REVIEW OF INTERNATIONAL GEOGRAPHICAL EDUCATION

ISSN: 2146-0353 ● © RIGEO ● 11(5), SPRING, 2021

www.rigeo.org

Research Article

Ecofeminism: Role of Women in Environmental Conservation and the Household Economy During the Covid 19 Pandemic

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Abstract

The purpose of this research is to know the role of ecofeminism in environmental conservation and the household economy during the COVID-19 pandemic through oil palm farming, determine the amount of the contribution of farm woman work time in rubber and oil palm farming, to determine the amount of the contribution of farm woman income in rubber and oil palm farming, determine the role of women farmers in protecting the surrounding environment in rubber and oil palm farming. The sample of the study as many as 55 people consisting of 35 people from rubber female farmer and 15 people from oil palm female farmer in Sungai Paring Village, Cempaga Subdistrict, East Kotawaringin Regency. Based on the results of the study showed that the total outpouring of work time by rubber farmer women amounted to 42.91 HKP. Whereas in the oil palm farming the outpouring of farm woman work time equal to 37.60 HKP. Rubber farming activities that have a high contribution among others: shrubs clearing, plant stakes support, planting hole making, planting, and fertilizing. Activities that have a draw time/ spent a lot of time are weeding activities, rubber tapping and latex collection. Activities that have a low contribution among others: pest and disease control activities, latex freezing, sale of yield transportation and anticipation of land fires. Whereas in the oil palm farming activities that have high contribution namely plant stakes support/pengajiran tanaman, planting hole making, shrub clearing, weeding, and planting. Activities that have a draw time/ spent a lot of time are fertilization, dish making, and collection (TBS) and shunting (TPH). Low-contributing activities namely sales, harvest/pendodosan, yield transportation, anticipation of land fires, and pest and disease control. The contribution of rubber farmer women's income with a high category amounted to 54.28%, the medium category amounted to 34.29%, and the low category amounted to 11.43%. As for oil palm farming with a high category amounted to 53.33%, a medium category amounted to 40%, and a low category equal to 6.67%. On the average, rubber and oil palm female farmer are still dominant using the manual method, meaning that women farmer have awareness in protecting the environment.

Keywords

Women Farmer, Outpouring of Work Time, Family Economic, Contribution, Environment

To cite this article: Elbaar E, F, Taufik E, N, Dayu, and Suphattanakul O. (2021). Ecofeminism: Role of Women in Environmental Conservation and the Household Economy During the Covid 19 Pandemic. Review of International Geographical Education (RIGEO), 11(5), 5078-5090. Doi: 10.48047/rigeo.11.05.382

Submitted: 01-11-2020 ● **Revised:** 14-02-2021 ● **Accepted:** 05-03-2021

Introduction

Various impacts began to appear as a result of the spread of covid-19, resulting in the global Covid-19 pandemic. All countries are dealing with diseased people, which is causing changes in practically every element of human life. The COVID-19 pandemic has also had an impact on the home economic sector. Cortignani et al. (2020), Morton (2020), Blazy et al. (2021), Mishra et al. (2021), Kumar et al. (2021), Kaur et al. (2021), de Boef et al. (2021), Obayelu et al. (2021) found that COVID-19 impacat had a significant impact on the farmer crisis and harmed the agricultural system. The main effects noted were a fall in revenue, production losses due to difficulty in marketing through traditional channels, and challenges in managing the agricultural system due to restricted access to inputs and labor. Farmers have evolved to be more self-sufficient in order to overcome this: reduced planted area, quest for short marketing channels, diversification of production and reorientation to local market needs, mutual help among farmers. Within feminism, there is a movement called as ecofeminism. It is a movement that looks at the relationship between exploitation and environmental degradation, as well as the subordination and oppression of women. In the face of this country's environmental disaster and mounting conflict over natural resources, ecofeminism's position becomes increasingly important. This is related to the fact that environmental conflicts disproportionately harm women. Women's roles in the environment and in social life are becoming more unstable (Moss & Dyck, 1996; Bullough, 2021; Lawlor, 2021). Women's participation in rubber and oil palm farming is an initiative to strengthen the family economy and environmental participation in the Covid 19 era. According to the findings of the study, women farmers devote a significant amount of time to the rubber and oil palm industries. Participation in rubber tapping, bush clearance activities, and pest control. According to the findings of the Basriwijaya Research (2019), the role of women farmers in rural regions is indeed very essential, as women farmers work in addition to caring for the household and children. A woman can pursue a variety of jobs to supplement her family's income, including self-employment and rubber farming. The agricultural sector in Indonesia continues to play an important role in economic growth because rural residents in Indonesia rely on it for a living. Indonesia is regarded as an agricultural country that relies on agriculture to promote economic growth and provide a source of income for its people. The agricultural sector also provides raw materials to the industrial sector, which is currently expanding rapidly and contributing significantly to the expansion of GRDP, hence the agricultural sector is regarded as playing a very prominent role in Indonesia's economic growth (Arsyad, 2010). Central Kalimantan is Indonesia's second-largest province, behind Papua Province. According to the Central Bureau of Statistics, the size of Central Kalimantan is 153.564 km2, or 8.04 percent of the total area of Indonesia (2018). Table 1 shows that the agriculture industry is still the main source of employment for the people of Central Kalimantan.

Table 1.
Population Ages 15 and Over who Work According to Main Employment and Gender in Central Kalimantan Province, 2017

Main Employment	Gender Man (people)	%	Woman (people)	%	Total (people)
Agriculture	334.653	68.23	155.835	31.77	490.488
Mining and Excavation	73.690	95.04	3.849	4.96	77.539
Processing Industry	34.133	63.97	19.227	36.03	53.360
Electricity, Gas and Clean Water	3.756	83.97	717	16.03	4.473
Construction	77.421	98.61	1.091	1.39	78.512
Trade, Hotel and Restaurant	113.127	47.06	127.269	52.94	240.396
Transportation, Warehousing and Communication	35.646	90.85	3.590	9.15	39.236
Finance, Banking and Corporate Services	15.912	78.43	4.376	21.57	20.288
Other services	120.061	54.97	98.354	45.03	218.415
Total	808.399		414.308		1.222.707

(**Source:** Central Bureau of Statistics of Central Kalimantan Province, 2018)

The agriculture industry employs the most people, totaling 490.488 individuals, with the total male population working in this field, precisely 334.653 people with a total percentage of 68.23 percent, and the total female population is 155.835 people with a total percentage of 31.77 percent. Following that is the trade, hotel, and restaurant industry, which employs 240.396 people, 113.127 of whom are men and have a proportion of 47.06 percent, while 127.269 of whom are women and have a proportion of 52.94 percent. Table 1 shows that women have a presence in the labor force, both in the agricultural and non-agricultural sectors. Women have made important contributions to the family's well-being in this scenario, notably in the economic domain. Female labor force participation will rise as a result of a number of factors, including increased learning opportunities for women, the success of family planning programs, the number of child care centers, technological advances that allow women to balance family and work responsibilities, and an increase in work participation. This has an impact not only on the labor market, but also on the well-being of women and their families. Women farmers who labor in this field will increase family income, improving the nutrition and health of all family members. As a result of this predicament, women farmers are obliged to fulfill two tasks at the same time: the domestic role of household care and the public role of working outside the home or laboring to meet the needs of the entire family. Pudjiwati is an abbreviation for Pudjiwati (1985) This study emphasizes the significance of women's gender involvement in farming activities, specifically in rubber and oil palm farming, as a means of improving family economic security and efficiency in the use of local resources, as well as improving women's gender status in agricultural sector activities during COVID-19. Women's participation in farming activities is an attempt to strengthen the input values in the production process and decision making. Women farmers are expected to be able to support the family economy during the COVID-19 epidemic, in addition to being a pillar in the household and a figure who educates their children.

Research Purposes

As for the purposes of this study, they were to determine the amount of an outpouring of farm woman work time in rubber and oil palm farming, the amount of the contribution of farm woman work time in rubber and oil palm farming, the amount of the contribution of farm woman income in rubber and oil palm farming, and the role of women farmers in environmental protection.

Research Method

Location and Time of Research

This study was conducted in Sungai Paring Village, Cempaga Subdistrict, Kotawaringin Timur Regency. This research region was chosen with the knowledge that the residents in Sungai Paring Village primarily work as workers for rubber and oil palm producers. This research activity will last two (two) months, from December 2019 to January 2020.

Data Collection Method

This study made use of both primary and secondary data. Primary data is information gathered through direct interviews with informants and surveys completed by respondents using a pre-prepared list of questions. The data is in the form of direct responses from respondents via questionnaires. Secondary data, i.e. information received from directly associated agencies. Plantation Office of Provincial and Kotawaringin Timur Regency, Central Bureau of Statistics / Badan Pusat Statistik (BPS), Sungai Paring Village Office, Agricultural Extension Center/Balai Penyuluh Pertanian (BPP), and other supporting data obtained from statistical data, research publications, and various literature obtained from books, journals, and sources or media.

Sampling Method

Sampling utilizing the basic random sampling approach, essentially data collection or respondents chosen at random, in which a sample is drawn in such a way that each unit of the population has an equal chance of being chosen as a sample. Taking into consideration the criteria for respondents who become the sample, individuals who work as female farm laborers

are included. The total population of Sungai Paring Village, Cempaga Subdistrict, Kotawaringin Timur Regency is 2.560 people, with 748 family heads, 354 rubber farmer heads of families, and 154 oil palm farmer heads of families. Gay and Dhiel (1992) explain that the number of samples for descriptive study is determined by 10% of the population. The population of rubber farmers in Sungai Paring Village, Cempaga Subdistrict, Kotawaringin Timur Regency is 354 households, thus 10% of 354 families is 35.4, and the number of samples picked is 35 families if the figure is rounded up. Meanwhile, the population of oil palm farmers in Sungai Paring Village, Cempaga Subdistrict, Kotawaringin Timur Regency is 154 families, thus if 10% of 154 households is 15.4, the number of samples chosen is 15 families. As a result, the sample size for this study was 50 farmer households.

Data Processing Methods and Data Analysis

The data received is quantitative data that is obtained directly from respondents in the form of individual or group topics, events or activities, and test results. The following analyses were used to answer the study's objectives, namely how much the contribution of women farmers, how much the amount of an outpouring of farm woman work time, and how the role of women farmers in protecting the environment in Sungai Paring Village, Cempaga Subdistrict, Kotawaringin Timur Regency.s:

The amount of an outpouring of farm woman work time

To calculate the amount of an outpouring of farm woman work time in rubber and oil palm farming activities were analyzed using HKP analysis, Hernanto (1991) states that labor is measured according to the amount of an outpouring of work in a farm as follows:

a. Total hours and total working days. This measure calculates all of the work outpourings from preparation to harvest using an inventory of working hours (1 day = 7 hours of work) then made it into total working days.
b. The man equivalent amount is the amount of work devoted to the entire production process, measured by men's workdays. This means that they must use the provisions based on wages, namely for men the value is 1 HKP, women 0,8 HKP and children 0,5 HKP.
This study calculates an outpouring of women's work time, so it can be calculated using a formula:

$$\text{HKP} = \frac{0{,}8\ x\ Hours\ x\ Total\ Days}{7\ Hours\ of\ Work}$$

After knowing the amount of HKP, then it will be classified according to the respective class category using the following formula (Djumanta et al, 2008) :

Determine the Range (R)

R = X max - X min
Information:
R : Range
X max : Biggest data
X min : Smallest data

Number of Classes (Sturges rule)

K = 1 + 3,3 log n
Information:
K : Number of Classes
N : Number of Data

Class Intervals (P)

$$P = \frac{R}{K}$$

Information:

P : Class Intervals
R : Range
K : Number of Classes

The amount of the contribution of an outpouring of farm woman work time in rubber and oil palm farming activities.

Answering the second purpose, wherein determining the amount of contribution of farm woman work time in rubber and oil palm farming activities, it can be seen with the formula:
Contribution of Women's Working Time = $\frac{Outpouring\ of\ womens\ working\ hours}{Total\ outpouring\ of\ work} x\ 100\%$

The amount of farm women income contribution in rubber and oil palm cultivation.

Answering the third objective, determining the quantity of farm women contribution in rubber and oil palm farming activities, a formula can be used:

Family Economic Contribution = $\frac{Income\ of\ Farm\ Women}{Total\ Family\ Income}$ X 100%

To address the fourth goal, which is to determine the role of women farmers in environmental protection, the relevant data will be acquired from the research results, which will be studied qualitatively, where the data obtained from the field is processed and then presented descriptively. In terms of qualitative analysis, it suggests the following processes for assessing qualitative data: Filtering data collected in the field that is still published in the form of descriptions or extensive reports, the report is reduced, summarized, and structured more systematically so that it is easy to understand.

Results and Discussion

An outpouring of Farm Woman Work Time in rubber and oil palm farming activities

According to Unu (2018), an outpouring of work time is the amount of time given to carry out a sequence of activities that are normally carried out inside and outside the household in units of time or hours. The number of work hours devoted/poured into an activity is influenced by labor productivity in an activity, which means that higher workforce productivity motivates workers to commit more time to work.

An outpouring of Farm Woman Work Time in rubber farming activities

The calculation results of an outflow of work time in rubber growing activities at Sungai Paring Village are shown in Table 2 as follows:

According to the findings of the calculations in Table 2, the high time of the outpouring of women farmers in rubber farming at rubber tapping activities is due to the fact that this activity is more frequently carried out by women farmers every day, an average hour a day is 6 hours or more. Women farmers have talent in rubber tapping because this activity requires a resilient and patient attitude in carrying out this activity, in order to avoid mistakes in tapping rubber skins that cause wounds on the cambium stem, then this work must be done patiently and also takes a long time because the rubber trees they tap in 1 hectare are approximatelyer trees, and on average, female farmers and Male farmers must tap 2 hectares of rubber per day, which translates to 800 rubber trees.

Table 2.
An outpouring of Farm Woman Work Time in rubber farming activities at Sungai Paring Village, 2020

No	Activities	Average of HKP
1	Shrubs Clearing	10.14
2	Plant stakes support/ Pengajiran Tanaman	1.62
3	Planting Hole Making	1.58
4	Planting	2.50
5	Fertilization	2.00
6	Weeding	3.89
7	Pest and Disease Control	0.05
8	Anticipation of Land Fires	1.10
9	Rubber Tapping	13.69
10	Latex Freezing	3.93
11	Latex Collection	1.30
12	Yield Transportation	0.58
13	Sales	0.53
Total		42.91

Source: Primary data processed, 2020
Information: HKP = Hari Kerja Perempuan/ Women's Work Day

The high level of shrubs clearing activities is due to the fact that many activities must be carried out, beginning with cutting down trees, planning and pruning, digging wood roots, eradicating reeds and weeds, and others, as well as other reasons because the area of agricultural land is too large, and the clearing activity is still done manually and takes a long time, but this activi The residents of Sungai Paring Village normally need more than two weeks to complete this operation, depending on how many hectares will be cultivated for clearing this rubber field. This is done manually with equipment like hoes and machetes, which takes a long time. Chemically, it is accomplished by spraying herbicides, with herbicides often being used for a shorter period of time. Women farmers in Sungai Paring Village play all roles in the outpouring of labor time, but the difference in HKP for each activity is determined by the length of time and the limits that occur from each completion of farming operations.

An outpouring of Farm Woman Work Time in oil palm farming activities

The calculation findings for the outpouring of working time on Oil Palm Farming operations in Sungai Paring Village are shown in Table 3, as follows:

Based on the calculation results, it is clear that the activities that take the most time are the shrubs clearing activities. The high activity of clearing the shrubs is due to the fact that there are many process activities that must be carried out beginning with felling trees, planning and pruning, pruning wood roots, eradicating grass and weeds, and others and other reasons due to the fact that The residents of Sungai Paring Village normally need more than two weeks to complete this operation, depending on how many hectares will be farmed for this oil palm field clearing. Women farmers in Sungai Paring Village play every position in the oil palm agricultural industry. outpouring of work time, but the difference between HKP for each activity depends on the length of time and the constraints that arise from each completion of activities in farming activities. The next largest activity is weeding, which has a high quantity of HKP because it is an activity of clearing land of weeds located in between oil palm plants so that in the cultivation of oil palm plants, weeding aims to free oil palm plants from disruption of weeds that develop in the land. Weeding is typically done by oil palm growers in Sungai Paring Village in two ways: manually and chemically. It takes a long time because it is done manually with equipment like hoes and machetes. This process takes around 8 days from cutting the weeds to completion. After that, the oil palm farmers clear the area under the palm trees, which takes about 4 days to finish. Whereas

spraying herbicides is done chemically, the usage of herbicides is faster and does not take as long as manual methods. Oil palm growers typically need a maximum of four days to work on it using a spray equipment.

Table 3.
An outpouring of Farm Woman Work Time in oil palm farming activities at Sungai Paring Village. 2020

No	Activities	Average of HKP
1	Shrubs Clearing	12.26
2	Plant stakes support/ Pengajiran Tanaman	2.25
3	Planting Hole Making	2.20
4	Planting	2.52
5	Disc Making	3.33
6	Fertilization	3.15
7	Weeding	6.70
8	Pest and Disease Control	0.89
9	Anticipation of Land Fires	1.59
10	Harvest/Pendodosan	0.18
11	Collection of Fresh Fruit Bunches (FFB)/Tandan Buah Segar (TBS) and the Shunting of All Fruits to the Collecting Place/tempat Penampungan Hasil (TPH)	1.32
12	Yield Transportation	1.01
13	Sales	0.20
Total		37.60

Source: Primary data processed, 2020
Information: HKP = Hari Kerja Perempuan/ Women's Work Day

Contribution of Women Farmers in Rubber Farming Activities

The contribution of women farmers in rubber farming activities can be seen in Table 4, as follows:

Table 4,
Contribution of Women Farmers in Rubber Farming Activities in Sungai Paring Village, 2020

No	Activities	Number of Working Hours	Total of Working Hours (month)	Percentage (%)
1	Shrubs Clearing	272	1.922	14,15
2	Plant stakes support/ Pengajiran Tanaman	253	1.922	13.16
3	Planting Hole Making	246	1.922	12,80
4	Planting	242	1.922	12,59
5	Fertilization	212	1.922	11,03
6	Weeding	200	1.922	10,41
7	Pest and Disease Control	14	1.922	0,73
8	Anticipation of Land Fires	56	1.922	2,91
9	Rubber Tapping	192	1.922	9,99
10	Latex Freezing	50	1.922	2,60
11	Latex Collection	100	1.922	5,20
12	Yield Transportation	44	1.922	2,29
13	Sales	41	1.922	2,13
Total Percentage				100,00

Source: Primary data processed, 2020

Rubber farmer woman's efforts in Sungai Paring Village that make a significant contribution, including bushes clearing, plant stake support activities, planting hole creating, planting, and

fertilizing. This is a strenuous activity that requires physical strength and is usually performed by men; however, the rubber farmer female respondents in Sungai Paring Village stated that their participation in this activity is to save time and to be able to accelerate the work; thus, they participate in this activity. In terms of maintenance and post-harvest operations, women farmers in Sungai Paring Village tend to be tiny, with a low contribution value, such as pest and disease control, yield sales transportation, latex freezing, and the anticipation of land fires. The low value of the contribution to this task is due to the fact that it does not take long and, according to women farmers in Sungai Paring Village, husbands or men may do it alone, thus most female respondents prefer to engage in other activities.

Contribution of Women Farmers in Oil Palm Farming Activities

The contribution of women farmers in oil palm farming activities can be seen in Table 5.

Table 5.
Contribution of Women Farmers in Oil Palm Farming Activities in Sungai Paring Village, 2020

No	Activities	Number of Working Hours	Total of Working Hours (month)	Percentage (%)
1	Shrubs Clearing	106	825	12,85
2	Plant stakes support/ Pengajiran Tanaman	110	825	13,33
3	Planting Hole Making	109	825	13,21
4	Planting	97	825	11,76
5	Disc Making	58	825	7,03
6	Fertilization	81	825	9,82
7	Weeding	94	825	11,39
8	Pest and Disease Control	40	825	4,85
9	Anticipation of Land Fires	37	825	4,48
10	Harvest/Pendodosan	11	825	1,33
11	Collection (TBS) and Shunting (TPH)	45	825	5,45
12	Yield Transportation	31	825	3,76
13	Sales	6	825	0,73
Total Percentage				100,00

Source: Primary data processed, 2020

The activities of an oil palm farmer woman in Sungai Paring Village whose contributions are significant, namely plant stakes support/pengajiran tanaman, planting hole creating, bushes cleaning, weeding, and planting. The results of the oil palm farmer female respondents' responses were almost identical to the results of the rubber farmer female respondents, namely that the oil palm farmer women respondents in Sungai Paring Village said that their participation in this activity was to minimize time and to be able to speed up the work, so the majority of respondents said they participate in this activity. In terms of maintenance and post-harvest activities, the activities of oil palm farmers women in Sungai Paring Village tend to be tiny, with a low contribution value, including sales, harvesting/pendodosan, produce transportation, anticipation of land fires, and pests and diseases control. The small value of the contribution to this activity is because it does not take long and, according to women farmers in Sungai Paring Village, husbands or men can do it alone, but there are also those who require physical strength or the activity is heavy, so that male personnel are more reliable, namely harvesting/pendodosan and yield transportation, so that most

Contribution of Women Farmers Income in Rubber and Oil Palm Farming in Sungai Paring Village

Based on the results of the calculation, it can be seen that the contribution of women farmers in farming to family income, the calculation results can be seen in Table 6.

Table 6.
Contribution of Women Farmers Income in Rubber and Oil Palm Farming, 2020

		Contribution of Women Farmers Income			
No	**Category**	**Rubber Farming (people)**	**Contribution (%)**	**Oil Palm Farming (people)**	**Contribution (%)**
1.	High	19	54.28	8	53.33
2.	Moderate	12	34.29	6	40.00
3.	Low	4	11.43	1	6.67
Total		35	100.00	15	100.00

Sources: Primary data processed, 2020

The contribution of rubber farmers' women income in the high category is 54.28 percent, with 19 women farmers; in the moderate category, it is 34.29 percent, with 12 women farmers; and in the low category, it is 11.43 percent, with 4 women farmers. Whereas for oil palm cultivation, the high category accounted for 53.33 percent with 8 female farmers, the intermediate category accounted for 40.00 percent with 6 female farmers, and the low category accounted for 6.67 percent with 1 female farmer. The findings of this study are confirmed by the findings of a study performed by Wawansyah et al. (2013) in Jannah (2019), which found that the money generated by fisherwomen in productive activities contributed considerably to the family income by 39,45 percent. In this context, it signifies that women's contributions to rubber and oil palm farming play a significant part in improving their family's income. Various impacts began to appear as a result of the spread of covid-19, resulting in the global Covid-19 pandemic. All countries are dealing with diseased people, which is causing changes in practically every element of human life. The COVID-19 pandemic has also had an impact on the home economic sector. According to the findings of Blazy et al. (2021), COVID-19 had a significant impact on the farmer problem and undermined the agricultural sector. The main effects noted were a fall in revenue, production losses due to difficulty in marketing through traditional channels, and challenges in managing the agricultural system due to restricted access to inputs and labor. Farmers have evolved to be more self-sufficient in order to overcome this: reduced planted area, quest for short marketing channels, diversification of production and reorientation to local market needs, mutual help among farmers. Women's participation in rubber and oil palm farming is an initiative to strengthen the family economy and environmental participation in the Covid 19 era. According to the findings of the study, women farmers devote a significant amount of time to the rubber and oil palm industries. Participation in rubber tapping, bush clearance activities, and pest control. According to the findings of the Basriwijaya Research (2019), the role of women farmers in rural areas is indeed very important; in addition to caring for the household and children, women farmers also work tTo earn additional income for her family, a woman can do a variety of jobs, including self-employment and rubber farming. According to Syahyuti and Sahat Pasaribu (2021), agricultural performance cannot be isolated from the role of women working in the agricultural sector. Women's roles in agriculture differ from those of males. Housewives and breadwinners are both positions that women play. Women are expected to be breadwinners, both primary and secondary, especially in households where the head of the family is a woman. Women in the agricultural sector are active in all aspects of the process, from planting to harvesting and post-harvesting. They typically work as family workers or as agricultural laborers. There are, nevertheless, women who work as primary farmers. Women make up about half of Indonesia's total population in agriculture, which is critical to the country's welfare and plays an essential role in growth, one of which is enhancing food and agriculture security through digitization. Various parties are working to strengthen women's roles in this regard. When women were oppressed and discriminated against, feminism evolved as a reaction (Thomas-Slayter et al., 1996; Oberhauser, 2000; Angeles, 2001; Cameron & Gibson-Graham, 2003; Enarson & Phillips, 2008; Elias & Rai, 2019). The feminist and environmental movements share common goals: to build a worldview that is not based on patriarchal ideologies and dominances in order to create a better society. The supremacy of women and the dominion of nature are inextricably linked (Astuti, 2012). Ecofeminists view the issue as systemic, involving economic, social, and political attitudes based on discrimination, competition, and violence. "Ecological feminists" want to reorganize society, to eliminate the hierarchy between man and

nature, as well as social stratification. In order to attain ecological justice/sustainability, it is important to engage in both a cultural and a political revolution. The contribution of women farmers' income in these two farming activities means that in this farming activity, the revenue that women obtain from both rubber and oil palm growing contributes to household income. Appendix 7 shows the maximum income of all rubber farming respondents, Rp. 1.600.000,00, and the lowest income obtained by the respondent, Rp. 800.000,00. Meanwhile, Appendix 8 shows the greatest income of all oil palm farming respondents, which is Rp. 1.600.000,00, while the lowest income earned by the respondent is Rp. 1.000.000,00.

Contribution of Women Farmers in Protecting the Environment in Rubber Farming

Based on the research results, it can be seen that the role of rubber farmer women in protecting the environment in the scope of their farming can be seen in Figure 1.

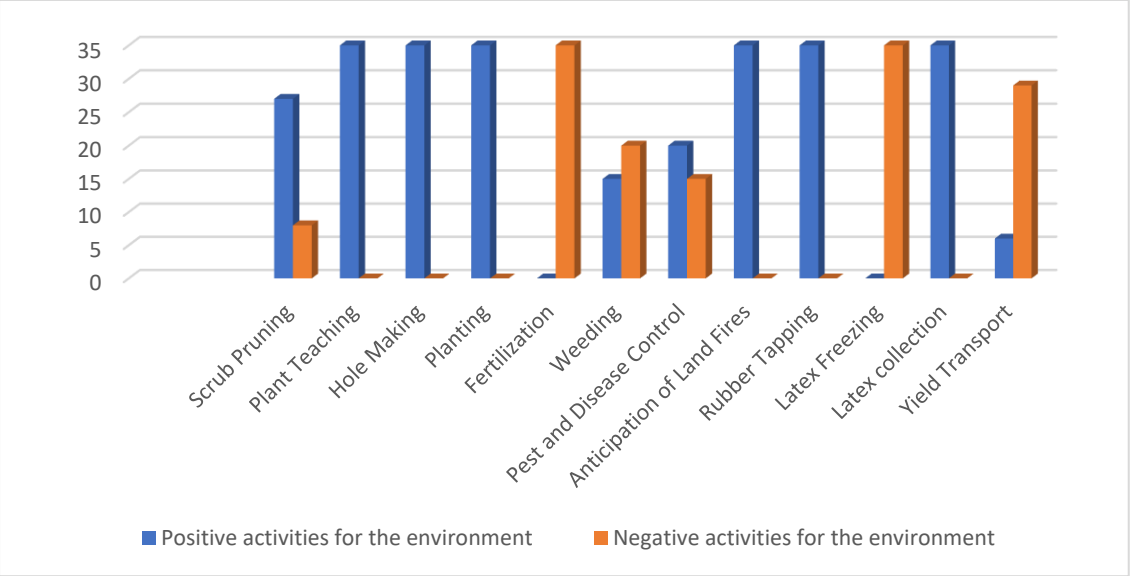

Figure 1. Rubber Farming Activities which have an impact on the Environment in Sungai Paring Village
(**Source:** Primary Data Processed, 2020)

The results of field observations shown in Figure 2 show that there are activities carried out by rubber farming women that have both positive and negative environmental values, with positive values if women farmers carry out their activities traditionally or manually in order to protect the environment, and negative values if they are carried out using chemicals and machines. Clearing shrubs by 27 people, plant stakes support/pengajiran tanaman by 35 people, planting holes making by 35 people, planting by 35 people, pests and diseases control by 20 people, anticipation of land fires by 35 people, rubber tapping by 35 people, latex collection by 35 people, and sales by 35 people are examples of activities with positive environmental values. The reason these activities have positive values is because women farmers in Sungai Paring Village conduct them manually or traditionally, such as in shrubs clearing activities, which have a positive role in the environment because women farmers still use manual methods using tools such as machetes and large logs to crush shrubs, implying that those female farmers are also aware of the importance of pr. The following activities have a negative value or can harm or contaminate the environment: fertilizing by 35 people, weeding by 20 people, latex freezing by 35 people, and yield transportation by 29 people. These tasks have a negative value since the women farmers in Sungai Paring Village do them with pesticides and equipment.

Contribution of Women Farmers in Protecting the Environment in Oil Palm Farming

Based on the results of the research, it can be seen that the role of oil palm farmers women in protecting the environment in the scope of their farming can be seen in Figure 2.

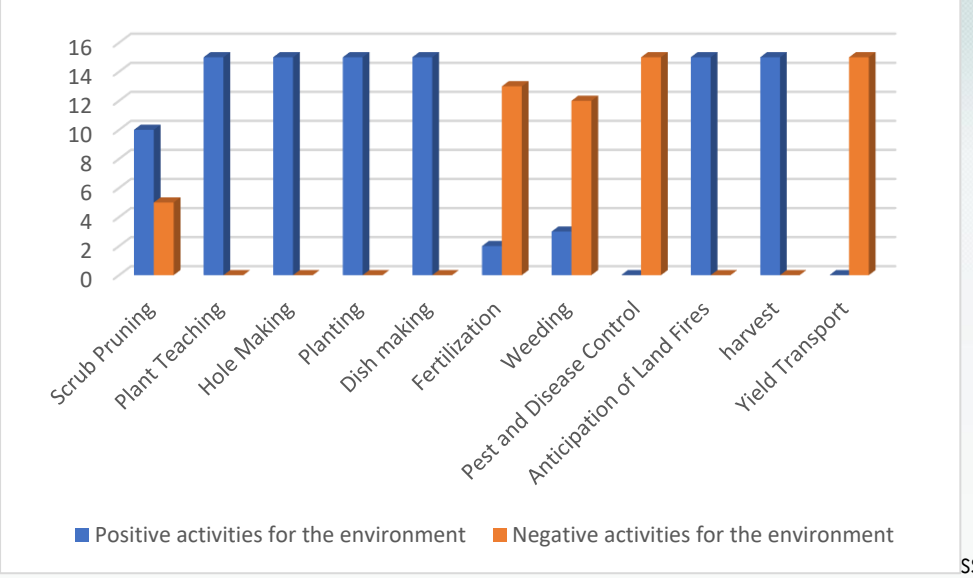

Figure 2. Oil Palm Farming Activities which have an impact on the Environment in Sungai Paring Village
(**Source:** Primary Data Processed, 2020)

The results of field observations shown in Figure 3 show that there are activities carried out by oil palm farming women that have both positive and negative environmental values, with positive values if women farmers carry out their activities traditionally or manually in order to protect the environment, and negative values if they use chemicals and machinery. Shrubs clearing by 10 people, plant stakes support/pengajiran tanaman by 15 people, planting holes making by 15 people, planting by 15 people, disk making by 15 people, anticipation of land fires by 15 people, harvesting/pendodosan by 15 people, collection (TBS) and shunting (TPH) by 15 people, and sales by 15 people are examples of activities with positive environmental values. The reason these activities have positive value is because women farmers in Sungai Paring Village perform them manually or traditionally, such as clearing the bush. Women farmers play an important role in environmental protection, as evidenced by the shrubs clearing by oil palm farmers women who still use machetes and other tools that do not harm the environment. According to the findings of the study and direct field observations, all rubber and oil palm farming actions aimed at conserving the environment have been carried out by the women farmers of Sungai Paring Village. This awareness is due to the fact that women farmers believe that conserving the environment is critical to the continuation of life in the future. Activities that are carried out in an unhealthy manner in order to contaminate the environment must be carried out for a variety of reasons, one of which is to speed up and ease the task.

Conclusion and Suggestion

Conclusions can be reached based on research findings:

1. The outpouring of farm woman work time in rubber and oil palm farming activities during the Covid 19 pandemic, female farmer responders in Sungai Paring Village is extremely essential, and it needs to be given a favorable response since women farmers contribute HKP on average for each activity. In rubber farming, the activities with the highest HKP value, notably rubber tapping, have been carried out by women farmers, and it is not uncommon for women to have specific skills at work. Women farmers' work teaches them patience, tenacity, and perseverance. So, in the rubber tapping activity, these skills are required, and according to the findings of research conducted by obtaining direct interviews with farmers, the tapping results between female farmers and male farmers differ, with male farmers' tapping results being poor and frequently hitting the cambium stems. Whereas in oil palm farming, the outpouring of work time with the highest HKP value is found in bushes clearing activities, this activity has seen a large number of female farmers participate. According to the findings of the interviews, the women farmers participated in this activity to assist their husbands in completing the activity. The huge amount of farm women work time spent on this job is related to the relatively big area of land

ranging from 2 to 4 hectares. The manual method is still employed, with minimal equipment such as a machete and heavy wood to smash the plants.

2. Working time contributions for women farmers in rubber farming and oil palm farming have the same contribution value, which is found in shrub clearing operations. The high level of shrubs clearing activities is due to the fact that many activities must be carried out, beginning with cutting down trees, planning and pruning, digging wood roots, eradicating reeds and weeds, and others, as well as other reasons because the area of agricultural land is too large, and the clearing activity is still done manually and takes a long time, but this activi The residents of Sungai Paring Village normally need more than two weeks to complete this operation, depending on how many hectares will be cultivated for clearing this rubber field. This task is still carried out manually with implements such as hoes, machetes, and large pieces of wood.

3. The contribution of women's income to rubber farming is 54.28 percent in the high category, with 19 female farmers, 34.29 percent in the medium category, with 12 female farmers, and 11.43 percent in the low category, with 4 female farmers. Whereas the top category for oil palm cultivation was 53.33 percent with 8 female farmers, the medium category was 40.00 percent with 6 female farmers, and the low category was 6.67 percent with 1 female farmer. In Sungai Paring Village, women farmers play a significant part in maintaining the family's economy. It is clear from the income of Rp. 1.600.000,00, which is considered very significant, that this revenue contributes half of the total household income.

4. Overall, women farmers play a part or contribute to environmental protection through a variety of rubber and oil palm farming operations. In terms of each activity, on average, rubber and oil palm women farmers continue to utilize manual methods, indicating that women farmers are concerned about environmental protection. Even while some actions are still regarded insufficient to safeguard the environment, this may be demonstrated from the initiative as a woman farmer not to do or reduce farming activities that are believed to have a detrimental influence on the environment. Given that female farmers have recognized the need of sustainable agriculture, this study is being proposed to the relevant authorities in the expectation that it would bring solutions to agricultural problems that are harmful to the environment. Sungai Paring Village, Cempaga Subdistrict, should be put to the Kotawaringin Timur Regency Agriculture Office's PPL list. As a result, it is critical to conduct this research in order to optimize the process of advising and mentoring farmers in farm development. Farmers will be able to carry out their agricultural operations in the most effective way possible as a result of this. It is critical for the Environmental Service Office to raise farmers' understanding of the importance of environmental protection in order to achieve sustainable agriculture.

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