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THE DEVELOPMENT OF FARMER AGRARIAN LITERACY IN FACING CHANGES IN TIMES (SAMPLE FRAMEWORK IN NGAWI REGENCY)

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ABSTRACT

Increased infrastructure development has significantly impacted world agriculture, generally in Indonesia and particularly in Ngawi Regency. Due to the narrowing of agricultural land is an unavoidable necessity. It can be seen in the annual loss of agricultural land due to the eroded flow of development, which will doubt harm agricultural production. Because the agricultural land is decreasing, achieving food self-sufficiency in the world in the coming years will be difficult. The fact is the cause of the narrowness of agricultural land for infrastructure development. In addressing the issues mentioned above, research into the knowledge/literacy of farmers in the Ngawi Regency is required; specifically, developing farmer knowledge will enable farmers to continue farming. According to the research's findings: 1. Farmers have a deep understanding of agriculture; 2. they mostly learn from their parents, the internet, and neighbors; 3. Farmers learn about pest and disease cultivation and marketing aspects from the internet.

Keywords: Ngawi, farmer literacy,

INTRODUCTION

Increased infrastructure development significantly impacts world agriculture (Bacior & Prus, 2018), including Indonesia generally and Kabupateng Ngawi particularly. The narrowing of agricultural land is kinetic that cannot be denied. It can be seen from agricultural land, which is increasingly reduced every year because it is eroded by the flow of development (Putri, 2016). It certainly can harm agricultural production. Because agricultural land is increasingly reduced, the possibility of the next few years for food self-sufficiency in the world will be challenging to fulfill (Simelton, 2011).

The narrowing of agricultural land is a broad decline and land volume, making it less suitable for large-scale agrarian needs (Utami et al., 2019). Agricultural land is reduced by 200,000 ha/year. As said by the BPS (2018), rice fields' raw land area continues to decline. In 2018, the land area was only 7.1 million hectares. This number considered decreasing compared to 2017, which was still 7.75 million hectares (Indonesia, 2020). The decline in agricultural land impacts the many people looking for jobs and residences in the city as Bappenas said that based on differences in the rate of population growth of urban and rural areas (Urban-Rural Growth Difference / URGD), the urban population continues to increase. Between 2015-2020 is predicted to increase urbanization from 53.3% to 56.7%. In 2035 it was projected to be 66.6%. The urbanization rate of Indonesia is the highest in Asia (Hayyu, 2020).

Various attempts have been made to halt agricultural land conversion. As stated by the Head of BPS that one way to take advantage of land conversion is to provide incentives to farmers who maintain their agricultural land (CNN Indonesia, 2020). However, this method cannot solve the problem. Urbanization and professional change continue yearly (Swastika, 2014), (Astuti et al., 2020). Efforts to overcome the problems of the profession of farmers tend to be underestimated by the community (Harsono, 2009). The number of farmers is decreasing, and the number of other professions increases every year. Non-agricultural professions such as trade and industrial labor become a preference for the urban communities (Swastika, 2014), (Astuti et al., 2020).

In overcoming the problems above, it is necessary to study farmers' agricultural knowledge/literacy in Ngawi Regency. Farmer knowledge is directly proportional to the increase in agriculture human resources. The increasing human resources in the agricultural sector are expected to increase farmers' economy in Ngawi Regency and the country obtained from the agricultural sector. In addition, it also has an impact on the welfare of farmers. If the welfare of farmers increases, career shifting to other industries may be avoided. The reduced career shifting will maintain the agricultural land

to be sustainable.

MATHERIAL AND METHODS

This research used a qualitative approach that extracting data to understand the social phenomena based on a comprehensive (Holistic) analysis formed by words and obtained from a natural situation. Yin (2002) The research was conducted from May to November 2021. The number of respondents in this study was 54 people and selected respondents using the snowball sampling method. The data analysis was conducted using the descriptive analysis method to observe the phenomenon of the literacy development of farmers in the Ngawi Regency.

RESEARCH RESULTS AND DISCUSSION

The Education Level of Respondents

Based on the interview, most of the farmers in Ngawi Regency who were our respondents had a high level of education, namely high school. The high level of education is expected to become capital for agricultural development in Ngawi Regency. It will be much easier for the government to provide directions (Movahedi & Nagel, 2012) and introduce technology to farmers. However, this information should be re-checked against local government data to ensure that most farmers have completed high school.

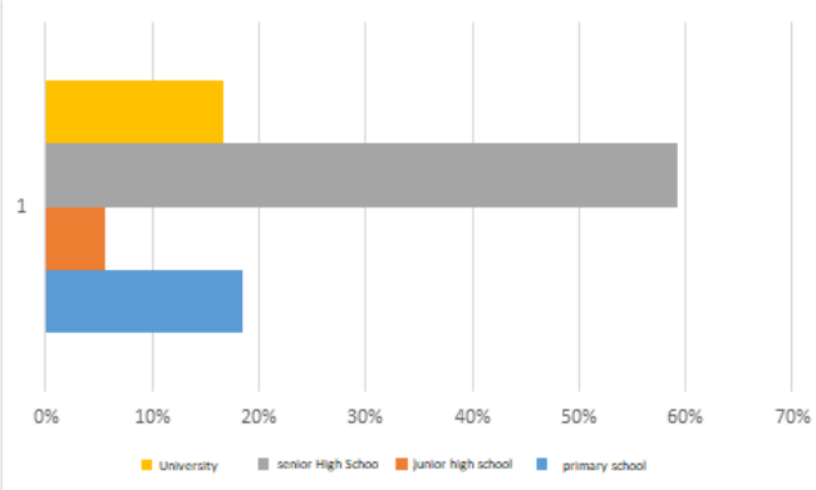

Figure 1. The education level of respondents.

The Ability of Farmers to Read and Write

Based on the findings from both offline and online interviews, most or all of the farmers could read, so the average farmer in Ngawi Regency is literate. So that government will find it easier to conduct counseling and provide information related to developed technology. The reading ability possessed by farmers should utilize various channels in extension activities, both audio and visual. It can also be in simple writings in pamphlets/brochures that are understandable for farmers. With this reading ability, the extensions in simple writing or pamphlets/brochures are effective during group meetings (Pertiwi & Saleh, 2010). For instance, providing pamphlets/brochures for instructions on using pesticides, safe use pesticides, post-harvest processing, simple technology in agricultural land management, technology for handling pests and diseases of mice, and technology in handling natural enemies such as snakes and snakes, birds of prey, also known as owls.

The government can use simple technology in carrying out extension activities by using audio and visual media (Simamora, 20119). Local governments create specific YouTube channels that their extension workers prepare and are expected to develop content related to agriculture. For example, pest and disease management content can be directly disseminated to farmers via their Whatsapp groups or

played during the activity, followed by some explanations (Eksanika & Riyanto, 2017) that the internet can provide a wealth of information. This method will run very effectively, and farmers will easily understand the materials. Furthermore, farmers can learn anytime, anywhere by clicking the provided link.

Figure 2. Chart scattering ability to read and write farmers

Simple Calculation Ability for Farming Calculations

Related to the ability/knowledge of farmers with their farming calculations (Phahlevi, 2013). The researchers said that the farmers have already understood that they experienced loss. According to the data, 64% of respondents know they lose money when planting certain commodities in certain seasons; for example, farmers will experience a loss due to the costs and yields of BEP results. Farmers continue to do farming because they can still make a profit. For example, grass and straw can be used for their livestock or sometimes fill up their spare time. However, some farmers don't understand the calculation. About 35% of them say that the essential thing is planting and that they may be profitable but can't calculate it mathematically. They don't keep track of how much energy they use daily. The farmer calculates the amount of capital he sells, but if he does, he loses (Panurat et al., 2014).

Even though the loss remained, there was no other job, or they were old enough to continue farming for daily activities. The data from this research is sufficient about the loss of farming is still global, so it is necessary to do more detailed research on the farming calculation. Is it true that their farming business is profitable? Is it true that their farming business is losing? With the HPP calculation, the researcher only looks at it from the point of view of knowledge whether they know that their farming business is profitable or losing (Sugianto & Salfarini, 2020).

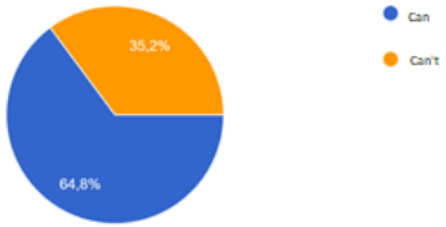

Figure 3. Simple calculation ability for farming calculations

Knowledge of Agricultural Local Terms

The knowledge of farmer related to agricultural local terms is excellent. They have already known many terms used in managing the farm (Tandur, Matun, Bero, Maring, Rendeng, Mongso). They use those terms everyday so that they master the terms well. This recent reseach recomend to keep the local terms as the wealth of agriculture. If those terms disappear, it may be a big problem because those terms have the characteristics and knowledge of the farmers (Mulyoutami et al., 2004). It will become a problem if local agricultural literacy or understanding local knowledge is lost. Farmers have much local knowledge, which is fading due to external entry technology, which removes farmers' local knowledge. Local knowledge usually directs environmentally friendly agriculture than the Sindang community in handling insect pests by burning the branches (Ansiska et al., 2020). It is an example of local knowledge that must be maintained to support local literacy. The agricultural efficiency will emerge when the efficiency of the question arises if we discuss self-sufficiency and the welfare of farmers. Local knowledge will be one of

the drivers of increasing farmers' interest and independence because the production costs do not have to be purchased. However, farmers must now buy all agricultural production costs (Nugraheni, 2015)

Figure 4. Knowledge of agricultural local terms

Internet operation

The internet operation is related to the knowledge of farmers in modern times. Farmers have begun to interact with the virtual world/internet. Many of the farmers have started using Facebook, YouTube, etc. Farmers, whether young or half-old, have used the internet. The internet will then be very familiar to the younger farmers (Eksanika & Riyanto, 2017). From the data, I collected farmers who already understood the internet. Approximately 87% and 13% stated that they had not known the internet. They are aware that most farmers' access to the internet is limited to WhatsApp and that young farmers are already familiar with Facebook and YouTube. Farmers will learn about shipments from Facebook friends through the media. However, there is no denying that farmers have yet to contact the Internet (Delima, 2016). Farmers who do not have access to the internet are typically elderly or unable to afford these services.

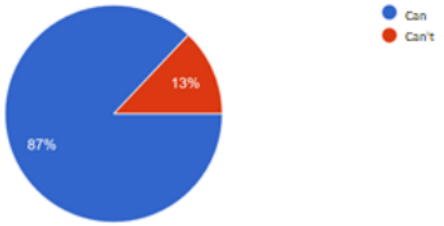

Figure 5. Internet operation knowledge

Internet Usage

According to the data, most farmers (46.3%) used the internet to socialize in line with the previous discussion of the use of WhatsApp and Facebook (Prabowo & Arofah, 2017). Additionally, the respondents said they could learn certain things and recognize the agricultural market from the socialization activities. Respondents specifically explained that farmers used the internet for farming activities (22.2%). It was encouraging that 9.3% of the farmers also made sales via the internet. Using the internet in sales has not yet reached 10%, but this is a forerunner to the future use of the internet for farmers in Ngawi Regency as a medium of agricultural product marketing. Internet-based marketing to introduce agricultural products outside the Ngawi Regency and abroad. The internet will make it easier to use and prevent middlemen from playing prices to be more prosperous (Prayoga, 2015).

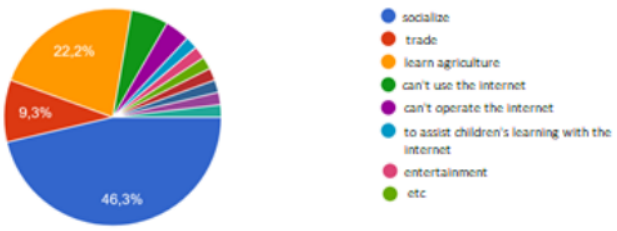

Figure 6. Internet usage for farmers

How farmers have been studying agriculture

In this section, the farmer said they studied agriculture from anywhere and generally from their parents (74.1%). They follow their parents working in the fields (Anwarudin et al., 2020). Young farmers also experienced the same by learning directly from their parents. Secondly, they studied agriculture from the extension agents (18.5%), including the extension activities, the plot demonstration, regular meetings, and farm tours. Farmers expect the intensity of learning from extension workers will also be increasingly more significant in the future. They hope their agricultural products will increase along with their knowledge. Next is learning from the internet, friends, and neighbors.

Interestingly, the Internet has started to be a learning medium for Ngawi Regency farmers. The percentage will increase when farmers are more familiar with the Internet in the future. Farmers who have begun to open and learn from the Internet will be able open up their minds on applying new technology to improve their agricultural business by using all learning media available on the Internet, both domestically and internationally (Mulyandari, 2011). If the infrastructures that support farmers are open in the future, they will learn faster and be more enthusiastic about the development of agricultural businesses. Then, a campaign promoting local wealth must be done to preserve the local characteristics and wealth passed down from generation to generation by their parents.

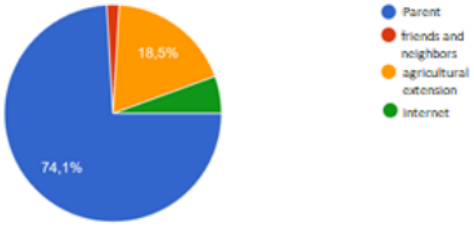

Figure 7. Farmers Learning Resources

Knowledge learned by the Farmers from the internet

This research sharpens the questions to farmers who use the internet by asking what knowledge they learned through the internet. 74% of respondents stated that they specifically learned about cultivation, 18% of respondents learned about controlling pests. They also learned how to make fertilizers while learning about agricultural products marketing. Similar to the research results from Prawiranegara (2016), 32% of farmers managed information as a benchmark in a farmer's business. In short, farmers are still struggling with production but lack knowledge, and only a few are learning about marketing. It is due to the lack of marketing skills learned directly from the internet (Apriliani et al., 2021). The internet is expected to create a new market for farmers by connecting farmers and buyers (Aprilliyanti & Riyanto, 2020).

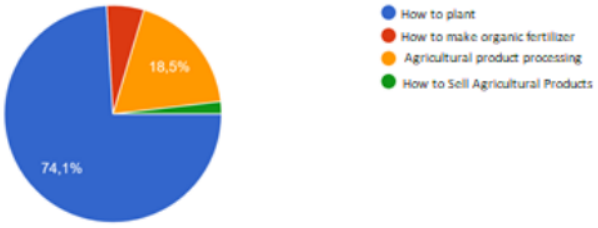

Figure 8. Knowledge learned from the Internet

CONCLUSION

This study provides three conclusions. First, farmers already had excellent agricultural literacy. The reading and writing ability proved by 100% of farmers can read and have simple calculation knowledge in agricultural products. 65% of farmers can calculate 35% cannot count. Next, the local knowledge that farmers have. Most farmers learn from parents (74.1%), extension activities (18.5%), the internet, and friends. The third conclusion is that they have started to learn about agriculture by using the internet. The knowledge gained from the internet includes cultivation (74%), post-harvest (18%), and also marketing (9,3%). The majority of them are still having difficulty with cultivation. So that, in the future, it needs to be developed to help the farmers learn and gain much information about marketing agricultural products over the internet.

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