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Measuring of Social Sustainability Through Community Perceptions for Prima Certified Fruit Development in East Java

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The multidimensional perspective of ecological and socially sustainable agriculture in the global agri-food system has resulted in the emergence of certification schemes as an important mode of governance, but there are still few agricultural actors in Indonesia who register for product certification and recertification. The purpose of this research is to analyze community perception in order to determine the development of Prima certified fruits in East Java. The sampling technique used quota sampling, with 5 people (25 percent), community leaders, 10 people (50 percent), and village heads or sub-district staff, as many as 5 people (25 percent), for a total of 20 respondents per research location. The descriptive analysis enabled by IBM SPSS software version 23 is used in this study. According to the research's findings, the Pasuruan Regency community views employment opportunities and the possibility of local and international markets as crucial factors in the development of Mango certified Prima. On the other hand, Kediri Regency residents primarily view the potential of local and export markets, as well as location-specific goods, as essential factors in the growth of Prima certified pineapple in Kediri Regency. Prima Certification will support social sustainability behind several social development pillars, particularly the elimination of hunger and poverty and the enhancement of life expectancy for a long and prosperous life.

1. Introduction

Ensuring sustainable use of natural resources is a global challenge in the transformation of food production systems (FAO 2019). According to the FAO report, countries must fulfill commitments to change food systems and promote sustainable agriculture while also working toward the goal of eliminating hunger and malnutrition by 2030. This scenario was developed in response to growing concerns about matching rising food demand with more sustainable agricultural practices (Laurett et al., 2021; Skaf et al., 2019; Calicioglu et al., 2019). According to (Dixon, Gulliver, and Gibbon 2001), institutional and socio-economic factors have control over or an impact on many levels of agricultural systems, which are complex matrices of land, crops, animals, labor, capital, and other production methods. Because of this, the agricultural system is a complex socio-ecological system that includes agricultural activities related to and constrained by broad-scale socio-ecological patterns and processes, such as bio-physical conditions, policy and

institutional support, socio-economic characteristics, and the willingness and ability of farmers to be oriented toward sustainable agriculture (Redman et al. 2004; Virapongse et al. 2016; Behnassi, Shahid, and Mintz-Habib 2014).

The global agri-food system's multidimensional view of ecological and socially sustainable agriculture has resulted in the emergence of certification schemes as an important mode of governance in the global food commodity chain (Bianco, 2016; Bonisoli et al., 2019; Schleifer & Sun, 2020; Rathgens et al., 2020). Prima certification is the process of awarding a product cultivation system certificate that is used in Indonesia after passing inspection, testing, and supervision and meeting all requirements to obtain product labels with the names Prima Satu (P-1), Prima Dua (P-2), and Prima Tiga (P-3) in accordance with the regulations outlined in the Regulation of the Minister of Agriculture No. 48/Permentan/OT.140/10/2009 on Good Fruit and Vegetable Cultivation (Indo-GAP) (Euriga, Boehme, and Amanah 2021). The main goals of prime certification are to raise the added value and competitiveness of the product, as well as to give quality assurance and food safety, guarantees, and protection to the general public and consumers.

Ironically, there are just 192 farmers nationwide who are prepared to register a certificate, according to statistics from the website http://keamananpangan.bkp.pertanian.go.id/okkp/ issued by the Food Safety Competent Authority (OKKP). Prime. Similarly, when a fruit producing hub was discovered in the East Java Province, not every one of them desired to renew their certification. based on eight years' worth of data from the Regional Food Safety Competent Authority (OKKP-D) East Java Province (2012-2019). Farmer groups individually and as a group are agricultural business actors. Four business units' certification periods have already run out in 2012. Since 2015 was the expiry year, the majority of the 24 farmer groups or combinations of farmer groups that registered for the prima certificate were farmers. There were 9 business units with expired prime certificates in the subsequent four years, specifically in 2019.

The issue becomes more complicated when fruit certification results in benefits for both the agricultural process and social demands (Silva, Barbosa, and Fontes 2014). Smith & McDonald (1998); Pannel., J. & Schilizzi (1997) concur that social sustainability is related to the quality of life of those who work and live on farms as well as the surrounding community. This includes encouraging the sharing of agricultural value added to more members of society through more use of labor, which will increase social cohesion and equity. According to (Zhen and Routray 2003), social sustainability entails having enough food, distributing it fairly, having access to resources and support services, and having farmers who are knowledgeable about resource conservation.

Prima Certificate has a key position to conduct in-depth investigations because the system and process for quality control and safety of fresh food such as fruits are still far from society's expectations. Existing fruit products, the majority of which are still purposely made using excessive synthetic chemicals and additives that are not in accordance with the dosage, and components that are prohibited for business purposes exclusively. Consequently, the existence of a Prima Certificate has the advantage of providing guarantees and protection for the public from the distribution of fresh food products that meet the safety and quality requirements (physical contamination, biological contamination, and chemical contamination that exceeds the minimum limit set), providing legal certainty guarantees for business actors who carry out production and distribution of fresh food products, and making it easier to trace back the origins of the fresh food products. This clarifies the relationship between the Prima Certificate, which indicates a standard of safe fruit for consumption or P3 label, and the assessment of social sustainability because the influence of people's decisions has genuine consequences for their life. A community campaign for healthy food supply chains can be long-term and sustainable.

The concept of social sustainability for the perpetrators of Prima certified fruit farming, as individuals and communities living side by side in the cultivation area, should be able to build a perception in which the environment is not only an object to meet human needs (human-centric), but must also be maintained and organized for the sake of environmental sustainability itself (ecocentric). Although the outcomes are not always positive in terms of sustainability, they are frequently negative, namely the depletion of natural resources regardless of environmental risks.

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Perception is a crucial aspect of interpersonal communication because it affects communication choices and is an active process that arises from one's experiences, goals, needs, and desires as well as from the external world (DeVito 2016). According to (Wachenheim and Rathge 2000), an individual's experience, knowledge, socioeconomic traits, attitudes, and temporal variables might affect opinions about agriculture. This research, which offers details on how the communities' opinion is formed, has a favorable impression of advanced farming. The majority of survey participants firmly believe that farmers have a positive impact on their local economy (70.9%), that environmental issues like noise, smell, and others are minimal in their region (62.4%), that farmers' losses will seriously harm local economies (61.8%) and that governments should do more to support farmers in their communities in order for them to continue operating (51.5 %). According to (Nawarathne, Dissanayake, and Ginigaddara 2020), the community's perception of upland crop cultivation in the dry season in the Kaduwelalahan urban area of Sri Lanka took into account knowledge of environmentally friendly agricultural practices, knowledge of traditional agricultural practices, the farming experience of the head of the household, and access to agriculture. providing farming advice.

The research position supports the idea of renewability, which is to describe the development of prime certified fruits by investigating social sustainability through unexplored community perceptions. Numerous studies only evaluate how individual farmers perceive the effectiveness of sustainable agriculture, according to the research gap empirically related to social sustainability. (Röös et al. 2019) concentrates specifically on social sustainability; his research aims to identify aspects of significant relevance to the social situation of breeders in Sweden, such as the financial situation, having the same standard of living as others, not being overly stressed, having a job that means, having reasonable working hours, and having a desirable family situation. (Euriga et al. 2021) states that farmers' perceptions of motivation to do business and prospects for increased income are important factors in the social sustainability dimension in the sustainability of vegetable farming. (Füsun Tatlidil, Boz, and Tatlidil 2009) concluded that the higher the socio-economic status of farmers (more frequent contact with extension services, higher education, land ownership, etc.) the more likely to succeed in making farmers prefer towards sustainable agriculture. Various findings constrain the context of the discussion of social sustainability, despite the fact that in the field, agricultural management by local people is frequently found to be founded on culture and traditions that have been in place for a long time. In contrast, there has been limited research into social sustainability in the context of Prima certified fruit development in East Java, emphasizing the importance of understanding community attitudes. Therefore, this study intends to analyze community perceptions as a dimension of social sustainability that has been formed towards the sustainability of Prima certified fruit production, including the fulfillment of aspects of Good Agriculture Practices as a requirement in obtaining a Prima Certificate. The research aims to analyze community perceptions to determine the development of Prima-certified fruits in East Java, Indonesia.

2. Materials and Methods

2.1 Location

A sample area aimed at cities or districts in the Province of East Java, namely Pasuruan Regency and Kediri Regency, determines the location selection. The regional sampling technique was chosen for several reasons, including 1) Regions or regions that show the existence of Poktan and Gapoktan that have registered Prima 3 Certification as a key subject sourced from the inventory of Regional Food Safety Competent Authority (OKKPD) East Java Province's. 2) Based on the Horticultural Statistics of East Java Province published by the Central Bureau of Statistics (BPS) of the Province of East Java in the last three years, namely 2019 - 2021, the area or region as a planting center area. 3) These two places were chosen because they are renowned in East Java Province to have location-specific fruit commodities. Pasuruan Regency has an icon of a clonal 21 mango or avocado mangoes fruit-producing area, whereas Kediri Regency has an icon of a Kelud pineapple-producing area. As a result, the two varieties of fruit should be preserved to ensure their long-term production.

2.2. Sampling

The community component that is regarded as a stakeholder in or has an interest in the production of

Prima certified fruits at certain places makes up the population on the social sustainability dimension. Quota sampling is used in the sampling method. A method of gathering data by contacting study participants who can satisfy the criteria for the population characteristics is known as quota sampling. By allocating specific quotas to each group, samples are taken using this method. Each sampling unit was the subject of direct data collection. In this study, the sampling quota was set at 40 participants, with 20 participants per regency location. The categories for classifying quota samples in this study consist of 1). Staff representatives in the field of horticultural crop production at the Regency Agriculture Office who know the need for research data, especially issues related to the production of Prima-certified fruits, as many as 5 people (25%). 2). Community leaders, as a symbol of collective agreement from the ideas, actions, and behavior of the community to address problems and perceptions to assess the production of Prima certified fruits, as many as 10 people (50%). 3). Village heads and staff in selected areas, cross-check the production of Prima-certified fruit providing economic welfare to farmers or the community in their area of 5 people (25%).

2.3. Data Analysis

A descriptive analysis approach is used in this study. The percentage of answers on each questionnaire was obtained from the Likert scale. The scale criteria used to quantify the parameters used to identify community perceptions of agricultural commodity development (Jin et al., 2022; Ramli, 2015; Spiegal et al., 2018; Cone & Myhre, 2000) are as follows: 1) Conformity with community aspirations; 2) Labor absorption; 3) Location-specific commodities; and 4) Potential for local and export markets. and 5) Cost, technology, and institutional barriers. The Likert scale rating weights in this study are Strongly Agree (weight = 5), Agree (weight = 4), Net (weight = 3), Disagree (weight = 2), and Strongly Disagree (weight = = 1). After scoring the questionnaire answers, the next step is to present each of the five parameters of community perception with software support, namely IBM SPSS version 23 with the formula:

$$P^2 = \frac{F}{N} \times 100\%$$

Where
P = Percentage
F = Frequency obtained
N = Number of Respondents

Following the conclusion drawn from the findings of this investigation, the average value is calculated using the following formula:

$$M = \frac{\sum x}{N}$$

Where
M = Mean
x = Sum of existing scores
N = Number of scores

3. Results and Discussion

3.1. Community Profile

Characteristics of research Respondents are research subjects who will participate in experiments to investigate perceptions of the development of Prima certified fruits in East Java. The characteristics of the respondents used in this study were classified by age, gender, age, and education. The findings revealed that the majority of the respondents, as many as 23, were between the ages of 46 and 55. Respondents aged 36-45 years old came in second with 11 people. The proportion of respondents' identities based on age demonstrates the level of experience and maturity of mindset, particularly maturity to consider things both for themselves and the surrounding environment in this context is the development of Prima certified fruits.

Gender is the biological difference between a woman and a man that is present at birth. Figure 2 shows that the community's profile as respondents is predominantly male, with as many as 30 people (75%) being male, while the remaining 10 people are female (25%). According to (Laurett et al. 2021), demographic factors such as age, education level, and gender can have an impact on how sustainability is perceived and practiced. It emphasizes the significance of external and internal influences, as well as demographic characteristics, in determining how people perceive sustainability. In order to find out how different groups

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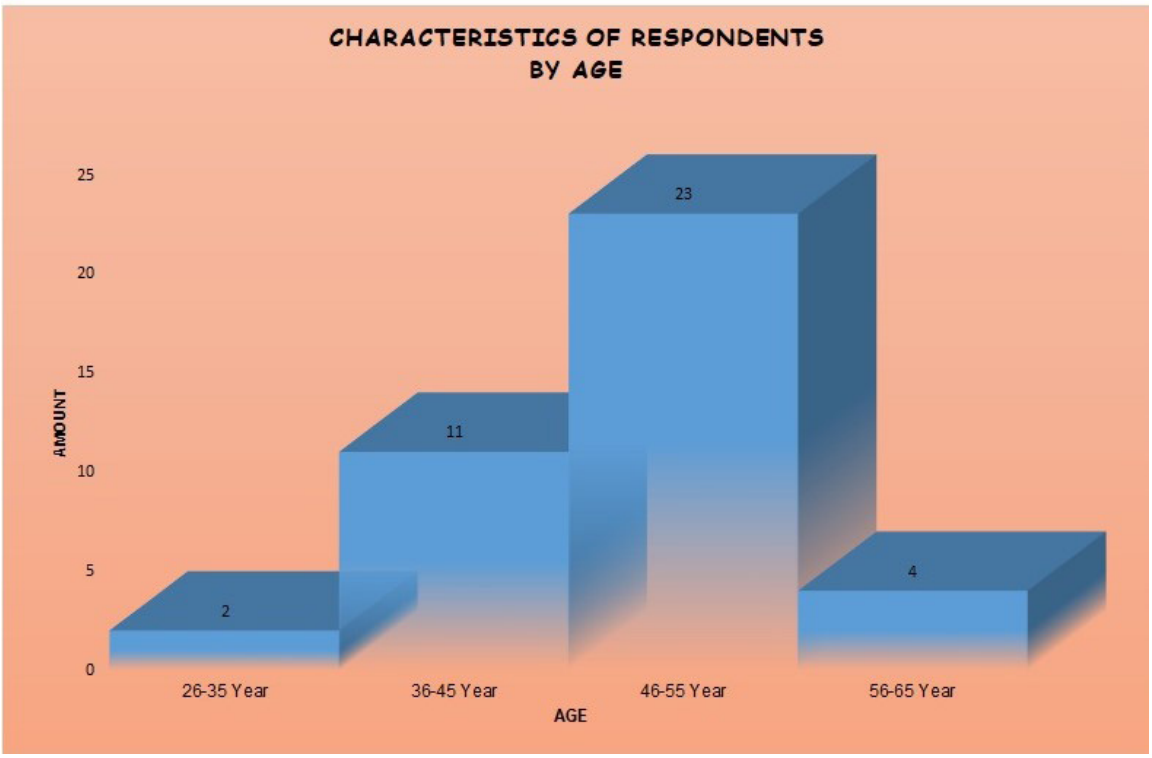

Figure 1. Profile by Age (Source : Data Analysis, 2022)

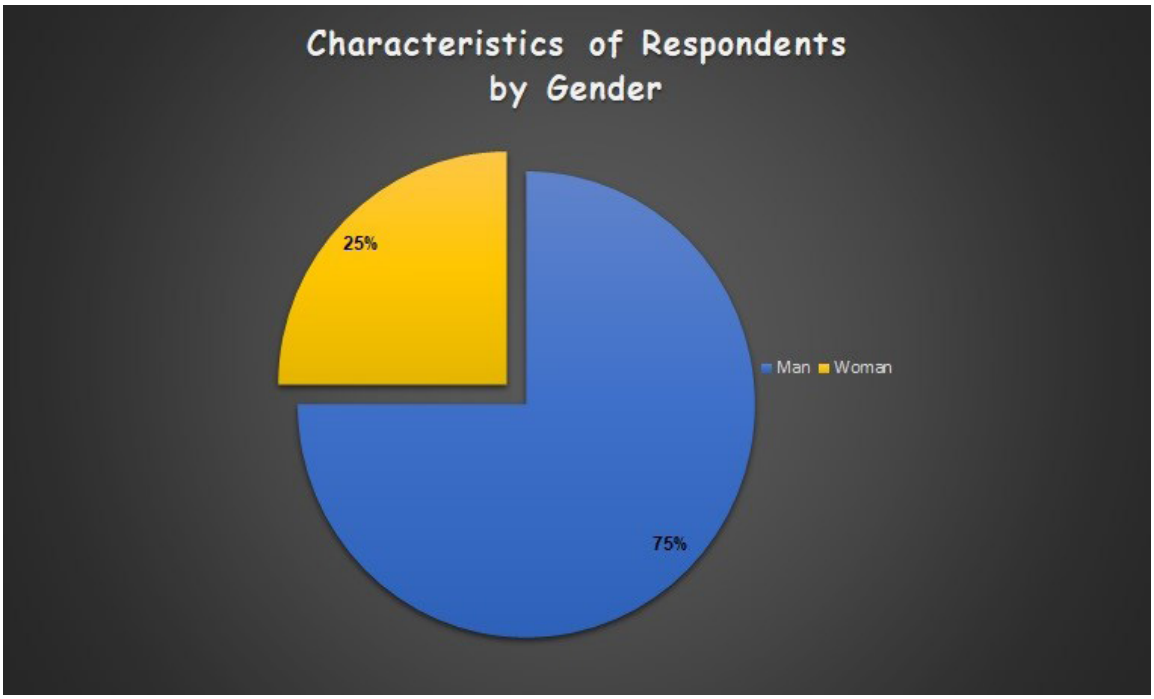

Figure 2. Profile by Gender (Source : Data Analysis, 2022)

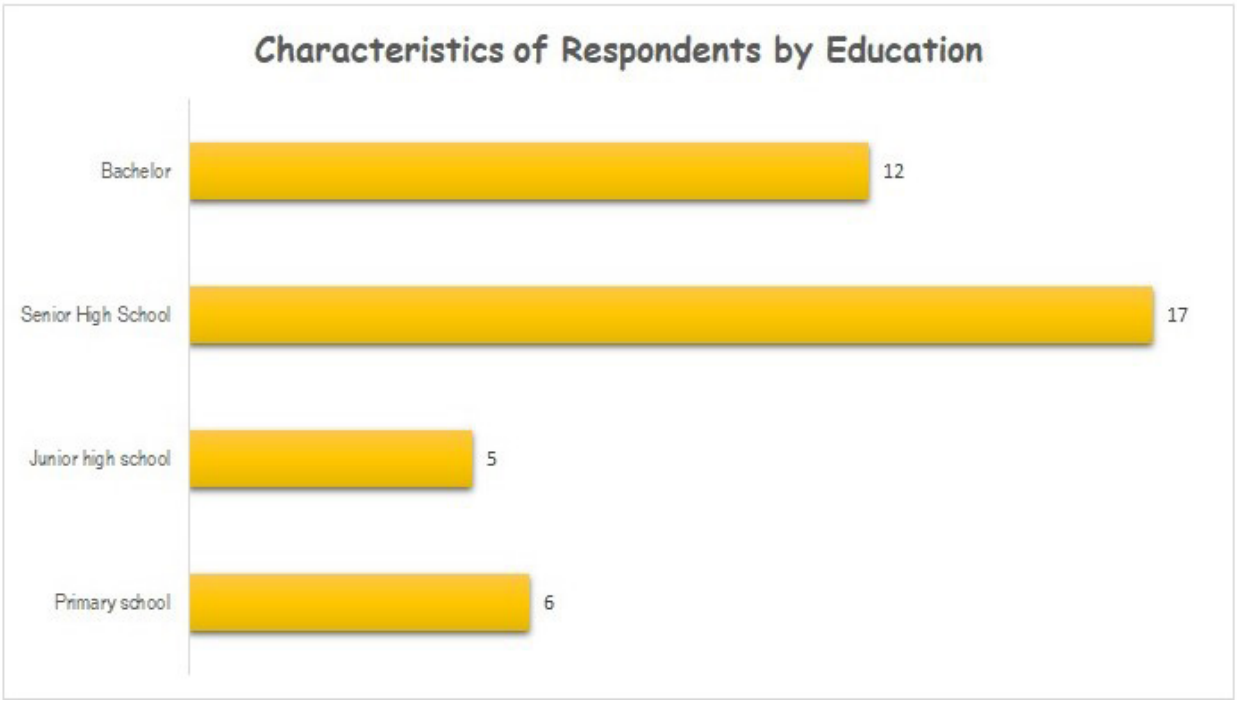

Figure 3 . Profile by Education (Source : Data Analysis, 2022)

of people view sustainable development, (Laurett et al. 2021) suggested that local farmers, businesses, government organizations, and consumers engage in dialogue with one another. The respondents in this study come from a variety of professions, including community leaders, sub-district employees at the research site, and professionals from the district agriculture office working in the area of horticulture crop production. All vocational professions are dominated by men, which is understandable given that they provide the majority of the family's income.

The research's findings also revealed that the respondents' highest degree of education was high school, followed by undergraduate studies, with 17 and 12 respondents, respectively. Education may point something in a positive direction in terms of how it will be perceived. This finding is supported by research from (Euriga et al. 2021), which shows that formal education has a significant impact on farmers' perceptions of sustainable horticulture. An in-depth examination of the educational factor reveals a significant positive effect on ethical perception. Several other researchers agree that education has a positive impact on perception (Abdollahzadeh et al., 2015; Ntshangase et al., 2018). Because education can take the form of learning a group of people's knowledge, skills, and habits that are passed down from generation to generation.

3.2. Community Perception of Prima Certified Fruit Development

Perception is derived from the Latin perceptio, which means to receive or take. Perception is the experience of objects, events, or relationships gained through inference and message interpretation. Perception, according to (Ritonga 2019), is the process of giving meaning to sensations in order for humans to gain new knowledge; in other words, perception converts sensations into information. As a result, perception can be defined as an experience of objects, events, or relationships gained through inference and message interpretation.

According to (Salisah 2015), proposes that in certain instances we purposefully design our behavior to prevent exposure to specific stimuli that we would prefer to ignore. Although paying attention to stimuli causes them to become more powerful and alive in our consciousness, it does not guarantee that our perceptions will be completely accurate. Attention and perception are heavily influenced by motivational forces.

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While the functional factors that influence perception are derived from needs, past experiences, and other factors, we will refer to these as personal factors. The characteristics of the person who responds to the stimuli, rather than the type or form of stimuli, are the determinants of perception. We choose a message based on perception and ignore other messages. The greater the degree of similarity in perception between individuals, the easier and more frequently they communicate, and thus the more likely they are to form identity groups. Table 1 shows the community's perception of the development of Prima certified fruits.

Based on Table 1, the development of Prima certified mango fruit that is perceived as very good has a 'potential for local and export markets' with a score of 4.05. The prima certified mango being studied is clonal mango 21, also known as mango avocado. This mango is the offspring of a cross between the Gadung Mango and the Arumanis. Granting of Horticultural Plant Variety List Signs in 2016. According to information obtained through interviews with several administrators of the Gadung Mango Farmers Association (APMG 21), clonal 21 mangoes have market potential, both locally and internationally, because most farmers choose to sell through association intermediaries because it is more profitable rather than wholesaler with a slash system.

Furthermore, this association organizes marketing channels to traditional markets and collaborates with exporters. Clonal 21 mango marketing objectives include large cities such as Surabaya, Malang, Jakarta, Solo, and Semarang, as well as continuous exports to Malaysia and Singapore. The high mean score in perceiving the potential of local and export markets for Mango Clonal 21 indicates that communities are beginning to recognize that fruit entering foreign markets must meet quality guaranteed requirements and come from Good Agriculture Practices (GAP) gardens, as evidenced by the placement of a label Prime 3 on each fruit. (Sarkar et al. 2011) discovered in their research that when it comes to perceptions of what constitutes best agricultural practice, the majority of farmers (63 percent) believe that aiming for high yields is the most important criterion. Organic cultivation is the least preferred option for additional plant pest protection, it is difficult to obtain organic certification. However, there is high market demand.

The community views the development of Prima certified mango fruit favorably because it can absorb labor with a known average score of 4.04. The selling price of clonal 21 mangoes is around Rp. 35,000 - 45,000 per kg, making it a very profitable crop for many farmers in Rembang District, Pasuruan Regency. Even though agriculture in Indonesia is experiencing regeneration issues, there are many children of mango farmers who want to follow in their parent's footsteps to maintain their livelihoods, and they are open to obtaining various types of information both on and off-farm via social media such as WhatsApp, Facebook, and Instagram.

Table 1. Community Perception of the Development of Prima Certified Fruits

No.	Perception Evaluation Elements	Average Score	
		Mangoes from Pasuruan Regency	Pineapple from Kediri Regency
1.	Conformity with the aspirations of the community	3.97	3.81
2.	Employment	4.04	3.72
3.	Location-specific commodities	3.97	4.04
4.	Local and export market potential	4.05	4.15
5.	Cost, technology, and institutional barriers	3.64	3.84

Source : Data Analysis (2022)

The study's findings make an important contribution because the community believes that agricultural workers motivated by market certainty and high product selling prices from the Prima Certification guarantee will be able to reduce the negative impact of agricultural regeneration issues, and in the long run, it is expected to be able to restore existing labor conditions to have high productivity and a high level of working time in line with efforts to attract potential employees. This finding is consistent with the research (Laurett et al. 2021) that farmers in Brazil perceive socioeconomic benefits such as increased profitability, healthy food production, improved farmer health, efficiency, improved quality of life, increased production costs, long-term profitability, and field creation, employment, and income from existing sustainable agricultural practices.

The Prima-certified mango cultivation activity drew attention because it met the community's expectations, with a known average score of 3.97. The community recognizes that farmers' use of good agriculture or Good Agriculture Practices (GAP) is an effort to ensure the welfare of farmers, their families, and workers, while consumers receive quality products with safe nutritional value. The complicated requirements of GAP are actually designed to ensure environmental sustainability so that the application of GAP can restore the state of agricultural land in their area, which is increasingly damaged due to the excessive use of chemical fertilizers and pesticides.
Different research locations and respondents, but the same element of perception assessment that the highest perception of pineapple fruit commodities from Kediri Regency is 'Local and export market potential,' which is 4.15, indicating that the community perception that has been built also recognizes that the commodity has a high chance of being demanded by local and international markets. Local marketing areas are well-known in major cities such as Surabaya, Jakarta, Yogyakarta, and Bali. Surprisingly, because this fruit has been labeled with Prima 3, it has been successful in entering large-scale modern retail outlets such as Transmart, Hypermarket, and Superindo. Meanwhile, the export market is able to send fresh and processed products to the United Arab Emirates, Japan, Hong Kong, Singapore, Oman, Kuwait, and Canada with the help of exporters.

Furthermore, community perception evaluates the development of pineapple as a Prima certified fruit due to 'location-specific commodities' with an average score of 4.04. This means that most people agree that pineapples primarily come from Ngancar District, Kediri Regency, distinguished by a sweeter taste, thicker flesh than ordinary pineapples, and a relatively large size of 1.5 to 2 kilograms supported by the topography is a mountainous area namely Mount Kelud. Several location-specific varieties have been developed, including Honey Pineapple, Queen, and Pasir Kelud. According to (Ramli 2015), community structural changes can be expected to increase low agricultural productivity. Development of key concepts for increasing income and community welfare through the expansion of location-specific agricultural commodities.

The community perception of 'cost, technology, and institutional barriers', on the other hand, is highly rated, with an average score of 3.84. According to the community in Kediri Regency, the development of pineapple fruit to continue to be certified Prima has a cost constraint due to the need for such large farming capital, given that the sandy soil certainly requires a lot of fertilizer and pesticide treatment to maximize fruit production, while the capital of small farmers is small. So far, capital has been granted to the People's Farming Credit (KUR), but it is deemed insufficient to meet the needs of production facilities other than seeds.

Observing the community's perspective, the success of tissue culture techniques for the Pasir Kelud variety is not repeated, especially during the Covid-19 pandemic, nursery activities have ceased due to social constraints. Whereas the new variety will broaden consumers' options for purchasing pineapples. The existence of farmer groups that are considered less professional to handle GAP, especially individual (individual) farmers, marketing reach is still limited and can be improved, and reluctance when re-administering Prima Certificates due to distance, namely visiting the service office, is perceived by the community as still having problems. The Regional Food Safety Competence Authority of East Java Province is based in Surabaya.

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4. Conclusion

Based on experiences, requirements, and wants, various community perspectives about how far fruit cultivation has progressed to earn a Prima Certificate in their local environment have been investigated. The five components of assessment have generally been positively received when communities are asked to evaluate the sustainability of mango and pineapple production,

Furthermore, investigation reveals that the potential for the local and international markets as well as employment are seen as crucial perception components for the development of sustainable mangoes in Pasuruan Regency. Many people express their agreement with the statements that "mangoes in Pasuruan Regency sell well in traditional markets spread throughout the region" and even "mangoes can enter and meet the product criteria determined by modern markets or retail (supermarkets/minimarkets)," which are based on community perceptions of the parameters of local and export market potential. Most people have a negative impression of the labor absorption criterion in the sentence, "the existence of fruit farmers who have survived up until now because there are no other jobs." Aside from financial considerations, the community believes that agriculture should be preserved because it has been a job passed down through the generations and has met the requirements of their families up until this point. Then, as their parents lose the strength to continue farming, these young farmers gradually take over that position.
On the other hand, the majority of residents in Kediri Regency view the potential of the local and export markets as well as site-specific commodities as being crucial to the development of the pineapple fruit in Kediri Regency. The research comes to an interesting conclusion when the location-specific commodity parameters in the statement of preserving pineapple fruit commodities with distinctive location specifications support the idea of sustainable agriculture as the most widely accepted response. This means that pineapple farming must be able to raise people's income and welfare in line with increasing production while still taking care of the environment. Additionally, it was discovered that many individuals agree on the criteria of local and export market potential, particularly the statement "pineapple commodity in Kediri Regency has the potential to continue to be developed." Pineapple fruit is a popular fruit both around the world. This creates a reasonable market opportunity for pineapples. This increase in production is attributable to an increase in pineapple consumption. Kediri Regency, as a pineapple-producing center in Indonesia, has enormous potential to continue planting pineapples.

The findings have a wide-ranging impact on the concept of social sustainability of Prima certified fruit farming in East Java. Because the determinant parameter of community perceptions in the two regions is a practical implication that agricultural activity is related to the quality of life of those who work and live in agriculture, as well as those of the surrounding community. Promoting broader market reach through increased use of available labor will improve social cohesion and equity. Certification establishes the quality assurance of agricultural products, it is also one method of increasing product competitiveness in the market. Thus, certification becomes a driving force behind several social development pillars, particularly the elimination of hunger and poverty and the enhancement of life expectancy for a long and prosperous life. A stable and healthy social structure, as well as natural resources and the environment, serve as the foundation for economic activity, while economic prosperity is required for sustaining socio-cultural stability and protecting natural resources and the environment.

Conflict of interest

The authors declare no conflict of interest.

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