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**The Second International Conference on Environmental Geography  
and Geography Education**



# PROCEEDINGS

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University of Jember  
Jember - East Java - Indonesia

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## Benefits of literacy information against improvement of mushroom agriculture in Rambipuji, Jember District

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## Benefits of literacy information against improvement of mushroom agriculture in Rambipuji, Jember District

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**Abstract.** Agriculture is the most important sector in economic life in an area. Jember Regency is the area with the largest agricultural area. One of the agricultural products in the Jember region is Mushroom. The mushroom cultivation system is very dependent on the season so that it results in instability of farmers' income. This study aims to determine: 1) The condition of mushroom farming communities in the Jember area; 2) how the benefits of information literacy for mushroom farmers. This research uses descriptive research method with a qualitative approach. Determination of informants using the Snowball Sampling technique. In this study data collection using the method of observation and interviews. The object of research chosen was farmers who had used agricultural technology and modernization through a literacy approach. The results showed the pattern of mushroom cultivation using modernization techniques and the use of appropriate technology to maximize agricultural yields and sales of mushroom production. Through information literacy, mushroom farmers can gain new knowledge. The results obtained through information literacy in the form of knowledge about agricultural modernization, agricultural technology and implementation of information in its application in agriculture, especially mushroom agriculture. To increase revenue and development in the field of mushroom cultivation

### 1. Introduction

Agriculture is the most important sector in growing the economy in areas with an agrarian environment, even agriculture must be the key to poverty alleviation, and can create a source of income and wealth for the community[19];[18]. As an agricultural country with a tropical climate, Indonesia has a variety of agricultural commodities that vary according to the region in each region. An agricultural census conducted by the Indonesian government in 2018 shows 14 percent of Indonesia's population is still below the poverty line. Of the total percentage, the number of poor people is more in rural areas. From the poor population. More poor people are agricultural actors. The number of farmers below the poverty line is 26 million households[4];[7]. In a Berdesa online media publication, development planning minister Bambang Brojonegoro said the main factor causing the high level of poverty of farmers was the problem of limited land ownership[25]. The average land ownership owned by farmers in Indonesia is less than half a hectare. So farmers can not maximize their income, and it is very difficult to change into a modern agricultural system and industry as happened in developed countries. Another driving factor that causes a lack of productivity among farmers is that farmers generally do not have the awareness and knowledge of the methods and development of modern agricultural technology [18]. As happened in India, farmers in India are people who are still in a low education condition and are mostly illiterate. So they cannot compete with a rapidly changing environment, which causes their productivity in producing food to be very low. When compared with the situation in Indonesia, farmers in Indonesia are also almost the same as in India and other Asian countries. The average person involved in agriculture is those who have low education, so it is very difficult to accept change and unable to compensate for changes that are very fast in the modern era like today. In advancing the use of technology, efforts that have been made by the government are, by implementing an intensive extension program carried out to farmers.

Indraningsih, explained that the implementation of counseling held by the government so far still tends to lead to technology transfer, so farmers are still very limited in their awareness in utilizing the





technology[17]. From this case, the implementation needs to be shifted towards empowering farmers by providing technology and information by the needs and abilities of farmers in each region. This is following the statement of Powel which explains that the concept of change in agriculture has a high level of risk, therefore if you want to create a change in agriculture must be based on changes in the environmental conditions of the community and educational environment so that the hope for the creation of these changes does not cause conflict, and can be accepted by the community. Information literacy is part of community empowerment activities in the information field.[16]

Information literacy is the ability to seek to evaluate and use abilities and skills [17]. In fact, according to Sokoyo, it was also said that the ease of obtaining information can only be beneficial if the farmers are aware and independent to find information that is useful for the agricultural activities they practice.

Jember is one of the regencies where the majority of the population lives as farmers. From the data released by the Central Statistics Agency (BPS), it was explained that the livelihoods of the people in the Jember Regency mainly in the Rambipuji sub-district were in the agricultural sector, which was 49%. This shows that the agricultural sector is the biggest supporting sector in the level of the population's economy. Based on data released by BPS in 2018, the economy of the Jember district has increased by 5.51%. With the rate of increase, there should be a significant economic change in farmers.

The significant change referred to is the stable economic income obtained by farmers so that they can fulfill their daily needs adequately. That way they will be able to say prosperous. But in fact, the instability of income earned by farmers still occurs. One of the farmers who experienced this was a mushroom farmer. Where the condition of income instability is very common when experiencing a season transition. In fact, not only did they not get anything but even the losses which they also obtained. It is not uncommon to return the initial capital they must owe to the bank to be used as initial capital.

The failure of their harvest is one of the factors due to the uncertain season so that it will have an impact on the results they get. Besides, the mindset they have is also still difficult to be invited to develop and progress. Whereas the changes and developments that will occur later will make it easier to increase the yield of mushroom productivity. With these problems, the development and condition of society will not be able to change.

## 2. Methods

This research uses descriptive research method with a qualitative approach. The data used in this study are primary data and secondary data. Primary data obtained by in-depth observation and interviews, while secondary data obtained through documentation. Determination of informants using the Snowball Sampling technique. The object of research chosen was farmers who had used agricultural technology and modernization through a literacy approach. This research was conducted in June 2019 and located in Rambipuji District, Jember Regency.

## 3. Results and Discussion

### 3.1 *The Condition of Mushroom Farmers' Communities*

Jember Regency is a regency in the province of East Java, is a regency with a diverse topographic area, flanked by several volcanoes around the district. The land contours in this district are mostly filled with lowlands. So that the economic activities of the people of Jember Regency are more in the field of agriculture, both in the fields of rice farming, animal husbandry, fisheries and agriculture in the dry land sector.

Agricultural systems that are still applied in various regions use more agricultural systems that depend on the season. Farmers in this area are the same as farmers in general. Namely, he still stands firm on his stand and closes the development of the era. The system applied by them and the tools used by them is still traditional. In the field of marketing, farmers are still very traditional, when after harvesting, farmers will sell their mushroom agricultural products directly to the market and by involving several relations to help sell in several markets outside the region. Problems occur when the sale proceeds that are not sold, so the agricultural products must be returned to farmers who plant. Also, farmers have to wait for the harvest season until some time so that they can get income. From these problems, problems arise in the field of farmers' economy.

When talking about economic problems, we will also discuss welfare. One's welfare can be measured as one of them with income. Income obtained by mushroom farmers per 3 months and once a mushroom harvest can produce approximately Rp. 3,600,000 per 3 months so in one month they have an income of approximately Rp 1,200,000. From this income can be measured from the burden of the family he bears. If it is measured using KFM (Minimum Physical Needs), then there are 5 family members. The KFM formula is  $\text{Kg Rice} / 12 \times \text{JAK} \times \text{HB}$ . KFM calculation as follows:

a. Poor:  $320/12 \times 5 \times 11,000 = \text{Rp. } 1,467,000$ .

b. Very Poor:  $240/12 \times 5 \times 11,000 = \text{Rp. } 1,100,000$

c. Poorest:  $180/12 \times 5 \times 11,000 = \text{Rp. } 825,000$

So the farming community in this place is still classified as poor. To be able to change their economy and well-being they need a change. One of the bridges in achieving change is through a literacy program.

### *3.2 Benefits of Information Literacy for Mushroom Farmers*

Agriculture is one of the vital objects in the economy in the agricultural region. Awareness of the use of agricultural technology needs to start from within the farmers. Without this awareness, farmers can't innovate and renew their production. If farmers do not have this awareness, then to apply a breakthrough in agriculture will be very difficult to achieve.

Literacy in agriculture is the process of finding information to be applied to production activities to the marketing of agricultural products. In Coleman's opinion, some people can use information optimally and some are not. So, even though the knowledge is the same, there is no guarantee they will choose the same options, and will not behave the same[2]. The level of education received by farmers in rural areas is the most important factor in increasing agricultural productivity [9]. Education level is very influential on the ease of access to information obtained by farmers, and the challenges in accessing information are also influenced by the awareness of farmers. That awareness is supported by the willingness of the farmers to make changes. Solomon revealed that to gain an awareness of change farmers would accept a change if it was influenced by factors of innovation, biophysics, technology, institutions, and sociodemography[20]. Yi hua revealed that farmers to be willing to accept change requires a lot of time and money to get a change and innovation[24]. If innovation brings significant changes, it will be followed to pursue more recent agricultural knowledge. As has been done by several mushroom farmers in the Rambipuji sub-district, Jember district. On a small scale, mushroom farmers in the Rambipuji sub-district have begun to make changes to support the agricultural activities they are engaged in, namely by the literacy method. Based on observations in the field with farmers who have applied literacy to support their agriculture as follows.

#### *3.2.1 Mushroom growers*

Mushroom is a fungus that can grow in the residue of burning rice straw. In this study, researchers took 5 sources of research on mushroom farmers. Of these five farmers, four are members of the mushroom farmers group, and one person is the head of the mushroom group. At first, the farmers who became the resource persons were rice farmers with a rental system. but farming in this way can only make the family economy enough to make ends meet. So that in 2014 through various information. Farmers in the mushroom farmer group in Rambipuji are starting to be interested in switching to producing more modern mushroom mushrooms because the production process with a short harvest takes a short time. However, agriculture carried out at that time was still very simple. Namely by stacking the remains of straw that have been partially burned in the land he rented, then watered and then covered using plastic sheeting.

The theory of rationality put forward by Samuel Popkin states that farmers are individuals who have an autonomous ability to make rational decisions on various choices in doing business. In its development, the occupied mushroom farming system began to change since the farmers got information on how to cultivate a new mushroom farming. After getting this information, there is an interest in applying the agricultural modernization to be applied to the agricultural system that is being worked on. Thus begins the process of finding information at a later stage. Using supporting media either through YouTube, websites to relevant print media. After feeling confident with the information obtained, a trial process was started to make the straw mushroom farming more modern, namely by using a multi-story warehouse model using a hot water blower as evaporation that has been given

mushroom seeds. After waiting for about 14 days, the mushrooms in production have begun to be harvested without waiting for the change of seasons such as traditional mushroom farming.

When the farmers have implemented a literacy agriculture program by forming a joint farmer group and sharing information and modernizing agricultural techniques, their economic levels will gradually improve. This can be proven from their income from the initial income of only Rp. 1,200,000 to Rp. 2,000,000 - 3,000,000 apart from the economic point of view their minds have become more open. So farmers are willing to accept new things in the development of skills and the economy

#### 4. Conclusions

Agriculture is the biggest economic contributor sector in Indonesia. In the Jember district, the main population is the majority of people with a search for agriculture. Agriculture is the main livelihood that almost half of the population living in the Jember Regency is involved in. With the innovation in agriculture, it is expected to contribute to higher income. The innovation arises from farmers who have carried out literacy activities as their needs for the development of information technology in agriculture. Farmers who have used literacy activities are aware that information needs are a basic need to develop their potential to compete with a more modern world. Through this literacy activity, farmers can search, filter and apply the information obtained so that it is useful for their needs. By utilizing the literacy activities of farmers become aware that the backwardness of agriculture that they once wrestled was due to lack of access to information, and farmers more limited themselves to the development of new knowledge in agriculture.

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