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Characteristics of Coastal Farmers in Kulonprogo Regency

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ABSTRACT
The study explored the characteristics of coastal farmers in Kulon Progo Regency. It emphasized the issues of the socio-economical arrangements of farmers in marginal and resource-poor area and the access of farmers to productive capital. The research will contribute to development practitioners and policymakers in prescribing the context-specific policies and programs. In doing so, the research aimed at exploring the characteristics of coastal farmers in aspects like age, educational level, farming experiences and monthly income, as well as uncover their access to productive capital. The data came from a survey carried out using a questionnaire-based field interview, which adopted and used a simple random sampling method to select 60 respondents. The result of this research showed that the average age of coastal farmers is 43.2 years. In majority, farmers went to school for 10-12 years or were graduated from high school. Besides, 86.53% of the farmers had more than 10-year experience, which indicated that farming in coastal areas was profitable. The average monthly income of coastal farmers was 6 million rupiahs during peak season. Chili, the most profitable crop, contributed as the primary source of income, mostly when the selling price was high. Access to land, livestock, transportation (motorbike), extension services, internet and informal institution were considered high and remarkably high, while access to four-wheeled transportation, credit and formal institution (farmers' group) were medium and low.
Keywords: access, coastal area, farmers' characteristics, marginal land

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INTRODUCTION

Many smallholder farmers in developing countries face various challenges in technical or socio-economical aspects of farming. Farming in marginal areas is definitely a challenge for a farmer. Rarely do rural development programs assessing the socio-economic characteristics of these marginal farmers before disseminating programs. The critics on the typically top-down government's programs that neglecting the socio-economics characteristics of farmers have

been widely sounded (Bellon et al., 2020; Roitman, 2016; Welker, 2012).

Coastal Kulon Progo is one of the marginal farming areas. Located in the coastal area in south Kulon Progo, the farming area was once an abandoned area. Before the area was cultivated for the first time in the 1980s, those living in coastal areas were considered poor. After various attempts to improve soil quality and land consolidation, the area became a productive asset for the local community (Subejo & Mewasdinta, 2019). However, as a marginal area, both socio-economical and technical challenges remain or even more complicated.

As calculated by IFAD (2016) the agricultural and marine sectors are the main source of income for more than one-third of the population and also for almost 60 percent of the poor. These households live with less than 2 USD per day and are vulnerable to different external shocks. They live mostly in a rural area, where the poverty rate is around 62.7 percent of the total population. Without adequate access to productive capital, these resource-poor households will be trapped under the poverty line, leading them to somehow overexploit natural resource for survival. However, not all of them exploit the environment, but many of them actually perform highly efficient livelihood system, making the limited natural resource available for them. Coastal Kulon Progo, with its resource-poor and marginal environment, might shape the socio-economical characteristics of farmers.

Hence, it is interesting to explore how communities like farmers in coastal Kulon Progo make use of scarce natural resources. Moreover, the discussion related to natural resource management is often related to who can access the natural resource, who win and who loses. Discussing about which part of the rural communities benefited from their farming activities might contribute to assessing which policy and development programs that effectively affect them. On the other hand, knowing who were left behind might also help to indicate the programs or policies were not significant. Ribot and Peluso (2003) describe access as 'the ability to benefit from natural resource – including the material object, persons, institutions, and symbols' (p. 154).

Empirical studies on the characteristics of the coastal farmers are still limited, as most studies still solely explore farmers in general. This research emphasizes the issues of the socio-economical arrangements of farmers in marginal and resource-poor areas, which offers the novelty of the research. The research will contribute immensely to development practitioners and policymakers in prescribing the context-specific policies and programs. In doing so, the research aims at exploring the characteristics of coastal farmers in aspects like age, educational level, farming experiences and monthly income, as well as uncover their access to productive capitals.

METHODS

The data came from a survey carried out in 2019 at coastal area in Kulon Progo Regency. Statistics of Kulon Progo

Regency (2020) reported that the most populous agrarian community in the coastal area was in Panjatan District (8,065 out of 73,183 farmers) and thereby, Panjatan was potential in representing the characteristics of human resource in Kulon Progo. Three villages located in the coastal area, namely Bugel Village, Garongan Village and Pleret Village were selected as research locations because the coastal area located in the three villages. All information was gathered using a questionnaire-based field interview. A simple random sampling method was adopted to select 60 respondents comprising of 20 respondents from each village.

In exploring the research objective, a descriptive method was applied. Here, the information from primary data, secondary data and literature were collected and analyzed using the method. By utilizing the descriptive method, the researcher collected specific information about the situation, social problems, as well as the relationship between phenomena so the researcher will comprehensively explore the research objects (Neuman, 2009). The primary data was collected from the survey, while the secondary data was collected from Statistics Indonesia in the regional level.

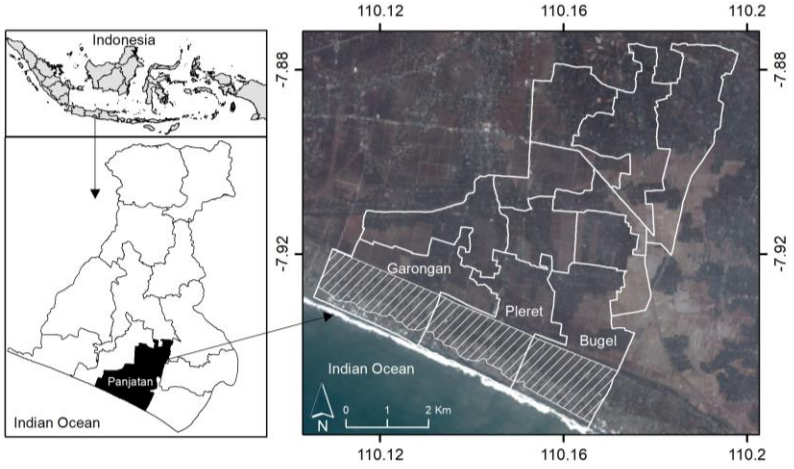

Figure 1. Map of Site Location
Source: Author (designed in ArcGIS)

RESULTS AND DISCUSSION

Characteristics of Kulon Progo Coastal Farmers

Coastal farmers in Kulon Progo mainly own dryland and grew horticulture products. However, some areas located in the north of South Corridor Great Post Road were wetlands which suitable for staple crops. Most of the farmers cultivate their lands three times a year. Wetlands were cultivated rice during rainy season and early dry season and then during

second dry season were cassava, corn and sweet potato. Those who own dryland grew horticulture such as chili, watermelon, cantaloupe, tomato and eggplant.

Besides the economic reason, growing horticulture products has been socially embedded in coastal farmers' everyday life, passed down from generation to generation. In the 1980s, started by simple farming techniques, farmers cultivated abandoned and marginal areas in south Kulon Progo. From the persistent efforts through irrigating and fertilizing, coastal farmers were able to amend the marginal soil condition into relatively healthy soil. Thus, after a long battle of managing the soil quality, farmers consolidated the coastal land to manage the land use and distribution for the coastal communities. According to Subejo et al. (2019), the coastal areas in Kulon Progo are part of Sultan Ground and Paku Alaman Ground, the royal family in Yogyakarta, but the land is widely known in Kulon Progo as a 'common resource' where locals can make use of the land and the resources to sustain their livelihoods.

The coastal areas are located next to the South Corridor Great Post Road, the historical road built during Daendels' rule that runs across Java. When the auction market systems for chili were introduced in coastal Kulon Progo, buyers from across Java could easily access the location.

Age

The demographical aspect is a critical aspect of exploring agricultural socio-economics condition. Agrarian society changes over time, so appropriate data and analysis related to the demographical aspect are vital in interpreting the dynamics of rural life. Exploring the structural change of farmers' age, for example, might beneficial for exploring rural issues such as farm succession and agriculture productivity. The result shows that the average age of coastal farmers was 43.2 years. In Indonesia, according to BPS (2018), most farmers were above 40 years old.

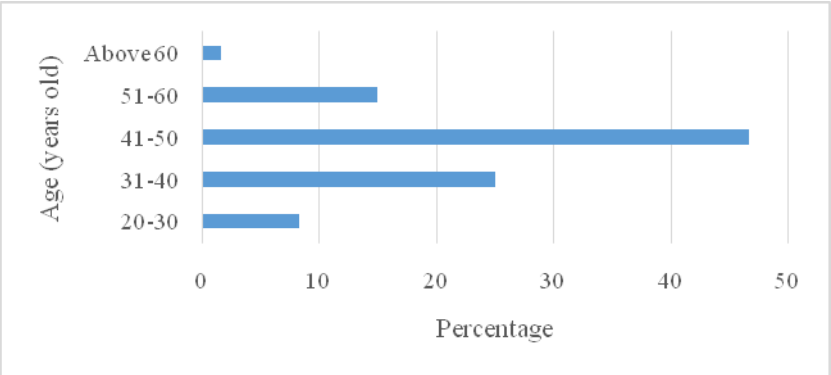

Figure 2. Characteristics of Coastal Farmers based on Age
Source: Field Research (2019)

The data on Kulon Progo shows that most farmers were old enough and succession might be an issue in the near future. The issue related to the regeneration might be problematic if the succession does not take place.

Figure 1 also shows the clustered bar of the age distribution of coastal farmers in Kulon Progo. The farmers' age is divided into five categories. It illustrates that most farmers (46.67 %) were between 41 and 50 years old. This research also identified that 25 percent were between 31 and 40 years old, resulting in the total percentage of farmers under the age of 50 reached 80%. Farmers under 50 were considered productive in terms of agricultural investment and physical ability (May et al., 2019; Rigg et al., 2020). However, even though coastal farmers were mostly productive and physically active, in the near future, there will be an increasing number of aging farmers.

Educational Level

Data related to educational level was collected through gathering information about how long farmers go to formal schools. The data on the educational level might reflect the degree to which farmers were able to manage knowledge and information. The formal education of farmers might also reflect the level of human capital in rural development, which contributes to economic growth and political stability (Javed et al., 2008).

Figure 2 shows that farmers who graduated from senior high school comprise 46.67% of all respondents, while those from junior high school and primary school were 33.33% and 18.33%, respectively. Meanwhile, only less than 2% held diploma from university. Considering that more than half of the coastal farmers went to formal school for less than nine years, it illustrates that human resources are still uncompetitive and may result in difficulties in adopting new technologies. As mentioned by Mariyono (2019), the conventional farming practices performed by farmers will make them uncompetitive in the market-oriented agribusiness system.

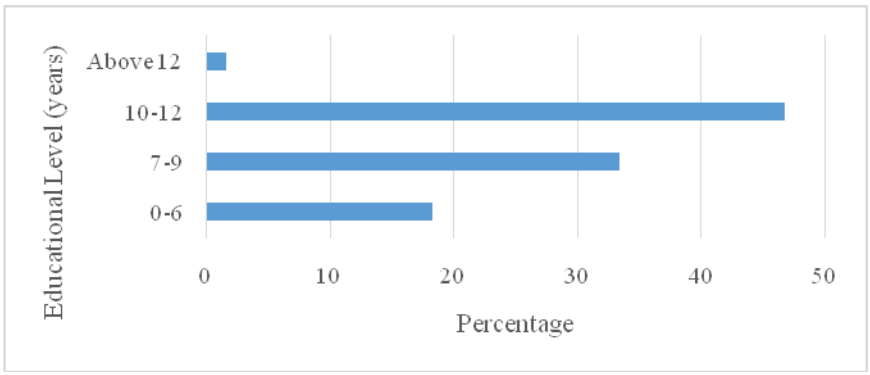

Figure 3. Characteristics of Coastal Farmers based on Educational Level
Source: Field Research (2019)

Farming Experience

Farming experience indicates the process of gaining knowledge and skills from doing farming activities. Exploring farmers' farming experience can be beneficial in understanding how they deal with farming-related challenges and their experience in making a decision to overcome the challenges. About 25% of coastal farmers had long farming experience at more than 40 years. The group was recognized as a pioneer of coastal farmers. Farmers who had farming experience between 21-30 years and between 11-20 years were 32.69% and 28.84%, respectively, while the rest 13.6% had less than 10-year experience. Farming in coastal area has been attractive for generations. Figure 3 shows that in majority (86.53%), farmers had more than 10-year experience, which indicated that farming in the coastal area is profitable. According to Subejo et al. (2019), farming in the coastal area has become attractive for farmers because there were a success and inspiring stories of hard work and perseverance from inspiring farmers. Supriyanto (2013) echoes that the role of local innovators has led more farmers interested in producing various agricultural crops.

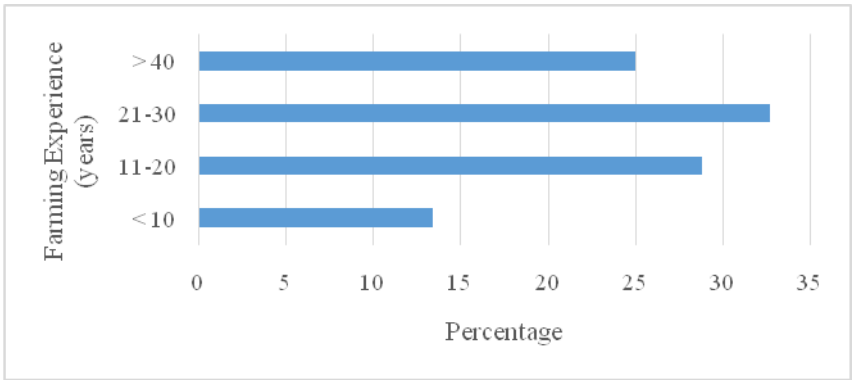

Figure 4. Characteristics of Coastal Farmers based on Farming Experiences
Source: Field Research (2019)

Monthly Income

The average monthly income of coastal farmers was 2.1 million, ranging from 250.000 to 9.1 million. Chili, the most profitable crop, contributed as the primary source of income, mostly when the selling price was high. As presented in Figure 4, almost 50 percent of the respondent had less than determined minimum wage. According to Decree of Governor of Yogyakarta Special Region No. 320/KEP/2018 (2018) the determined minimum wage in Kulon Progo was 1.6 million in 2019. 38.77 percent of the respondents have income between 1.6 and 4 million, while 14.28% were better-off by earning more than 4 million per month. Those earning less than 1.6 million managed a various degree of risks and uncertainty such as harvest loss during low season or because of agronomical issues also price drop.

Most of the farmers who were better-off earned greater income because they joined auction system, where the quality of the selling products and the price were controlled and better than the non-auction. From the interview with better-off farmers, in the recent decade chili was very profitable. The auction market system had somehow helped farmers to earn fair price. The system let farmers to collectively pool chili to the auction building. The auction system also induced farmers to grow chili in a standardized quality, which led farmers to improve farming techniques.

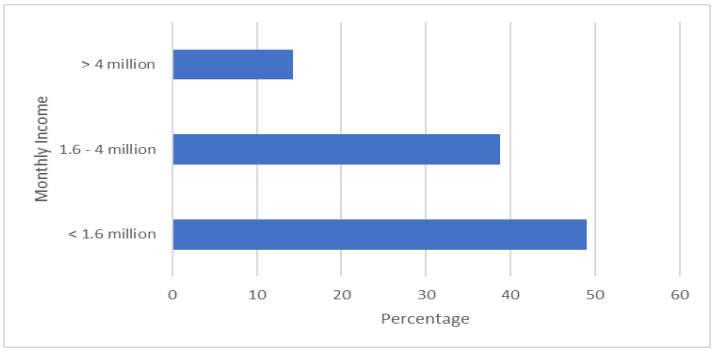

Figure 5. Monthly income of Coastal Farmers
Source: Field Research (2019)

Access to Capital

In the rural context, the assets owned by the agrarian community which plays a vital role in strengthening rural livelihood, are natural capital, built capital, human capital and social capital. Moreover, Mulder et al. (2006) argue that balanced combination of those capitals contributes to the quality life of the community. In this chapter, some access to the vital resource was captured to portray to what extend farmers in coastal Kulon Progo are able to sustain their livelihoods.

Table 1 illustrates the percentage and categories of access to capital. Access to land and livestock, which are included in natural capital was considered high for

the coastal community in Kulon Progo. Access to land is one of the most crucial assets that determine farmers' productivity. Access to land is key factor for the agricultural household that determines farmers' livelihood strategies. Land plays a role as a source of income and thereby is a part of productive capital. Land ownership and livestock ownership were 66.67% and 55%, respectively, and both are categorized high. Land ownership were ranging from 200 m^2 to 6000 m^2, where the average was 2230 m^2. Even though farmers' access to land was high, there were still 33.33% of the community who were landless. Most of them were married women who did not inherit their land from patrilineal families and peasants having no access to land. Those having no access to land worked as paid laborers. Some of the women worked as chili pickers and only earned wages from harvesting. Such conditions correlate to the issues of women working in informal sectors. Unfortunately, informal sectors are often connected to the uncertain employment system, low wages, risky activities and weak protection (Kukrety & Mohanty, 2011).

Farmers' access to motorbike was remarkably high, at 76.67%. The motorbike was considered essential in commuting the field or farmers' meetings. However, farmers' ownership of four-wheeled transportations was low (16.67%). Cars or trucks were considered expensive, and thereby only a few affluent farmers were privileged to purchase cars or trucks. By owning four-wheeled transportation, farmers can transport the inputs or yield in a bigger quantity. Access to the road might also determine the increasing number of people own transportation. According to Subejo and Mewasdinta (2019), during the period of 1996 to 1999, there was a period of land consolidation. Farming roads were constructed so farming inputs and market more accessible.

Adequate financial access is often related to better agricultural productivity as the credit market will allow farmers to smooth their investments. Recent research sums up that farmers' access to credit will make them quickly adopt technologies and have better qualities in health, education and nutrition (Okten & Osili, 2004). From Table 2, the access of farmers to credit was at the medium category (45%). It indicates that not many farmers were able to access credit. Some of them were not included as farmers' group members, so they were not able to access credit from the farmers' group. In the critical period, such as price shock, these landless were in precarious condition as they might not be able to access productive capitals. Other farmers had no access to the information about credit.

Table 1 shows that farmers' access to information through extension services was high at 65%. The result shows that there were still 35% of the population cannot access extension services. Of these populations that were not invited to extension activities, there were women, sons, daughters who were involved in farming activities but did not invited just because they were not the

head of the families. Unfortunately, the extension system in Indonesia still accepts that the head of the household (men or husbands) that were invited to farmers' meeting would pass the information to the members of their family. In reality, not all of them passed the farming-related information, causing the inequality of information within the household. Others who were not invited were landless and wage laborers who were not farmers' group member. They were not listed as members of the farmers' group and thereby, they could not access extension services.

Access to internet was categorized as very high (85%). Farmers nowadays have accessed the internet easily. As the internet connection has been more stable, the cost has been cheaper and the devices more accessible. Internet is a productive resource to gain information related to farming techniques, high-yield varieties and issues on rural development.

Coastal Kulon Progo community can be included as an intentional community where the rural people live communally and uphold the connectedness, solidarity and teamwork. Like other typically rural Javanese communities, solidarity has become embedded in everyday life. The connectedness, as mentioned by Cofré-Bravo et al. (2019) is when a community has an interest in a particular natural resource and then they want to make use of the resources, then social capital is included as a resource or capital to the community.

Social capital is formed in the structures of relations among people that want to make use of a resource. There were various both formal and informal socio-community activities performed by the coastal community in Kulon Progo, such as *Arisan*, *Ronda*, communal work (*Kerja Bakti*), and farmers' groups. The activities in the farmers's groups and informal social institutions were selected to

Table 1. Coastal Farmers' Access to Resources

Access to	Percentage (%)	Category (*)
Land	66,67	High
Livestock	55	High
Transportation (motorbike)	76.67	Very High
Transportation (car or truck)	16.67	Low
Credit	45	Medium
Information through extension services	65	High
Internet	85	Very High
Formal institutions (Farmers' groups)	45	Medium
Informal social institutions	85	Very High

Note: (*) Low (0-25%), Medium (26-50%), High (51-75%), Very High (76-100%)
Source: Field Research (2019)

represent the access to social capital. While the farmers' access to informal social institutions were very high (85%), their access to the formal institution was at medium category (45%). It was more likely that farmers were more interested in participating in informal institutions. Informal institutions were more flexible than formal institutions as they have specific membership criteria. Besides, informal groups had been socially embedded with social norms such as solidarity, kinship, and teamwork. The sanction of absenting from such activities would be excluded from society, so joining the activities might also prevent them from conflicts.

In coastal Kulon Progo, those who accessed the farmers' groups were mostly household heads (fathers), while wives and sons were mostly not members. The locals believed that other members of the families were represented by the head of the family. In this case, women farmers and young farmers might not receive the benefit of government programs and might not be invited to monthly farmers' meetings. Unfortunately, much information provided by agriculture extensions workers was delivered during the meetings. Besides, those who were not able to access farmers' groups were landless who worked as paid laborers. Some critical issues in defining 'farmers' might also result in the exclusion of landless because most definition pointing out that farmers were those owning farmlands.

CONCLUSION AND SUGGESTION

The result of this research showed that the average age of coastal farmers is 43.2 years, showing that aging will become a serious issue if the succession does not take place. This issue might be familiar in recent rural development issues, but if it is not taken seriously, thread related to land conversion might take place. Another important feature is the farming experience. Of the 86.53% of the farmers had more than 10-year experience, which indicated that farming in coastal areas was the main option for livelihood and thus chili farming considered as the most profitable crop. The average monthly income of coastal farmers was 2.1 million rupiahs, but almost half of them earned less than determined minimum wage in Kulon Progo. Chili, the most profitable crop, contributed as the main source of income, especially when the selling price was high. The auction market system had somehow contributed to farmers' increasing prosperity within the last decade. The auction system also induced farmers to grow chili in a standardized quality, which led farmers to improve farming techniques.

Access to land, livestock, transportation (motorbike), extension services, internet and informal institution were considered high and very high, while access to four-wheeled transportation, credit and formal institution (farmers' group) were medium and low. Surprisingly, not many farmers could access credit and be included in farmers' groups. The two interrelated aspects were included as productive

capital. Improving farmers' access to credit might help them to lend money and continue farming during shocks. Meanwhile, improving their access to farmers' group might also provide them with opportunity to enjoy government subsidies as well as accessing new agricultural technology in agricultural extension. This research might be used as supporting literature in prescribing government policies and development programs. Hence, suggestions in this research can be used as considerations.

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