,
Jl. Soemantri Brojonegoro No.1, Gedungmeneng
Bandarlampung, Indonesia

Jatropha curcas L. has a strategic position in fuel shortages. This is because the oil content of *Jatropha Curcas* L. has a high relative and can be used as alternative fuels. In South Lampung, Lampung Province, the development of *Jatropha curcas* has been initiated since 2005, but the development shows that are less encouraging. Therefore, farmer's response to the development of *Jatropha curcas* L is important to know..

This study aims to determine: 1) The farmer's response to the development of *Jatropha curcas* L. as an alternative biofuel, 2) The influence factors to farmer's response to the development of *Jatropha curcas*. L, 3) Farm Income *Jatropha curcas*. L, and 4) The prospect of *Jatropha curcas* L development in farmer's communities.

This research is done in Ketibung district, South Lampung, Lampung Province. The study was conducted from February-September 2009. The total of Respondents are 60 person. The research method is a observation participations and the data analyzed were descriptive.

The results of this research showed that 1) The farmer's response to development of *Jatropha curcas*. L are positively if *Jatropha curcas* L farm can increase farmer's income, 2) The factors of production prices, product marketing, government policies, incentives, and farmers' social interactions affect the response of farmers in developing *Jatropha curcas*.L, 3) Farm Income of *Jatropha curcas* L not yet feasible economically ($R/C < 1$), and 4) prospects to the development of *Jatropha curcas* L is very good if the government gives great help in providing production facilities and support the marketing production with high prices (Rp.5000,00/kg)

Keywords: *Jatropha curcas* L, prospects, farm income, the farmer's response .

INTRODUCTION

Background

National petroleum reserves is scarcity to the future. Until December 2005, the national petroleum reserves only 9 billion barrels but the level of petroleum consumption increased. The high consumption of petroleum looks from the high petroleum exploitation of Indonesia reached 500 million barrels of year. Thus mathematically (calc. 2005), Indonesian petroleum reserves only last for another 18 years (Swastika, 2005). To overcome the energy crisis, Indonesia is required to develop alternative energy. However, these alternative energy must have some characteristics such as competitive, not damage the environment, and sustainable. One source of energy have the criteria of competitive and sustainable made from plant material (*Biofuel*).

Indonesia is rich biological resources likely to produce biofuel. According to research the Agency for Assessment and Application of Technology (BPPT), Indonesia has 60 species of plants that have the potential to be alternative energy. One crop a potential alternative energy is *Jatropha curcas* .L. According to Sumarsih (2007), *Jatropha* has the advantage to produce biofuel than other crops because of the properties he owned, among others contain oil quite high (30-50%). However, despite of the *jatropha* has several advantages, eventually spreading to area development will be determined by whether farmers would cultivate the *jatropha*. Therefore interesting to know how farmers respond to the development of *Jatropha curcas* .L?

Research Objectives

The research objectives are to know: 1) The farmers response to the development of *Jatropha curcas* .L, 2) the factors that affect to farmers response to development of *Jatropha Curcas*.L, 3) farm income *Jatropha Curcas* .L, and 4) the development prospects to area development *Jatropha Curcas*.L.

Benefits Research

The Research of result is expected to provide basic information for those interested in developing *Jatropha Curcas* .L. In addition, the results of this study is

also expected to be useful in the diffusion of innovation *Jatropha Curcas.L* to farmers society.

RESEARCH METHODS

This Research conducted in Katibung Sub-district, South Lampung, Lampung Province. The research was conducted from April-October 2009. The data was collected through interviews and Focus Group Discussion (FGD). Respondents were selected purposive and many as 60 people. The data were analyzed using *path analysis methods*

RESEARCH FINDINGS

Farmer response to an innovation has been influenced by various factors. One of the factors influencing the response is farmers characteristics. Based on the research that respondents have a low education level (SD), experience in a long time farm business (20 years), land owned are large, low household income, low education level, less cosmopolitan, and low participation in group activities.

Although the government's attention to the development of *Jatropha Curcas.L* increase, but the farmers response in Katibung less effort to the development *Jatropha Curcas.L*. The low farmers response to development *Jatropha Curcas.L* caused by no realization of the cost for maintenance *Jatropha* and marketing product difficult and low production price (in the 2005 year only Rp.500,00/kg, and in the 2008 was only Rp. 1000/kg). Thus, despite of the government's attention to development *Jatropha Curcas.L* increased, but farmers response are unhappy.

Advantage is relatively small from farm business *Jatropha Curcas.L* ($R/C < 1$) was also affected willingness extension officers to disseminate the *Jatropha Curcas.L*. In addition, the marketing agency that has not been available, the low price of production, and competition with the other farm business also affected to *Jatropha Curcas.L* area development. Therefore based on the facts that were found most farmers had a "business orientation" (semi-commercial).

From 2005-2008 year, diffusion of invasion *Jatropha Curcas.L* cultivation was increase but since 2009 seen decrease caused by the development of other

commodity market prices . The factors as advantage is relatively small, price product of low, and marketing agency not been available caused of "prestige" *Jatropha Curcas. L* decline. Thus Scott (1983) opinion who said that the farmers most attention "subsistence security " were to be found this research. As one example, to produce 1 liter of oil required *Jatropha Curcas. L* seed approximately 4-5 kg whereas to produce 1 liter of oil need the amount of labor very much, since from plucking fruit from the tree, drying, pressing, and so on. Therefore if the price product of *Jatropha Curcas.L* only 1000,00 - Rp. 1500,00/kg as this present moment, it is still far from the expectations of farmers. The farmers said that the price of *Jatropha Curcas.L* seeds Rp.5000,00/kg are enough. Details of the development of the planting area *Jatropha Curcas. L* in the Babatan village, Katibung district, South Lampung reGENCY of the year 2005-2009 can be seen in Figure 1.

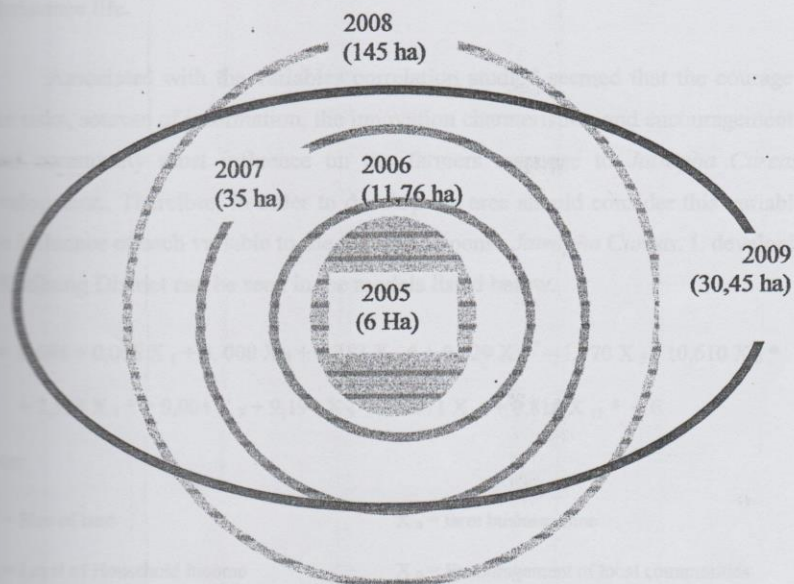


Figure 1. Development Area planting *Jatropha (Jatropha curcas. L)*

in the Babatan Village, Katibung, South Lampung

Base on the Figure 1 was that the amount of the total area *Jatropha Curcas.L* planting shows a decrease. This fact indicates that the farmers response to the development of *Jatropha Curcas .L* unhappy. The Farmers response are low influenced by many factors. The research result shown that the characteristics of innovation is more influential, but the characteristics of farmers, the social interaction between farmers, the comparative advantage innovations, marketing products, and government policies had influenced to farmers respond to *Jatropha Curcas.L*. area development. Thus in this case, the diffusion of innovation *Jatropha Curcas.L*, it seems must be considered the characteristics of innovation, the system of cultural values in the society, the characteristics of farmers, availability of institutional linkages and marketing of innovations introduced, and farmers' response to these innovations. However according to a study done has been that farmers response to *Jatropha Curcas.L* area development is correlations with the needs of farmers subsistence life.

Associated with the variables correlation studied seemed that the courage to take risks, sources of information, the innovation charateristics, and encouragement of local community most influence on the farmers response to *Jatropha Curcas.L* development.. Therefore, in order to develop the area should consider this variables. The influence of each variable to the farmers response *Jatropha Curcas. L* developing in Katibung District can be seen in the models listed below.

$$Y = 0,694 + 0,006 X_1 + 0,000 X_2 + 1,712 X_3^* + 0,729 X_4^* - 1,470 X_5 - 10,610 X_6^* + 7,594 X_7^* + 0,004 X_8 + 9,194 X_9^* + 0,071 X_{10} + 0,818 X_{11}^* + \epsilon$$

Note:

X₁ = Size of land

X₈ = farm business time

X₂ = Level of Household Income

X₉ = Encouragement of local communities

X₃ = The courage to take risks

X₁₀ = Level farmers of cosmopolitnness

X₄ = Participation in the group

X₁₁ = extention agricultural activities

X₅ = activity for new ideas

Y = Diffusion of Inovation *Jatropha Curcas.L*

X₆ = Sources of information

* = Significant at the 95% confidence level

X₇ = The characteristics of innovation

Based on the above analysis it appears that the courage to take risks, farmers' participation in group activities, activities look for information and new ideas, sources of information, the characteristics of innovation, encouragement of local communities, and extension activities is very influential on the farmers response to *Jatropha Curcas*. L development. But if viewed from the aspect of regression coefficients (which means show these variables influence the amount of the diffusion of innovation) it appears that risk-taking variables from the farmers, the characteristics of innovation and encouragement of local community most influence to the farmers response to developing *Jatropha Curcas*. L farm business..

CONCLUSION

The research result showed that the courage to take risks, farmers' participation in group activities, activities look for information and new ideas, sources of information, the characteristics of innovation, encouragement of local communities, and extension activities is very influential on the farmers response to *Jatropha Curcas*. L development. Therefore, in order to develop the area *Jatropha Curcas*.L should be consider this variables.

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