



Sustainability of Palm Oil Company CSR in Supporting Village Status Change

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Article Information Abstract

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The existence of palm oil companies should have an impact on villages around oil palm companies. However, the status of villages according to the developing village index around oil palm companies are still developing villages. The purpose of this study was to determine the sustainability status of the palm oil company's CSR program in supporting changes in village status. This research was conducted in Kubu Raya Regency with 12 villages and 12 oil palm companies. This study is based on the similarity of indicators between CSR programs and the indicators of the developing village index. The data collected includes primary data and secondary data. The analysis technique uses multidimensional scaling Rapfish. The results of the study show that the sustainability status of the CSR program has the social dimension of unsustainable status with a sustainability value of 24.56, the economic dimension with a value of 57.67 with moderately sustainable status and the environment with a value of 74.27 with moderately sustainable status. The results of the 2019-2021 IDM continue to increase, but the economic resilience index has the lowest value when compared to the social and environmental resilience index.

INTRODUCTION

Village development, as mandated by the Law of the Republic of Indonesia Number 6 of 2014 concerning Villages, aimed at improving the welfare and quality of life of rural communities and reducing poverty through: (1) providing basic needs; (2) developing facilities and infrastructure; (3) developing local economic potential; and (4) sustainable use of SDA-Environment (Law of RI, 2014).

The level of village development based on the Regulation of the Minister of Villages, Development of Disadvantaged Regions, and Transmigration of the Republic of Indonesia Number 2 of 2016 concerning the Developing Village Index (IDM), is divided into 5 categories, namely (1) very underdeveloped, (2) underdeveloped, (3) developing, (4) advanced, and (5) independent (Regulation of the Minister of Villages, the Development of Disadvantaged Regions, 2016). Village development needs to be directed at the realization of an "independent village", namely a village where the community has a high enthusiasm for development, has the ability to identify village problems, develop plans to solve problems and implement the plan as efficiently and effectively as possible, based on natural resources and funds from the rural communities, and are able maintain continuity of the development process (Tjokrowinoto, 2012).

The Developing Village Index (IDM) is a mixed index formed based on three indices, namely the social resilience index, the economic resilience index and the ecological or environmental resilience index. The indicator set developed in the Developing Village Index is developed based on the concept that to get to a developed and independent village, a sustainable development framework is needed where social, economic, and ecological aspects become complementary forces and maintain the potential and ability of the village to prosper village life. Sustainable development has three pillars, namely economic, social and ecological aspects, which are often called the 3P (profit, people, planet)

(Cato, 2009 ;World Bank, 2012). According to Munasinghe, 1993 sustainable development is development based on three main points of view, namely economic, social and environmental as well CSR (Chaudhary, 2018; Farooq et al., 2014; Nejati and Ghasemi, 2012) This is also mention by Salim, 2010 that sustainable development is multidimensional, the sustainable development simultaneously includes mainly three main dimensions: economic sustainability, socio-cultural and political sustainability, and the environmental sustainability in a space global scope.

Oil palm plantations in West Kalimantan Province are the 2nd largest in Indonesia with a distribution area, one of which is Kubu Raya Regency. The potency of oil palm plantations in Kubu Raya Regency is 115,026 Ha with 762 farmers. The amount of palm oil production from 2015 also continued to increase. In 2015 as many as 91,351 tons, 2016 106,602 tons, 2017 120,146 tons and in 2018 147,887 tons (BPS, 2020).

Commitment from the government in improving the welfare of the people in the village must be supported by all parties, not only the community but stakeholders involved in village development including oil palm companies. This is because the distribution of village status around oil palm plantations is in underdeveloped and developing villages.

The existence of a company in a community area should be able to bring benefits to the community itself in terms of economic, social, and environmental aspects (Gamau, Le Billon and Spiegel, 2015; LeClerc and Keeling, 2015; Veltmeyer and Bowles, 2014; Virah-Sawmy, 2015) The company is an institution that cannot be separated from the role of humans and the environment and will not be able to achieve balance and sustainability without paying attention to the roles of various stakeholders around it (Wanvik, 2016). Empirically, the economic function of the palm oil industry has been proven by various experts, including sources of foreign exchange and state income, regional economic development, and increasing farmers'

income (World Growth, 2011; Rofiq, 2013; Purba and Sipayung, 2017 ;PASPI, 2016). The socio-cultural function of the palm oil industry has also been empirically proven, including its role in rural development (improves quality of life) and poverty reduction (World Growth, 2011; Rofiq, 2013; PASPI, 2016). The ecological aspects of oil palm plantations include the preservation of the carbon dioxide and oxygen cycle (the process of photosynthesis, which absorbs carbon dioxide from the earth's atmosphere and produces oxygen into the earth's atmosphere), restoration of degraded land, conservation of soil and water, increasing biomass, and land carbon stocks. In fact, reducing emissions of greenhouse gases/peatland restoration (Melling, Hatano and Goh, 2005).

In practice, the implementation of CSR programs aims to make the community receiving the program well empowered and obtain maximum benefits from the CSR program. In reality, the implementation of CSR is not as easy as what is written on paper, often the benefits received by both the company and the community are not optimal. Companies generally carry out CSR programs in the form of spontaneous or temporary charity and have not yet reached the level of community development. As a result, friction or conflict often occurs between local communities and companies and the implementation of CSR in the form of charity will not help local governments much in dealing with problems such as high poverty, unemployment and social damage. This is also comparable to the fact that there are still many villages with underdeveloped village status and developing around oil palm plantations.

The implementation of CSR based on the Regulation of the Minister of Agriculture Number: 07/Permentan/OT.140/2/2009 are concerning Guidelines for the Assessment of Plantation Businesses, there are several indicators in common with the Developing Village Index (IDM) both from the social, economic and environmental dimensions. Optimizing the use of CSR in village development that refers to the

similarity of these indicators will change the status of villages around oil palm plantations from underdeveloped villages and develop into developed and independent villages. For this reason, it is deemed necessary to make efforts to encourage the acceleration of the formation of independent villages by synergizing with oil palm business actors through CSR programs. This is also in line with the concept of implementing CSR around the plantation location, namely Triple Three Partners where in planning and realizing CSR involves the community, government and companies (Sultrawan Leledundu Renggaala, Juhaepa and Tanzil, 2020).

An analysis of the sustainability of the CSR management of palm oil companies is needed to provide an overview for stakeholders in determining the direction of development of the use of CSR for village development in order to support the acceleration of the realization of an independent village in Kubu Raya Regency. In this study, there are 3 aspects as dimensions of sustainability, namely social, economic and environmental dimensions. The purpose of this study is to describe the sustainability status of palm oil companies' CSR programs in supporting changes in village status in Kubu Raya district and provide policy recommendations for managing CSR programs in Kubu Raya Regency.

These two research objectives are important to do because the existence of palm oil companies that should be able to increase IDM through CSR did not materialize. This is proven by the fact that there are still many villages with underdeveloped village status and development around oil palm plantation companies. Based on this, there is a need for research related to how the current condition of CSR can be continued from a socio-economic and environmental perspective. Policy recommendations for managing CSR programs are also important to improve village status by including indicators in determining IDM, as a follow-up so that they can contribute to improving village status. So it is hoped that the benefits of the existence of palm oil companies

through CSR can be felt by the local community, to realize an independent village.

RESEARCH METHODS

This research was carried out in Kubu Raya Regency. The types of data used in this research are primary data and secondary data. The sample in this study were respondents who knew the concept of sustainable development (government) and industry players (palm oil companies) as well as community leaders who played an active role in village development, so that the selected respondents were quite representative. Respondents from government elements include the Regional Planning and Development Agency (Bappeda) of Kubu Raya Regency, the Kubu Raya Regency Plantation Service, the Kubu Raya Regency Investment and One Stop Integrated Service Office, the Kubu Raya Regency Village Government and Community Empowerment Service, the Regency Environment Agency. Elements of industry are from Palm Oil Companies with a total of 12 companies, and the Community elements are represented by village heads with a total of 12 village heads.

The data analysis method using the sustainability analysis method is carried out with a Multi-Dimensional Scaling (MDS) approach called Rap-CSR, which is a modified approach from the Rapfish program (Rapid Appraisal Techniques for Fisheries) (Pitcher TJ and Preikshot D, 2001)(Pitcher TJ et al., 2013). The stages of determining the sustainability status of CSR (Corporate Social Responsibility) are as follows: (a) Determining the attributes of each dimension of sustainability and identifying them through literature review and field observations. Attributes on the social dimension include (1) building health facilities for the community, (2) providing medical personnel, (3) building educational facilities, (4) providing teaching staff, (5) providing educational facilities, (6) build facilities for houses of worship, (7) provide clerics/clerics, (8) provide facilities for worship,

(9) build sports facilities, (10) provide sports coaches, (11) provide sports facilities, (12) provide scholarships for the community, (13) mutual cooperation activities participated in/supported by the company, (14) the emergence of conflicts, (15) conflict resolution.

Attributes on the economic dimension include: 1) Absorption of local workers, 2) Provision of training to the community, 3) Growth and development of community economic institutions, 4) Partnering with community cooperatives, 5) Improving the quality of road or road facilities. bridges, 6) Builds roads or bridge facilities. The attribute on the environmental dimension include: 1) waste management, 2) early warning disaster, 3) environmental pollution, 4) environmental management; (b) Assessment of attributes on an ordinal scale (scoring) based on survey and interview results, each attribute in each dimension is given a score based on the scientific judgment of the scorer. The score ranges from 0-4, which means starting from bad (0) to good (4) or vice versa.

Then the score for each of the attribute is analyzed multidimensionally to determine several points that reflect the position of CSR sustainability studied against two reference points, namely good points and bad points; (c) Ordination analysis with MDS to determine the position of sustainability status on each dimension in the sustainability index scale. The sustainability index scale studied has an interval of 0 percent - 100 percent, 0%-25% called as bad category (unsustainable), 25.01% - 50% less category (less sustainable), 50.01% - 75% sufficient category (moderately sustainable) and 75.01% - 100% good category (sustainable) (Fauzi A and Anna S, 2002); (d) Assess sustainability index and status on each dimension; (e) Conduct sensitivity analysis (leverage analysis) to determine sensitive variables affecting sustainability, sensitive attributes are obtained based on the results of leverage analysis which can be seen in the change in the ordinal Root Mean Square (RMS) on the

X axis. The greater the change in RMS, the more sensitive the role of these attributes to the increase in sustainability status; (f) Monte Carlo analysis to take into account the dimension of uncertainty.

Monte Carlo analysis, is an analysis that functions as an estimator of the effect of error at the 95 percent confidence interval. The value of this Monte Carlo index is compared with the MDS index. If the comparison of the two index values is small, it indicates that: (1) the error in scoring each attribute is relatively small, (2) the variation in scoring due to differences in opinion is relatively small, (3) the analysis process carried out repeatedly is stable, (4) data entry errors and data loss can be avoided.

Furthermore, level of village development based on Regulation of Minister of Villages, Development of Disadvantaged Regions, 2016 concerning the Developing Village Index, 2016, into some categories: (1) very underdeveloped, (2) disadvantage, (3) developing, (4) modern and (5) independent. with the threshold for each village classification as follows: (1) Very underdeveloped village: < 0.491 ; (2) Disadvantage villages: > 0.491 and < 0.599 ; (3) Developing Village: > 0.599 and < 0.707 ; (4) Modern village: > 0.707 and < 0.815 ; (5) Independent village: > 0.815 .

RESULTS AND DISCUSSION

Several attributes that influence the sustainability analysis on the social dimension include (1) building health facilities for the community, (2) providing medical personnel, (3) building educational facilities, (4) providing teaching staff, (5) providing educational facilities, (6) build facilities for houses of worship, (7) provide clerics/clerics, (8) provide facilities for worship, (9) build sports facilities, (10) provide sports coaches, (11) provide sports facilities, (12) provide scholarships for the community, (13) mutual cooperation activities participated in/supported by the company, (14) the emergence of conflicts, (15) conflict resolution.

The social dimension is a dimension that shows the relationship that exists between the company and the community around the location as well as the local government as a result of development and industrial activities that take place in the area. The existence of these activities will certainly have a positive or negative impact on social life (Bavorová *et al.*, 2021).

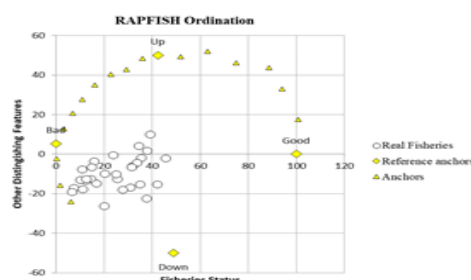


Figure 1. Ordination of the social dimension sustainability index.

Source: Data Processed, 2022

The ordinance of the results of the MDS analysis with Rap-CSR (Figure 1) illustrates that the position of the sustainability index value is in the range of 10-45 and tends to be on the bad side. Based on the results of the analysis, it is known that the CSR sustainability status of oil palm companies in supporting the improvement of village status in Kubu Raya Regency on the social dimension is included in the bad and less sustainable category. This is because the CSR that can be fulfilled by the company is still in the provision of facilities and infrastructure not yet at the development stage. In the health sector, all companies have clinics and health workers, but they are used for the benefit of company employees but the health facilities can also be used by the surrounding community if they want treatment. In the field of education, CSR assistance is in the form of scholarships, provision of educational staff, and provision of connecting schools for areas that are far from educational facilities. The liaison school provides a place and teaching staff for students to learn, but not all companies provide CSR assistance. Furthermore, for places of worship and sports/arts, CSR assistance is limited to the provision of infrastructure. The average conflict occurs in almost all companies even though the

conflict can finally be resolved. On average, mutual working activities carried out by the local community have been followed by the company, although they are not regularly scheduled.

According to the multidimensional scaling (MDS) procedure in (Fauzi A and Anna S, 2002). If the lower stress value indicates good fit, while a high S value indicates the opposite. The stress value has met the fit condition because $S < 25\%$. The statistical value obtained on the social dimension shows the stress value of 0.16 and R^2 of 93.3%, which means that the model using the current variables has explained 93.3% of the existing model. Furthermore, to determine the impact of random errors, the Monte Carlo simulation method was carried out on all dimensions. This analysis is to show the level of perturbation to the ordinance value (Pitcher TJ *et al.*, 2013). A Monte Carlo analysis was performed using the scatter plot method which shows the ordinance of each dimension. The results of the Monte Carlo analysis for the social dimension show that the CSR management of oil palm plantation companies has experienced perturbation, which is indicated by the spread plot. The social attributes used need to be analyzed using leverage analysis to find out which attributes are sensitive to affect the sustainability status of CSR. The results of the Monte Carlo analysis on the social dimension (see appendix).

Furthermore, the results of the sensitivity test (figure 2) through leverage analysis obtained 2 sensitive attributes that affect the sustainability index value on the social dimension, namely: Provision of sports facilities and scholarships for the community. Both attributes are factors that must be considered so that improvement efforts can then be made so as to increase the value of the sustainability index.

The provision of sports facilities is one of the main priorities of the 4 village development priorities, namely building village sports (Village Sports Facilities), because currently the majority of villages lack sports facilities. The purpose of providing sports facilities based on the Ministry of Villages, Development of Underdeveloped Regions and Transmigration is to encourage the

advancement of community empowerment, sport can be a unifying tool for citizens, a means of community entertainment and a place to channel talent for village youth so as to avoid various negative activities. regeneration of reliable athletes and the development of the community's economy. CSR assistance in the form of scholarships will encourage the improvement of human resources to create productive people who are able to advance regional development, especially local villages.

The slightest change in this attribute will have a major impact on the sustainability status of the social dimension. This can be seen from the value of the root mean square change of the attribute which is higher than the other attributes. The results of the analysis of social dimension leverage can be seen in the following figure:

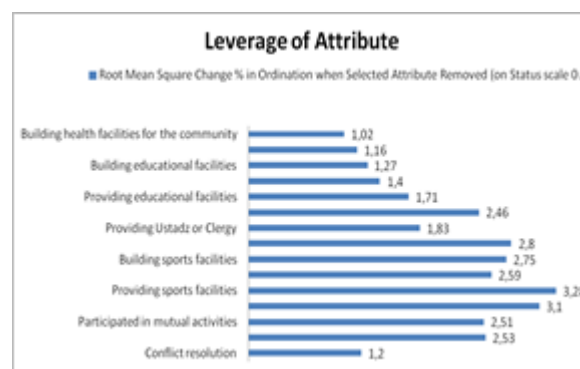


Figure 2. Results of Leverage Analysis on the social dimension

Source: Data Processed, 2022

If it is associated with an increase in the index of developing village, especially in the dimension of the social resilience index, some of these CSR indicators will certainly have an impact on increasing the social resilience index, however, some of these indicators have not been fully met by CSR assistance, especially in the health sector. The same result is also shown by (Kuzey *et al.*, 2021). The social resilience index is still mostly fulfilled from the local village fund budget. The development carried out by the village is more focused on the development of village infrastructure so that the condition of basic rural social infrastructure which includes

health services, access to education, public facilities, and settlement facilities is getting better and supports increasing the value of the Social Resilience Index. The Social Resilience Index (IKS) from 2019-2021 continues to increase (table 1). Some of the weaknesses of indicators on the social resilience index in the research sample villages are the unavailability of doctors, early childhood schools and the availability of ABC packages, training/courses, libraries, number of sports groups and also the availability of telephone signals/internet networks. Some of these indicators are of concern and require solutions to increase the village index, especially the social resilience index. The development of the social resilience index of the research sample villages from 2019-2021 can be seen in the following table:

Table 1. Development of the Social Resilience Index (IKS) of the Research Sample Villages for 2019-2021.

Villages	(Social Resilience Index) IKS		
	2019	2020	2021
Mekar Sari	0,7829	0.8171	0,8629
Tebang Kacang	0,6857	0.7086	0,8743
Sungai Asam	0,8457	0.8857	0,9143
Muara Baru	0,5600	0.5943	0,6400
Teluk Bakung	0,7086	0.7143	0,8286
Lingga	0,7943	0.9086	0,9086
Mega Timur	0,6971	0.8229	0,8286
Sungai Deras	0,7771	0.8171	0,8686
Sungai Bemban	0,7943	0.7829	0,8000
Rasau jaya Dua	0,8857	0.9657	0,9600
Bintang Mas	0,8400	0.8343	0,9086
Pematang Tujuh	0,7714	0.8000	0,9257

Source: West Kalimantan Village Community Empowerment Service (processed).

The analysis carried out on the economic dimension is divided into 6 attributes which include: Absorption of local workers, Provision of training to the community, Growth and development community economic institutions, Partnering community cooperatives, Improving

the quality of road or road facilities. bridges, Build roads or bridge facilities. The sustainability of the economic dimension is very important to know because it will have implications for the economic growth of the region and encourage the status of the village to become an independent village.

The results of the MDS analysis (figure 3) with Rapfish show that the ordinance position is between 42-82 and is included in the fairly sustainable category. On average, companies have fulfilled CSR assistance from these 6 attributes. Absorption of local labor is already above 50%, providing of employment for the local community (Crotty, J., 2016; Golovina, Nilsson and Wolz, 2013) The road and bridge infrastructure already exists, it is just that the quality of the roads and bridges is not that much with asphalt on average only from red soil or stone. Thus it can also be said that CSR supports the improvement of village infrastructure (Bavorová et al., 2021).

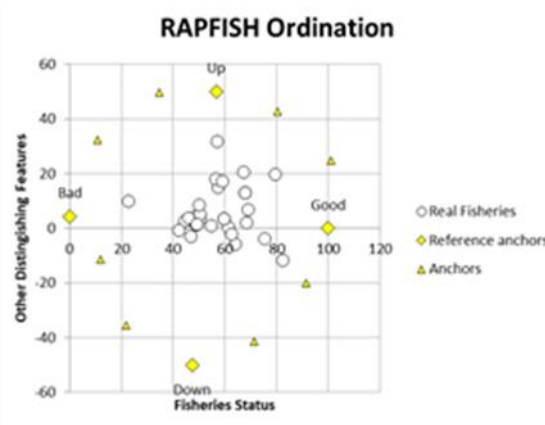


Figure 3. Ordination of the economic dimension of the sustainability index

Source: Data Processed, 2022

The statistical value obtained on the economic dimension shows a stress value of 0.23 and R² 90%, which means that the model using the current variables has explained 90% of the existing model. The results of the Monte Carlo analysis for the economic dimension show that the CSR management of oil palm plantation companies has experienced perturbation, which is indicated by the spread plot. The economic attributes used need to be analyzed using

leverage analysis to find out which attributes are sensitive to affect the sustainability status of CSR. The results of the Monte Carlo analysis on the economic dimension can be seen in appendix.

Furthermore, to determine the attributes that are sensitive and affect the sustainability index on this economic dimension, a leverage analysis is carried out. The results of the analysis of leverage (figure 4) show that there are 4 most influential attributes including: 1) Organizing training for the community, 2) Growing and fostering community economic institutions, 3) Improving the quality of road or bridge facilities, 4) Partnering with community cooperatives. The four attributes are factors that must be considered so that improvement efforts can then be made so as to increase the value of the sustainability index. The slightest change in this attribute will have a major impact on the sustainability status of the economic dimension. This can be seen from the value of the root mean square change of the attribute which is higher than the other attributes. The results of the economic dimension leverage analysis can be seen in the following figure:

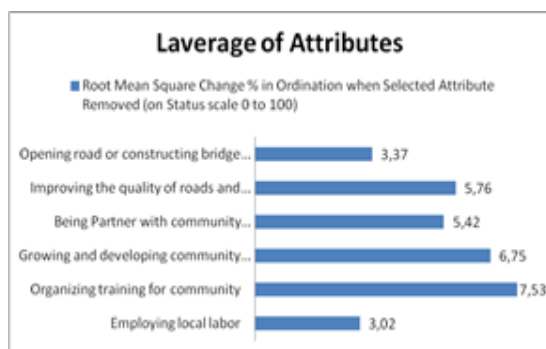


Figure 4. Results of Leverage Analysis on the economic dimension

Source: Data Processed, 2022

The developing village index places the initiative and strong community capacity as the main basis in the process of village progress and empowerment, one of which includes aspects of economic resilience. The existence of companies in the community has an impact on economic resilience, including employment, increasing economic activity of the surrounding community. CSR indicators on the economic

dimension will encourage an increase in the value of the economic resilience index. The absorption of labor will encourage an increase in the index in the production diversity sector and will indirectly affect the trade sector by encouraging the growth of markets, shops or stalls for the local community, create organizing training, fostering economic institutions, partnering with cooperatives will encourage an increase in the economic resilience index indicator in the economic institution sector. Building road or bridge facilities and improving the quality of road facilities will encourage an increase in the economic resilience index in the regional openness sector. Some of the weaknesses in the economic resilience index indicator are distribution access, namely the availability of post and logistics, credit access, namely the availability of banks and credit institutions. The results of the economic resilience index from 2019-2021 in the research sample villages continue to increase every year but when compared to the social dimension the value is lower (see table 2). This economic resilience index is a big concern for all villages and requires cooperation from all parties. Village community empowerment will be the main focus of the process of improving the quality, skills, capacity and capability of rural communities but not many companies have community empowerment programs. The development of the economic resilience index of the research sample villages can be seen in the following table:

Table 2. Development of the Economic Resilience Index (IKE) of the Research Sample Villages for 2019-2021

Villages	(Economic Resilience Index) IKE		
	2019	2020	2021
Mekar Sari	0,5167	0.5833	0,6833
Tebang Kacang	0,5000	0.5667	0,6167
Sungai Asam	0,5333	0.6667	0,8000
Muara Baru	0,4333	0.5167	0,6333
Teluk Bakung	0,4000	0.5500	0,7333
Lingga	0,7167	0.7167	0,8000
Mega Timur	0,5667	0.6500	0,7667

Sungai Deras	0,5500	0.6000	0,7500
Sungai Bemban	0,5333	0.5500	0,7500
Rasau jaya Dua	0,5833	0.7500	0,7333
Bintang Mas	0,5833	0.5833	0,7500
Pematang Tujuh	0,4167	0.5333	0,6000

Source: West Kalimantan Village Community Empowerment Service (processed).

In the environmental dimension, the impact of the company's activities can be seen and felt directly by the community around the company's location. The environmental dimension is the main dimension in maintaining the balance of natural resources and the environment so that they can be managed sustainably for future generations (Djamhur M., 2014). Determination of the index and sustainability of environmental dimensions is very important to do to increase the index of developing villages and demonstrate environmental sustainability in realizing sustainable village development (Li et al., 2021). Attributes that are considered to affect the sustainability of the environmental dimension include: waste management, early warning disaster, environmental pollution, and the last is environmental management.

The results of the MDS analysis with Rapfish show that the ordinance position is in the 54-90 range and is included in the fairly sustainable category (see figure 5). Ordination results tend to be in the "good" area, this is because the average company has fulfilled CSR assistance from the 4 attributes. The company has carried out waste management properly, disaster mitigation assistance, especially for fire disasters, has also been fulfilled. Environmental pollution and environmental management are also well managed. Indicators of environmental pollution, and waste treatment are levers on environmental quality indicators on the environmental resilience index. Disaster early warning, environmental management will encourage an increase in the value of potential indicators and disaster response. This aspect of disaster response includes evacuation routes, early warning, availability of disaster

management equipment, as well as disaster response training.

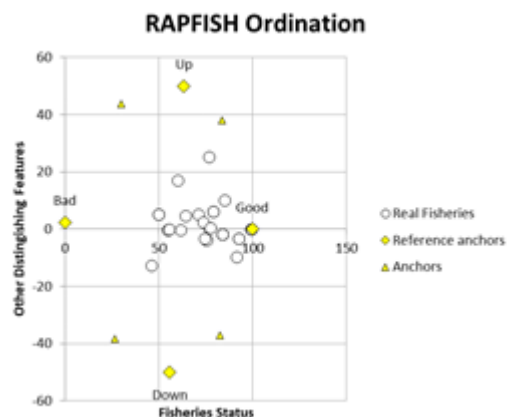


Figure 5. Ordination of the environmental dimension sustainability index.

Source: Data Processed, 2022.

The statistical value obtained on the environmental dimension shows a stress value of 0.24 and R² 90%, which means that the model using the current variables has explained 90% of the existing model. The results of the Monte Carlo analysis for the environmental dimension show that the CSR management of oil palm plantation companies has experienced perturbation as indicated by the scatter plot. However, when compared to the social and economic dimensions, the results of the Monte Carlo analysis on the environmental dimensions are better. The environmental attributes used need to be analyzed using leverage analysis to find out which attributes are sensitive to affect the sustainability status of CSR. The results of the Monte Carlo analysis on the environmental dimensions can be seen in appendix.

Furthermore, the results of the sensitivity test through leverage analysis obtained 3 sensitive attributes that affect the sustainability index value on the environmental dimension (figure 6), namely: environmental pollution early warning of disasters and environmental management. The three attributes are factors that must be considered so that improvement efforts can then be made so as to increase the value of the sustainability index. The slightest change in this attribute will have a major impact on the sustainability status of the environmental

dimension. This can be seen from the value of the root mean square change of the attribute which is higher than the other attributes. The results of the environmental dimension leverage analysis can be seen in the following figure:

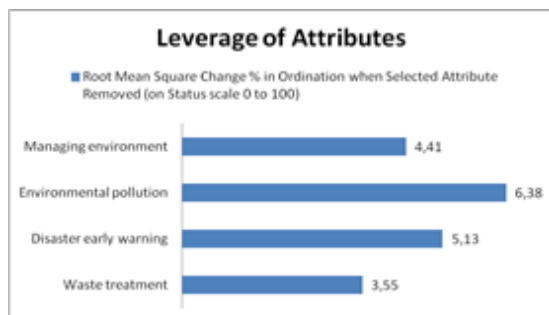


Figure 6. Results of Leverage Analysis on the environmental dimension.

Source: Data Processed, 2022

The environmental resilience index is one of the biggest levers for increasing the IDM value. This is because the environmental resilience index has the smallest number of indicators compared to the social and economic dimensions, so an increase in the value of the indicators in the IKL will have an impact on changes in the IDM value. Based on the value of the environmental resilience index in table 3 from year to year continues to increase except in Bintang Mas Village. Bintang Mas Village from 2019 to 2021 continues to experience a decline, this is due to the frequent occurrence of floods and the absence of disaster mitigation/response facilities in the village. When compared with the social resilience index and economic resilience index, the environmental resilience index value is better. This is also in accordance with the value of the sustainability status on the environmental dimension. The weakness of the environmental resilience index is an indicator of disaster susceptibility and disaster response. The disaster-prone that often occurs is the occurrence of floods and for disaster response indicators is the absence of disaster mitigation/response facilities in the village. The development of the Environmental Resilience Index (IKL) of the research sample villages for 2019-2021 can be seen in the following table:

Table 3. Development of Environmental Resilience Index (IKL) of Research Sample Villages for 2019-2021

Villages	(Environmental Resilience Index) IKL		
	2019	2020	2021
Mekar Sari	0,8000	0.7333	0,8000
Tebang Kacang	0,5333	0.8000	0,8667
Sungai Asam	0,7333	0.7333	0,8000
Muara Baru	0,8000	0.8000	0,7333
Teluk Bakung	0,6000	0.8000	0,8667
Lingga	0,6000	0.9333	0,9333
Mega Timur	0,6667	0.8667	0,8667
Sungai Deras	0,5333	0.5333	0,9333
Sungai Bemban	0,9333	0.9333	0,9333
Rasau jaya Dua	0,6000	0.6000	0,7333
Bintang Mas	0,6000	0.5333	0,4667
Pematang Tujuh	0,7333	0.6000	0,6000

Source: West Kalimantan Village Community Empowerment Service (processed).

The overall status of CSR sustainability can be seen in Figure 7. The results of the MDS analysis with Rapfish show that the ordination position is in the range of 25-60 and is included in the less sustainable category. Ordination results tend to be in the "bad" area. it can be assumed that the CSR programs of palm oil companies that have been implemented are not running optimally. This is because the CSR programs that have been implemented so far have not touched many indicators of the developing village index, especially the social resilience index and the economic resilience index. The social resilience index which consists of aspects of education, health, social capital and housing has not been touched by CSR programs. The economic resilience index which consists of aspects of the production diversity, trade, distribution access, credit access, regional openness, and economic institutions has also not been optimally touched by CSR programs, however CSR programs indirectly contribute to increasing the economic resilience index.

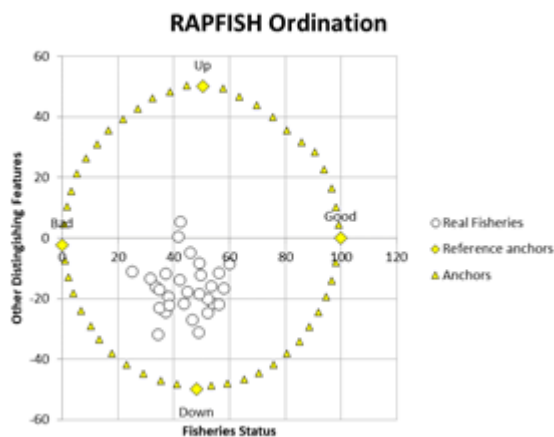


Figure 7. Multidimensional Sustainability Index Ordinance

Source: Data Processed, 2022

Monte Carlo analysis was used to see the error rate of MDS results with rapfish at a 95% confidence level. The results of the Monte Carlo analysis in table 4 show that the value of the sustainability index of the Multidimensional Scaling (MDS) is not much different from the index value of the results of the Monte Carlo analysis. According to (Fauzi A and Anna S, 2002). the value of the difference <5 identifies that the error in scoring each attribute is relatively small, the variety of scoring due to differences of opinion or assessment is relatively small, the analysis process carried out repeatedly is relatively stable, data errors and data are inaccurate lost can be avoided. The criteria for the development of the sustainability index value between the MDS results and the Monte Carlo results are as presented in the following table:

Table 4. Comparison of MDS and Monte Carlo Outcome Sustainability Index with 95% confidence interval

Development Criteria	Sustainability Index Value		
	MDS	Monte Carlo	Difference
Economic	57,60	57,50	0,13
Social	24,56	24,95	-0,39
Environment	74,27	73,15	1,12
Multidimensional	44,60	44,97	-0,37

Source: Data Processed, 2022

In order to find out the indicators studied in the MDS analysis are quite accurate and can

be scientifically justified, it can be seen from the stress value and the coefficient of determination (R²) as the output of the MDS. The output of the analysis is considered quite accurate and can be accounted for if it has a stress value less than 0.25 and the coefficient of determination (R²) is close to 100 percent (Kavanagh P and Pitcher T, 2004). The output of the analysis shows that all indicators analyzed are quite accurate and can be accounted for. This can be seen from the stress value and the coefficient of determination as presented in the following table:

Table 5. Statistical values obtained from the results of Rapfish analysis on all dimensions

Parameter	Eco.	Social	Envi	Multidimensional
Stress	0,23	0,16	0,24	0,15
R ²	90	93	90	94
Iterasi	3	3	3	3

Source: Data Processed, 2022

through leverage analysis in figure 8 obtained 5 sensitive attributes that affect the sustainability index value in multi dimensions, namely: Waste treatment, environmental pollution, disaster early warning environmental management, and employment. The attributes are factors that must be considered for later improvement efforts so as to increase the value of the sustainability index. These results are also in accordance with the results of the analysis of leverage on the social, economic and environmental dimensions where the test results on the environmental dimensions dominate compared to the economic and social dimensions. The results of multidimensional leverage analysis can be seen in the following figure:

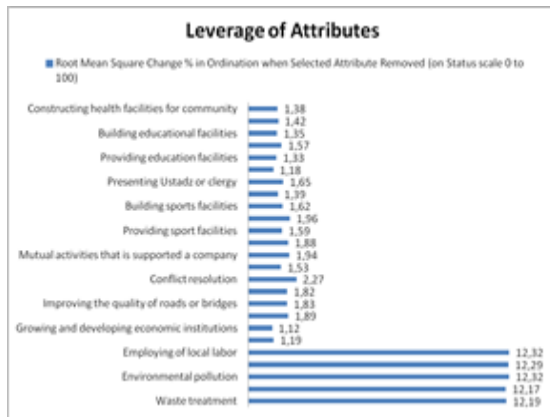


Figure 8. Results of Leverage Analysis on multidimensional

Source: Data Processed, 2022

The overall sustainability status of CSR in figure 9 shows that the social dimension tends to have a relatively lower value compared to the economic and environmental dimensions. Indicators on aspects of education, health that cannot be fulfilled by the CSR program cause the social dimension to have a low sustainability value. The economic dimension has also not been fully accommodated by the CSR program, causing the sustainability value of the economic dimension to run not optimally. In the flyover diagram the environmental aspect has a fairly high value. This indicates that the implementation of CSR in supporting changes in village status based on the developing village index is very good; many indicators on the environmental dimension are fulfilled by CSR programs.

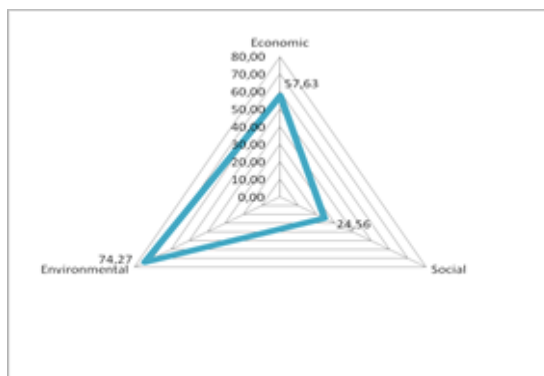


Figure 9. Sustainability analysis flowchart.

Source: Data Processed, 2022

Table 6 show the development of the status of the research sample villages based on the developing village index from 2019 to 2021 continues to increase. In 2019 the village was still dominated by developing village status and there were still underdeveloped villages, in 2020 it was dominated by developing and developed villages, and in 2021 it was dominated by developed and independent villages. This of course cannot be separated from the results of cooperation between companies, especially palm oil companies and also local governments and local village governments. The presence of oil palm plantations indirectly actually greatly contributes to the economic and social improvement of rural areas, which were previously backward and isolated and will become centers of economic growth in rural areas (Septiyarini, Kusri and Maswadi, 2020).

Village development has a fairly important role in national development projects. Village development has a very broad scope because it is the basis for sustainable development (Liu, 2018).

The purpose of village development is to realize the welfare of the community. Adisasmita, 2013 states that the purpose of village development is the realization of improving the welfare of rural communities which is directly carried out through increasing job opportunities, business opportunities, and income based on the approach of community development, business development, and human development; and indirectly is laying solid foundations for national development. Improving people's welfare is synonymous with increasing people's living standards. In line with this, Simangunsong, F. and Wicaksono, 2017 stated that village development is aimed at improving living standards and social welfare through policies, programs, and activities in accordance with the essence of the problem and priority of public needs.

Table 6. Development of IDM in Research Sample Villages

Villages	(Building Village Index)
	IDM

	2019	2020	2021	Realizing independent villages and sustainable development is now an important thing to do to help rural areas in alleviating poverty. Village Index Value Building the research sample villages, the economic dimension has the lowest value compared to the social and environmental dimensions. Economic development requires support through additional capital participation, production management, distribution, and marketing for productive-scale agricultural economic enterprises and other economic enterprises. This is also in line with Robert, F. C., Frey and Sisodia, 2021 that the framework for achieving sustainable development can be presented through micro-financing, social cooperation, entrepreneurship development.
Mekar Sari	0,6999	0.7113	0,7821	
Tebang Kacang	0,5730	0.6917	0,7859	
Sungai Asam	0,7041	0.7619	0,8381	
Muara Baru	0,5978	0.6370	0,6689	
Teluk Bakung	0,5695	0.6881	0,8095	
Lingga	0,7037	0.8529	0,8806	
Mega Timur	0,6435	0.7798	0,8206	
Sungai Deras	0,6201	0.6502	0,8506	
Sungai Bemban	0,7536	0.7554	0,8278	
Rasau jaya Dua	0,6897	0.7719	0,8089	
Bintang Mas	0,6744	0.6503	0,7084	
Pematang Tujuh	0,6405	0.6444	0,7086	
Source: West Kalimantan Village Community Empowerment Service (processed).				

Table 7. Status of Research Sample Villages and Existence of Palm Oil Companies

Oil Palm Plantation Company	Villages	(Building Village Index) IDM			Village Status		
		2019	2020	2021	2019	2020	2021
PT AAN	Mekar Sari	0,6999	0.7113	0,7821	Developing	Modern	Modern
PT NJP,	Tebang	0,5730	0.6917	0,7859	Disadvantage	Developing	Modern
PT PLK	Kacang						
PT CTB	Sungai Asam	0,7041	0.7619	0,8381	Developing	Modern	Independent
PT GAN	Muara Baru	0,5978	0.6370	0,6689	Disadvantage	Developing	Developing
PT GAN,	Teluk Bakung	0,5695	0.6881	0,8095	Disadvantage	Developing	Modern
PT KAS,							
PT PAL							
PT PWA	Lingga	0,7037	0.8529	0,8806	Developing	Independen t	Independent
PT BPK	Mega Timur	0,6435	0.7798	0,8206	Developing	Modern	Independent
PT MAR	Sungai Deras	0,6201	0.6502	0,8506	Developing	Developing	Independent
PT MAR	Sungai Bemban	0,7536	0.7554	0,8278	Modern	Modern	Independent
PT APL	Rasau jaya Dua	0,6897	0.7719	0,8089	Developing	Modern	Modern
PT PLD	Bintang Mas	0,6744	0.6503	0,7084	Developing	Developing	Modern
PT PLD	Pematang Tujuh	0,6405	0.6444	0,7086	Developing	Developing	Modern

Source: Data Processed, 2022

Based on the table 7, there are 3 villages with permanent status from 2020 to 2021, namely Mekar Sari village, Muara Baru village and Rasau Jaya Dua village, but when viewed from the index value of developing villages, it continues to increase. Some of the weaknesses of Mekar Sari village are the lack of medical personnel, both doctors and other health workers, there is no early childhood education, ABC packages and courses/training in the village, banking in the village is also non-existent, besides that there is no post and logistics. Muara Baru village also has several weaknesses, including the absence of medical personnel, both doctors and other health workers, who have minimal ABC banking packages in the village, besides that there is no post and logistics, internet access and public transportation modes. Rasau Jaya Village Two of the weaknesses are the minimal number of sports groups, limited market for the local community, no logistics post and no disaster response.

Seeing the above conditions, some of the weaknesses of these indicators can actually be met from the company's CSR, it's just that because of the limitations of the company implementing CSR, it has not been able to change the status in the village in the period 2020 to 2021. through CSR programs, it's just that the implementation of CSR is still not optimal. For example, changing the status of Muara Baru village from being left behind to developing and moving forward is certainly not easy, the company has actually made efforts to improve the community's economy through community empowerment programs, providing education through connecting schools and others, but these efforts have not been able to bring about change. the status of the village. This requires cooperation and support from all parties, not only from companies and the local village government.

CONCLUSION

Village development has a fairly important role in national development projects. Village development has a very broad scope because it is the basis for development. Village development is aimed at improving the quality of life and the

lives of rural communities. Many things have to be done in terms of village development.

Based on the results of the analysis using Rapfish for the CSR sustainability status of palm oil companies in supporting changes in village status in Kubu Raya Regency, the social dimension is unsustainable, while the economic and environmental dimensions are moderately sustainable.

The results of the Building Village Index 2019-2021 continue to increase, but the economic resilience index has the lowest value when compared to the social and environmental resilience index. Economic development requires support through additional capital participation, production management, distribution, and marketing for productive-scale agricultural economic enterprises and other economic enterprises.

REFERENCES

- Adisasmita, R. (2013) *Rural Development: Participatory Approach, Typology, Strategy, Concept of Village Center for Growth*. Yogyakarta: Graha Ilmu.
- Bavorová, M. *et al.* (2021) 'Agribusiness social responsibility in emerging economies: Effects of legal structure, economic performance and managers' motivations', *Journal of Cleaner Production*, 289, p. 125157. doi: 10.1016/j.jclepro.2020.125157.
- BPS (2020) 'Kubu Raya Regency in Figures 2020', *Badan Pusat Statistik*, p. 366.
- Cato, S. M. (2009) *Green Economics*. London Eathscan.
- Chaudhary, R. (2018) 'Corporate social responsibility and employee performance: a study among indian business executives.', *The International Journal of Human Resource Management*, pp 1–24.
- Crotty, J. (2016) 'Corporate Social Responsibility in the Russian Federation: A Contextualized Approach', *Bus. and Soc.*, 55, pp. 825–853.
- Djamhur M. (2014) *Zoning-Based Zoning-Based Development Model for Coastal Conservation Areas (Case in Weda Bay)*. Institut Pertanian Bogor.
- Farooq, O. *et al.* (2014) 'The impact of corporate social responsibility on organizational commitment: Exploring multiple mediation mechanisms.', *Journal of Business Ethics*, 125(4), pp. 563–580.
- Fauzi A and Anna S (2002) 'Evaluation of the Sustainability Status of Fishery Development: Application of the Rapfish Approach (Case

- Study of Coastal Waters of DKI Jakarta)', *Jurnal Pesisir dan Lautan*, 4(3), pp. 43–55.
- Gamu, J., Le Billon, P. and Spiegel, S. (2015) 'Extractive industries and poverty: a review of recent findings and linkage mechanisms.', *Extr. Ind. Soc.*, 2, pp. 162–176.
- Golovina, S., Nilsson, J. and Wolz, A. (2013) 'Members' choice of production cooperatives in Russian agriculture', *Post-Communist Econ*, 25, pp. 465–491.
- Kavanagh P and Pitcher T (2004) 'Implementing Microsoft Excel Software For Rapfish A Technique For The Rapid Appraisal Of Fisheries Status', *Fisheries Center Research Reports*, 12(2), pp. 1–75.
- Kuzey, C. *et al.* (2021) 'CSR performance and firm performance in the tourism, healthcare, and financial sectors: Do metrics and CSR committees matter?', *Journal of Cleaner Production*, 319(August), p. 128802. doi: 10.1016/j.jclepro.2021.128802.
- Law of RI (2014) *Law of the Republic of Indonesia Number 6 of 2014 concerning Villages*.
- LeClerc, E. and Keeling, A. (2015) 'From cutlines to traplines: post-industrial land use at the pine point mine.', *Extr. Ind. Soc.*, 2, pp. 7–18.
- Li, X. *et al.* (2021) 'Index system of sustainable rural development based on the concept of ecological livability', *Environmental Impact Assessment Review*, 86(September 2020), p. 106478. doi: 10.1016/j.eiar.2020.106478.
- Liu, Y. (2018) 'Research on the urban-rural integration and rural revitalization in the new era in China', *Acta Geogr. Sin*, 73(4), pp. 637–650.
- Melling, L., Hatano, R. and Goh, K. J. (2005) 'Soil CO₂ Flux From Ecosystem in Tropical Peat Land of Serawak', *Malaysia Tell us*, 57, pp. 1–11.
- Munasinghe, M. (1993) *Environmental Economics and Sustainable Development*. World Bank. Washington DC (USA): Washington DC (USA): The International Bank for Reconstruction and Development/The World Bank.
- Nejati, M. and Ghasemi, S. (2012) 'Corporate social responsibility in Iran from the perspective of employees.', *Social Responsibility Journal*, 8(4), pp. 578–588.
- PASPI (2016) 'Myths and Facts of the Indonesian Palm Oil Industry in Global Social, Economic and Environmental Issues.'
- Pitcher TJ *et al.* (2013) 'Improvements to Rapfish: A Rapfish Evaluation Technique for Fisheries Integrating Ecological and Human Dimensions', *Jurnal of Fish Biologi*, 83, pp. 865–889.
- Pitcher TJ and Preikshot D (2001) 'RAPFISH: A Rapid Appraisal Technique To Evaluate The Sustainability Status Of Fisheries', *Fisheries Reasearch*, 49, pp. 255–270.
- Purba, J. H. V and Sipayung, T. (2017) 'Indonesian Oil Palm Plantation in the Perspective of Sustainable Development', *Jurnal Ilmu-Ilmu Sosial Indonesia*, 43(1), pp. 81–94. Available at: <http://jmi.ipk.lipi.go.id/index.php/jmiipk/article/view/717/521>.
- Regulation of the Minister of Villages, Development of Disadvantaged Regions, and T. of the R. of I. (2016) *Regulation of the Minister of Villages, Development of Disadvantaged Regions, and Transmigration of the Republic of Indonesia Number 2 of 2016 concerning the Developing Village Index (IDM)*.
- Robert, F. C., Frey, L. M. and Sisodia, G. S. (2021) 'Village development framework through self-help-group entrepreneurship, microcredit, and anchor customers in solar microgrids for cooperative sustainable rural societies', *Journal of Rural Studies*. doi: doi:10.1016/j.jrurstud.2021.07.01.
- Rofiq, H. N. (2013) *Economic analysis of oil palm plantation and oil palm productivity in effect on per capita income in Indonesia*. The Netherlands: The Huge.
- Septiyarini, D., Kusriani, N. and Maswadi (2020) *Dynamics of Village Development in Palm Oil Plantation Circle*. 1st edn. Edited by I. Agusta and R. Sulistiawati. Pontianak: Derwati Press.
- Simangunsong, F. and Wicaksono, S. (2017) 'Evaluation of Village Fund Management in Yapen Islands Regency Papua Province (Case Study at Pasir Putih Village, South Yapen District)', *Open Journal of Social Sci-ences*, 5(3), pp. 250–268.
- Sultrawan Leledundu Renggaala, H., Juhaepa and Tanzil (2020) 'Implementation of the Corporate Social Responsibility Program of PT. BNP in the Community Around the Plantation Location (Study in Mokoau Village, Angata District, South Konawe Regency)', pp. 201–208.
- Tjokrowinoto, M. (2012) *Development Dilemmas and Challenges*. Pustaka Pelajar.
- Veltmeyer, H. and Bowles, P. (2014) 'Extractivist resistance: the case of the Enbridge oil pipeline project in Northern British Columbia', *Extr. Ind. Soc.*, 1, pp. 59–68.
- Virah-Sawmy, M. (2015) 'Growing inclusive business models in the extractive industries: demonstrating a smart concept to scale up

positive social impacts.’, *Extr. Ind. Soc.*, 2, pp. 676–679.

Wanvik, T. I. (2016) ‘Governance transformed into Corporate Social Responsibility (CSR): New governance innovations in the Canadian oil sands’, *Extractive Industries and Society*, 3(2), pp. 517–526. doi: 10.1016/j.exis.2016.01.007.

World Bank (2012) *Inclusive green growth : The pathway to sustainable development*. Washington, D.C.

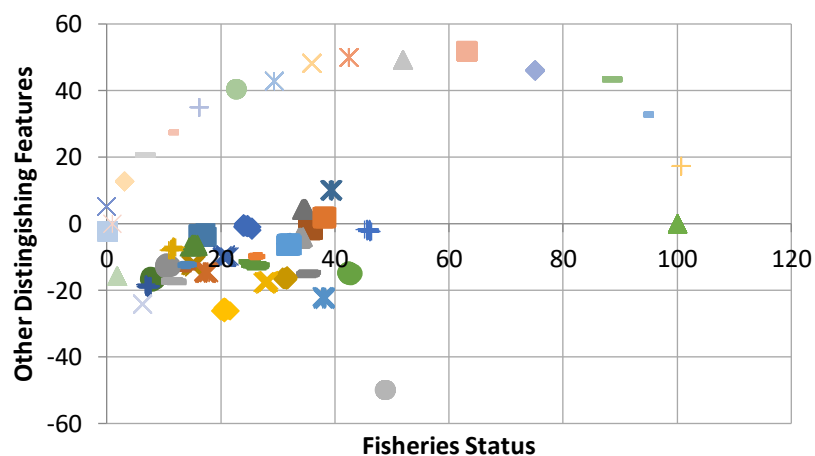
World Growth (2011) ‘The economic benefit of palm oil to Indonesia’. Arlington: World Growth.

APPENDIX 1.

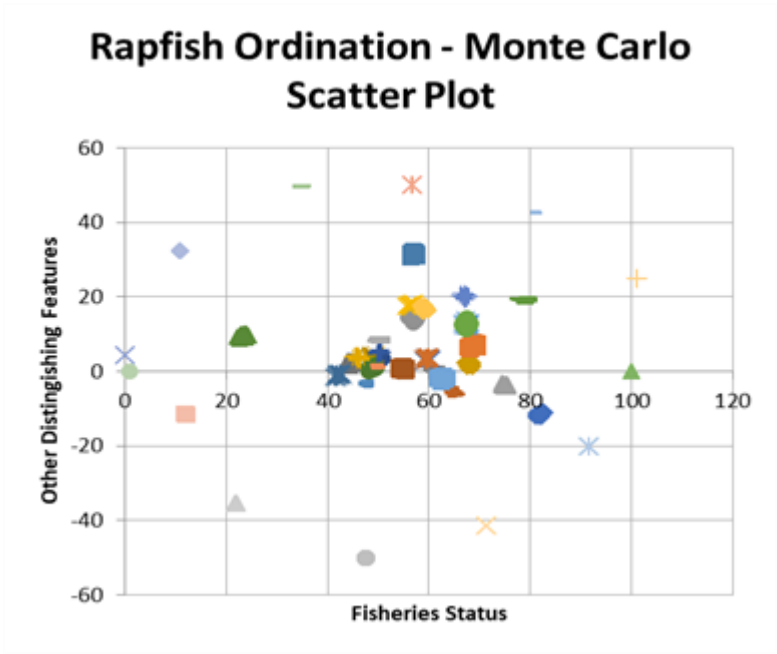
The Result of the Monte Carlo analysis

a. Social Dimension

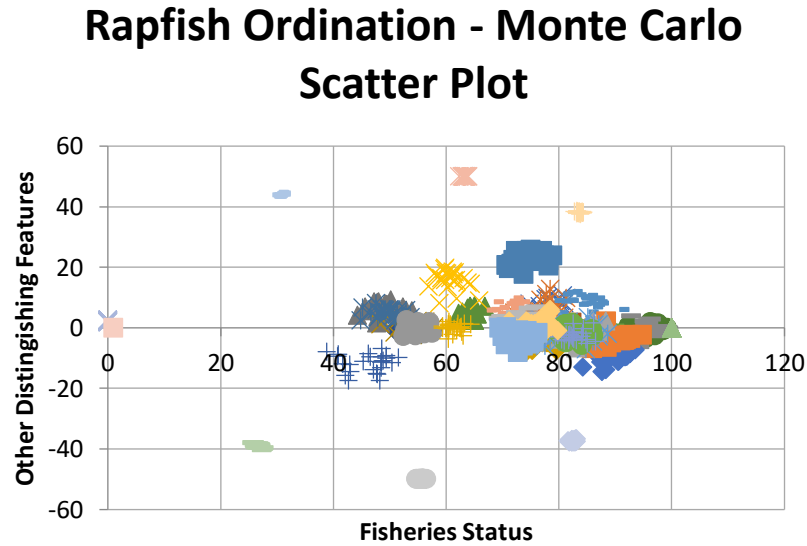
Rapfish Ordination - Monte Carlo Scatter Plot



b. Economic Dimension



3.Environmental Dimension



4. Multi Dimension

Rapfish Ordination - Monte Carlo Scatter Plot

