Contribution of Oil Palm Plantation to Household in Kolaka District of Southeast Sulawesi

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Abstract. The study aimed to find out the contribution of oil palm plantation to the household income of villagers in Kolaka District. The study was conducted in three villages in an oil palm plantation zone in Tanggetada sub-district, Kolaka District, Southeast Sulawesi. We selected 73 respondents from the three villages, representing partner farmers, casual workers in the plantation, and partner-farmers who were casual workers. A questionnaire-based interview method and Focus Group Discussion (FGD) were used to collect data and information. Research results showed that 68.5% of respondents perceived the plantation to have contributed positively to the household income. The average annual income they received from the plantation was Rp18,915,818 or 57.5% of the total household income. While the present income level was rated slightly better than before, respondents rated the stability of income and the suitability with skills as “same as before,” and rated leisure time and work satisfaction as “worse than before.” The local government and the plantation company should maximize the plantation’s livelihood benefits to enhance social sustainability of oil palm production.

1. Introduction

Oil palm is an important estate crop in Indonesia. In 1970, the land area for oil palm plantation was 0.13 million ha and the production was 0.22 million tons, which increased to 14.05 million ha with production reaching 37.97 million tons in 2017 [1]. This oil palm plantation expansion has been driven by increasing global demand for vegetable oils [2]. As the largest palm oil producing country in the world, Indonesia produced 42.87 million tons of crude oil in 2019 [1]. The top ten countries that imported palm oil from Indonesia were India, China, the European Union, Pakistan, Bangladesh, United States, Philippines, Egypt, Burma, and Kenya [3].

Oil palm plantation exists traditionally in Sumatera and Kalimantan but has also been expanded to eastern Indonesia, especially Papua and Sulawesi. In Southeast Sulawesi, the establishment of oil palm plantation started in 2005. Despite being not included as a leading crop in the province [4], its land area and production show an increasing trend. The land area for oil palm plantation in 2019 amounted to 71,129 ha and production of 99,427 tons [1] being located mainly in the districts of Kolaka,
Konawe, and North Konawe. The expansion of the plantation was carried out mainly by the private sector. Private companies own 82.5 percent, smallholders 15.6 percent, and state-owned enterprises 1.8 percent [1].

Several studies show the generally positive financial and socio-economic impact of oil palm adoption in the villages located in the surroundings of oil palm plantation [5]–[8]. However, several reports show the adverse socio-economic impact of oil palm plantation on the livelihoods of smallholders [9]–[12]. Nevertheless, studies on livelihood impact still focused on more experienced plantations and farmers in Sumatera and Kalimantan, whereas information on plantations in Sulawesi is still limited. It is against this background that this study is conducted to assess the contribution of income from oil palm to the household income.

2. Methodology
The study was carried out in Tanggetada subdistrict of Kolaka District where oil palm plantation was located. Of nine villages where oil palm trees were cultivated, three villages were selected purposively as the location for the study. The selection of the study villages was based on the land area for oil palm plantation and the variation in village residents’ ethnicity. Thus the selected villages represented villages with residents who were native people Tolakinese and other ethnics (Buginese, Balinese, Javanese, and Lomboknese) either on their own will or through government-sponsored transmigration program.

The study population was all villagers who were (1) the smallholder partners of the company, (2) smallholder partners and workers as well, and (3) plantation casual workers. The study population was 950 persons. The number of respondents was 91 persons. The selection of respondents from each village was made using a stratified random sampling method. In this regard, the number of respondents from each village was taken proportionally.

Data were collected using questionnaire-based interviews and Focus Group Discussions. Farm income from estate and food crops was calculated using cost and returns analysis [13], [14]. Data and information regarding respondents’ perception and contribution of oil palm were analyzed using descriptive statistics. In this regard, questions regarding respondents’ perception were designed on a 3-point scale, and responses were categorized on the basis of their mean score [15]. Mean scores of 1.0 – 1.7 were categorized as low, mean scores of 1.7-2.3 as fair or sufficient, and mean scores of 2.4-3.00 as high. The following formula was used to assess the contribution of oil palm to the total household income:

\[
C = \frac{\text{Total Income from Oil Palm}}{\text{Total Household Income}} \times 100\
\]

Where:
\[ C = \text{Contribution of Oil Palm Plantation (\%)} \]

3. Result and Discussion
3.1. Socio-economic characteristics of respondents
The majority of respondents (82.5 percent) are in the age range of 15-55 years old. The majority of respondents (44.0 percent) completed elementary school, 22.0 percent finished senior high school, 15.4 percent finished junior high school, 13.2 percent did not go to school, and 5.5 percent completed university. Slightly more than half of the respondents (56.0 percent) had a family size of four persons, and the remaining (44.0 percent) had a family size of more than four persons. Concerning sources of income, 56.0 percent were farmers, 26.4 percent were plantation workers, and the remaining were from jobs. As many as 39.6 percent of respondents were Tolakinese (native ethnics), 52.8 percent were migrants from other provinces, 5.5 percent came from other subdistrict, and 2.2 percent came from other municipalities/districts.
3.2. Perceived Contribution of Oil Palm

Respondents were asked whether oil palm plantation had contributed positively to their household income. A higher percentage (80.8 percent) said that the plantation had contributed positively to their household income, and the remaining (19.2 percent) answered the contrary. Further, those who answered “yes” were then asked regarding the contribution rate, and the result is presented in Figure 1.

As Figure 1 shows, a great majority of respondents rated the contribution of oil palm plantation to the household income as being “low.” The average score is 1.3, which is under the “low” category. Smallholder perception of the level of contribution as being low was related to the level of the present income they received from the plantation, the level of their income before the plantation’s presence, and the level of their expected income from the plantation. The study found that smallholders expected to receive more from the plantation as promised during the socialization process. Such high expectation was the main reason for smallholders to hand their land for the company to rent for a specified period.

3.3. Contribution of Oil Palm Plantation

Table 1 presents the average annual income that smallholders had earned from agriculture, non-agriculture, and oil palm plantation. Agriculture and non-agriculture contributed 22.0 percent and 20.5 percent, respectively, to the household income. Oil palm plantation provided the highest contribution (57.5 percent) to the household income.

Smallholders grew estate and food crops to obtain additional income and meet family consumption needs. Similar to other areas in Kolaka District, clove, pepper, and cocoa were the three estate crops...
that were popularly grown [16], [17] in the study villages. Few respondents grew oil palm independently in their plots. Other crops grown were durian, coconut, patchouli, chili, tomato, cassava, banana, coffee, langsat, and rice. In general, net returns from these crops were low if compared with that in other areas. Some factors that were responsible for these low returns were the small farm size and extensive farming practices. Smallholders generally handed most of their plots to the company, so they cultivated smaller land with estate or food crops. Besides, the partner smallholders who worked with the company as casual workers often did not have sufficient time to take care of their crops, making the crop productivity being low.

Some respondents worked in the non-agriculture sector and got income. Some did the job as their primary source of income, but some had to do it because they had handed all their land to the company and expected only the monthly dividend from the company. Some had sold all the land and now had to work in the non-agriculture sector to earn a living. They sold the land that the company had rented from them because the monthly benefits from the company was low and insufficient to cover their living cost. The cash they got from selling their plots was used to establish new micro-scale enterprises or be involved in other non-agricultural activities.

Oil palm related income consisted of income from (i) monthly dividend from a benefit-sharing arrangement with the company, and (ii) working as casual workers in the plantation company. The benefit-sharing was based on the land size, but the real monthly amount allocated to the partner smallholder varied from time to time. All respondents agreed that the present level of monthly dividend was very low. In this regard, the amount of monthly dividend seemed to be based on plant productivity and palm oil price. However, smallholders complained of the lack of access to information regarding the calculation of the benefits. Nevertheless, smallholders might be part of the reasons. Since many had sold their plots to people living in outside district or province, establishing a cooperative, which in many cases could bridge the interest of smallholders with that of the company, became more complicated to realize. Thus, smallholders did not have sufficient bargaining position to discuss the low level of the monthly dividend.

The plantation company offered partner smallholders chances to work in the plantation as casual workers. Partner smallholders acknowledged that they were given priority to work in the plantation, which was one of the advantages of having the plantation in their area. Another main advantage was that workers were provided training on oil palm farm management practices, such as fertilizing, handling pest and disease, and harvesting. However, respondents complained of the adverse working conditions for casual day workers, including low wages, lack of job security, and minimum legal protection. This issue of working conditions should be addressed to achieve sustainable oil palm plantation.

As Table 1 shows, income from oil palm constituted the main part of the total household income. However, the amount of income from oil palm seemed to be below the respondents’ expectations. In this regard, the high percentage of income from oil palm was related to the low income from agriculture and non-agriculture activities. The total household income itself was lower compared to household income in other areas. Thus the establishment of plantation did not contribute significantly to the improvement of livelihoods of smallholders. However, it should be noted that this result did not reflect the overall contribution of the oil palm, as this study only focused on smallholders. It did not cover small-scale enterprises and traders. The establishment of oil palm plantation brought many workers from outside the district, creating opportunities for trade and services and the market of local goods.
While oil palm contributed to more than half of the total household income and the level of contribution was perceived to be low, it was noteworthy to find out the perceived changes in respondents’ livelihoods. Using 3-point scale (1 = worse than before, 2 = similar as before, 3 = better than before) responses, we asked respondents to assess the present livelihoods if compared to the period before the establishment of the plantation, in terms of income stability, availability of leisure time, appropriateness with skills, and work satisfaction. As shown in Figure 1, income stability was perceived to be the same as before, leisure time availability and work satisfaction “worse than before,” and skill appropriateness “the same as before.” The stability of income was considered the same as before because the amount of monthly dividend fluctuated and the disbursal time to smallholders was irregular. Working in the on-farm production subsystem provided more free time than working in the estate where plantation work had a tight schedule and should be done on-time and based on the target. Work satisfaction was related to adverse working conditions as described before. The present livelihoods, especially those related to oil palm, were still related to agriculture and were considered suitable with background knowledge and smallholders’ skills.

4. Conclusion

A great majority of smallholders perceived the plantation to have contributed positively to the household income. The average annual income they received from oil palm plantation was Rp18,915,818, or 57.5% of the total household income. While oil palm constituted the central part of their household income, smallholders rated such level of contribution as lower than they expected. Comparing their present livelihoods with that before the oil palm presence, respondents rated the stability of income and the suitability with skills as “the same as before,” and rated leisure time and work satisfaction as “worse than before.” Local government, the plantation company, and all stakeholders should take efforts to maximize livelihood benefits of the plantation through dealing with the issues of dividend, wage, and working conditions to enhance the social sustainability of oil palm production.

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