

The Economic Impact of The Implementation of The Lucky Waste Program in the Oyster Mushroom Cultivation Farmer Group of Payakabung Village, North Indralaya Sub-District, Ogan Ilir District

Saddam Husein¹, Abdul Roni Heryanto², Kurniawan Bagus Dwi Prayogo³, Muhammad Ichsani Hadjri⁴

^{1,2,3} PT PLN Indonesia Power UP Indralaya

⁴ Lecturer of Master of Management, Economic Faculty, Sriwijaya University, Palembang, Indonesia

Abstract:

This study aims to determine and analyze the economic impact of the implementation of the Bertuah Waste Program in the Oyster Mushroom Farmer Group of Payakabung Village, North Indralaya District, Ogan Ilir Regency. The Bertuah Waste Program is a flagship Corporate Social Responsibility (CSR) program of PT PLN Indonesia Power UBP Keramasan UP Indralaya. This program aims to have an impact on improving the community's economy and as a form of effort to overcome environmental problems around Payakabung Village, such as the generation of palm frond waste which is a factor in the severe condition of forest and land fires, as well as the generation of baglog waste which is used as liquid smoke. The method used in this research is a qualitative approach with a descriptive method. The results showed that the Bertuah Waste Program is a form of development and innovation from oyster mushroom cultivation activities in Payakabung Village which has been running since 2022. The Bertuah Waste Program has shown impacts, both in terms of economy and environment for the community, especially members of the Oyster Mushroom Farmer Group and Srikandi Payakabung. The economic impact is shown in the form of savings in raw material costs, savings in vegetable pesticide costs, and increased income for group members.

Keywords: *Corporate Social Responsibility (CSR), Bertuah Waste Program, Palm Frond Waste, Baglog Waste*

1. Introduction

One form and strategy in realising the concept of development is community-focused empowerment. In the empowerment strategy, the community is no longer seen as an object, but is considered as a subject and one of the actors in the concept of development. Widjayanti (2011) explains that the main responsibility in the concept of development is the realisation of a society that is empowered or has power and strength or ability. The strength in question can be seen and assessed from several aspects, such as physical and material aspects, economic, institutional, cooperation, intellectual strength, and joint commitment in applying empowerment principles. Community empowerment itself can be realised through active participation from the community facilitated by the existence of empowerment actors.

The company as one of the economic drivers in the community can play a role in implementing the concept of development through community-focused empowerment. Uly and Kelib in Bahri and Panorama (2021) explain that good companies are not only required to generate profits, but are also required to be able to care about environmental sustainability and the economy of the community or better known as Corporate Social Responsibility. Law of the Republic of Indonesia Number 40 Year 2007 on Limited Liability Companies states that social and environmental responsibility is a form of corporate participation in sustainable economic development and improving the quality of the environment.

Table 1. Number of Poor Population in Districts/Cities of South Sumatra Province 2022-2023

Regency	Amount Poor Population (Thousand People)	
	2022	2023
Ogan Komering Ulu	44.20	44.11
Ogan Komering Ilir	113.79	114.48
Muara Enim	73.53	73.24
Lahat	65.39	63.36
Musi Rawas	55.80	59.75
Musi Banyuasin	102.24	101.63
Banyuasin	88.55	85.88
South Ogan Komering Ulu	39.61	39.30
Ogan Komering Ulu	69.69	69.91
Ogan Ilir	54.55	59.33
Four Mace	31.06	30.78
Penukal Abab Lematang Ilir	23.14	21.72
North Musi Rawas	36.65	36.68
Palembang city	181.65	179.45
Prabumulih City	22.12	22.33
Pagar Alam City	12.05	12.73
Lubuk City Linggau	30.68	31.02
Total	1,044.69	1,045.68

Source : Central Statistics Agency Regency . Ogan Ilir in 2023

Based on table 1 above, it can be seen that the number of poor people in Ogan Ilir Regency has increased when compared to the previous year, which amounted to 4,780 people. According to the Integrated Social Welfare Data (DTKS) of Ogan Ilir Regency in 2021 in Dessy (2022), there were 4,938 poor families in North Indralaya District spread across 15 villages and 1 kelurahan.

Payakabung Village is one of the villages located in North Indralaya Sub-district with an area of 1,141 Ha which is divided into 3 hamlets, namely Hamlet 1, Hamlet 2, and Hamlet 3. According to the 2022 Payakabung Village Profile Document, Payakabung Village is inhabited by 2,640 residents with a total of 818 households. Based on the Poverty Data of Payakabung Village in 2023, there are 125 Poor Families in Payakabung Village.

Based on the explanation above, PT PLN Indonesia Power UBP Keramasan UP Indralaya implemented the Oyster Mushroom Cultivation Program in Payakabung Village. The implementation of the program aims as a form of community empowerment to be able to improve the community's economy through oyster mushroom cultivation activities. This program has been going on since 2022 with the initial number of group members reaching 11 people and currently has increased to 20 people at this time. PT PLN Indonesia Power UBP Keramasan UP Indralaya together with the Payakabung Oyster Mushroom Farmer Group continues to develop forms of innovation in the oyster mushroom cultivation process.

In 2023, oyster mushroom cultivation activities were innovated through the use of machines that could increase the effectiveness of oyster mushroom production. The machines used are a press machine, baglog steamer machine, and misting water sprinkle. In 2024, PT PLN Indonesia Power UBP Keramasan UP Indralaya together with the assisted groups developed the Bertuah Waste Social Innovation Program. The Bertuah Waste Social Innovation Program is in the form of utilizing baglog waste as liquid smoke and utilizing palm frond waste as raw material in making baglogs. The innovation aims to create some potential for economic improvement and improvement of environmental conditions.

Table 2. Data on Coconut Plantation Area People's Palm Oil in Ogan Ilir Regency

No.	District name	Wide
1.	Kuang Estuary	39
2.	Rambang Kuang	0
3.	Lubuk Keliat	40
4.	Tanjung Batu	63
5.	Payaraman	16
6.	Alai Region	189
7.	Kandis	99
8.	Tanjung Raja	176
9.	Long Range	82
10.	Pinang River	106
11.	Mulching	192
12.	South Pemulutan	665
13.	Western Breeding	293
14.	Indralaya	190
15.	North Indralaya	1,795
16.	South Indralaya	195
	Ogan Ilir	4,140

Source : Central Statistics Agency Regency . Ogan Ilir in 2024

Based on table 2 above, it can be seen that North Indralaya District is the sub-district with the largest oil palm plantation area in Ogan Ilir Regency. The size of the oil palm plantation area is directly proportional to the amount of waste generation. Mathius in Mardalena, et al (2016) explained that each hectare of oil palm plantation land can produce 20,020 kg of fresh palm fronds. Zainuri, et al (2019) explained that palm frond waste that is only piled up and left to be decomposed by nature by itself takes a long time to disintegrate and the process of destruction by decomposers will release CO₂ into the air, so that the pile of fronds can potentially be a carbon (C) reserve that is slowly released into the air.



Figure 1. Oil palm plantation fires

Unutilized palm frond waste is also one of the factors that exacerbate land fire conditions. Oil palm plantations are the biggest contributing factor to forest and land fires in Indonesia (Lohberger in Girsang, 2022). According to Bappenas data in Girsang (2022), 16% of the land area that experienced fires in Indonesia was caused by oil palm plantations during the period from 2000 to 2015.

Environmental problems do not only occur in the area around Payakabung Village, but also occur at the location of the oyster mushroom cultivation site. The problem that occurs at the oyster mushroom cultivation site is the generation of baglog waste which reaches 300 kg / month so that forms of utilization and processing of these wastes are needed. The aim is to create other forms of benefits that have an impact on improving the economy of the Payakabung Village community, especially members of the Oyster Mushroom Farmer Group.

Based on the background explanation above, this research will explain how the economic benefits of the application of oyster mushroom cultivation social innovation in Payakabung Village.

2. Research Methods

The research method used in this research is a qualitative approach with descriptive methods. According to Moleong (2017), qualitative research is research that is intended to be able to understand the phenomenon of what is experienced by the research subject, for example behavior, perceptions, motivations for action, and others holistically and by means of descriptions in the form of words and language in a special natural context and utilizing various natural methods.

The research was conducted at the location of the implementation of the Oyster Mushroom Cultivation Program, namely in Payakabung Village, North Indralaya District, Ogan Ilir Regency. The data used in the preparation of research on corporate social innovation programs are secondary and primary data. Primary data in this study is data obtained directly from informants through face-to-face interviews or other media to obtain an overview of activities and achievements that have been obtained. Secondary data includes written data and information related to the planning, implementation (monitoring) and reporting of program results.

3. Research Result

3.1 Waste Program Implementation Lucky

PT PLN Indonesia Power UBP Keramasan UP Indralaya implements CSR Programs in several areas around the company, one of which is in Payakabung Village with oyster mushroom cultivation activities. Based on the results of the social mapping study carried out by the company, several problems were found around the oyster mushroom cultivation site, such as the waste of palm fronds which was a factor in the severe condition of forest and land fires, the difficulties experienced by the group in obtaining sawdust, and the waste of baglogs which reached 300 kg / month. Based on this background, PT PLN Indonesia Power UBP Keramasan UP Indralaya together with the Payakabung Oyster Mushroom Cultivation Farmer Group implemented the Bertuah Waste Program.

The Bertuah Waste Program comes from 2 syllables, namely waste and bertuah. Waste itself is defined as leftover production goods that have no value and bertuah is a local language of Ogan Ilir which means bringing good luck. So if interpreted based on the meaning of each syllable, the Bertuah Waste Program means an environmental management program that is realized through processing and utilizing leftover production goods that have no value to provide more benefits to the community, especially members of the cultivation group. The remaining production goods utilized through this program are palm fronds left over from plantations and baglog waste from oyster mushroom cultivation carried out by the group. Through this program, it is expected to provide benefits in the form of improving environmental quality, especially related to reducing the potential for forest and land fires that occur in Ogan Ilir Regency, as well as providing economic benefits to the Payakabung Oyster Mushroom Cultivation Farmer Group.



Figure 2. Refinement of palm frond waste

The accumulated waste of palm fronds is utilized by the group as a substitute for sawdust in the production of oyster mushroom baglogs. Palm fronds are processed by pulverizing them using a chopping machine and then used as raw material for oyster mushroom baglogs. Currently, the group has collaborated with the Biosystems Laboratory of Sriwijaya University regarding the utilization of palm frond waste in the Sriwijaya University area. The group also cooperates with oil palm farmers in Kabal Island Village for the supply of palm frond waste.



Figure 3. Waste Baglog at Cultivation Locations

The baglog waste in the group is processed into liquid smoke by utilizing a machine made by PT PLN Indonesia Power UP Indralaya with the Biosystems Laboratory of Sriwijaya University. The machine is made by utilizing iron waste, iron drums, and stainless steel in the company so that it also provides benefits from the company's side. In the process of processing baglog waste into liquid smoke using the pyrolysis method to produce grade 3 liquid smoke and then to produce grade 1 followed by a distillation or recovery process.



Figure 4. Processing Process Waste Baglog

The grade 3 liquid smoke produced is then used by the group as a vegetable pesticide and as a sterilization material in the oyster mushroom cultivation process. Grade 3 liquid smoke is not only utilized for the benefit of the group alone, but is also utilized by other communities around the group's location. The Oyster Mushroom Cultivation Farmer Group also provides some samples of grade 3 liquid smoke to rubber tapping workers as rubber freezing material. Grade 1 liquid smoke itself is utilized by the Srikandi Payakabung Group as a preservative for derivative products.

3.2 Economic Impact of the Waste Program Lucky



Figure 5. Liquid Smoke Waste Baglog

The Bertuah Waste Program implemented has provided several economic benefits for members of the Payakabung Oyster Mushroom Farmer Group, as follows:

1. Raw Material Cost Savings

The utilization of palm frond waste has provided benefits to the group in the form of savings value compared to previous raw materials. Previously, sawdust was taken from wood companies around Payakabung Village. The use of sawdust requires purchase costs and transportation costs from the timber company to the oyster mushroom cultivation site totaling Rp600,000/pick up.

Meanwhile, palm frond waste is taken from the Sriwijaya University oil palm plantation and community-owned oil palm plantations in Pulau Kabal Village. The group takes fresh palm frond waste left over from pruning so that the group does not need to incur purchase costs. The cost required is only enough for the pick-up fee of IDR 300,000/pick up. So that the group can have savings of Rp300,000 every time they pick up raw materials. This savings in raw material costs certainly has an impact on the financial condition of the group in general.

2. Pesticide Cost Savings

Processing baglog waste into liquid smoke which is then used as a vegetable pesticide provides savings to the farmer group. The farmer group previously used oyster mushroom pesticides purchased from Bogor at a price of IDR 75,000/bottle with a lifetime of one month or a savings value of IDR 900,000/year. The use of vegetable pesticides from liquid smoke also provides benefits to the quality of oyster mushrooms, namely oyster mushrooms without chemicals.

3. Increased Member Income

The implementation of oyster mushroom cultivation activities in Payakabung Village, which has been going on since 2022, has provided benefits to all members of the farmer group, namely by increasing income through the sale of oyster mushroom harvests, baglog sales, and sales of derivative products. In a period of 3 years, it has shown an increase in the average daily yield, namely from 6 kg / day in 2022, in 2023 to 11 kg / day, and in 2024 to 14-16 kg / day at a price of IDR 20,000 / kg. so that the total income for one month reaches IDR 9,600,000.

In 2024, the group was recorded to have sold 13,300 baglogs of oyster mushrooms at a price of Rp3,200/baglog, so that the group's income from baglog sales reached Rp42,560,000. The sales of derivative products in the form of crispy mushrooms by the Srikandi Payakabung Group in 2024 reached Rp4,424,000. So that if the income is summed up, the group has received income from product sales of IDR 56,584,000.

The increase in total income is a form of benefit received by the group with the implementation of the Bertuah Waste Program in the Oyster Mushroom Cultivation Farmer Group and Srikandi Payakabung. This form of economic benefit is expected to be sustainable so that the program can improve the economic conditions of the Payakabung Village community. These economic benefits are also expected to be one of the supporting factors for achieving community welfare, especially members of the Oyster Mushroom Farmer Group and Srikandi Payakabung Group.

4. Conclusion

PT PLN Indonesia Power UBP Keramasan UP Indralaya implemented a CSR Program in Payakabung Village through the Bertuah Waste Program with the aim of answering problems that exist around the village area. The problems that are the focus of the solution are related to environmental and economic problems.

The environmental problems include problems related to the generation of palm frond waste which is a factor in the severe condition of forest and land fires, as well as the generation of baglog waste that has not been utilized by the group. The economic problems that are the focus of this program are an increase in the income value of group members with the ultimate goal of improving the economic conditions of the community.

The implementation of the Bertuah Waste Program took place at the oyster mushroom cultivation site in Payakabung Village. The program is carried out together with the fostered partner groups, namely the Oyster Mushroom Farmer Group and the Payakabung Srikandi Group. The implementation of the program also involves academics, namely the Biosystems Laboratory of Sriwijaya University in the development of liquid smoke machines. The liquid smoke machine used by the group is the result of the utilization of iron waste, iron drums, and stainless steel in the PT PLN Indonesia Power UBP Keramasan UP Indralaya area.

The implementation of the Bertuah Waste Program not only provides benefits from an environmental perspective, but also provides great benefits in terms of the community's economy. The economic benefits displayed from the implementation of the Bertuah Waste Program include savings in raw material costs with a value of IDR 300,000 per raw material collection, savings in pesticide costs of IDR 75,000/month or IDR 900,000/year, and increased income for group members through product sales worth IDR 56,584,000.

References

1. Bahri , S., and Panorama, M. (2021). *Implementation of Sharia Business Ethics in Micro, Small and Medium Enterprises (Mumkm) During the Covid-19 Pandemic at the Self-Help Mutual Cooperation Market in the Batumarta Community, Baturaden Village Subdistrict Lubuk Raja, Ogan Komering Ulu Regency* . Raden Fatah State Islamic University: Journal of Islamic Studies Volume 17 Number 2.
2. Dessy . (2022). *Implementation of the Mitigation Program Poverty through Social Assistance in Parit Village Subdistrict North Indralaya, Ogan Ilir Regency* . Thesis . Major Sociology Faculty Social Sciences and Science Politics : Sriwijaya University .
3. Girsang , SH (2022). *Impact Coconut Plantation Fire Palm to Diversity of Mammal Types : Case Study of PT RAJ South Sumatra*. Journal Forest Research and Nature Conservation Volume 19 Number 2.
4. Mardalena , SS, and Akmal. (2016) *Effects Giving Midrib Fermented Palm Oil with Prolinas to Rumen Characteristics of PFH Dairy Cows* . Faculty Jambi University Animal Husbandry : Journal Sciences Animal Husbandry Volume 19 Number 2.
5. Moleong , L. J. (2017). *Research methods Qualitative* . Bandung: PT. Teenager Rosdakarya .
6. Widjajanti , K. (2011). *Community Empowerment Model* . Semarang University Faculty of Economics: Journal of Development Economics Volume 12 Number 1.
7. Zainuri , et al . (2019). *Subtraction CO2 emissions with Utilization Waste Midrib Coconut Palm Oil in Production Fiber Bricks* . Lancang Kuning University : Journal Technology Environment Volume 20 Number 1.

Other Sources

1. Law of the Republic of Indonesia Number 40 of 2007 concerning Limited Liability Companies

Internet

1. Central Bureau of Statistics Ogan Ilir Regency . (2023). Amount Poor Population (Thousand People) According to Regency /City Year 2021 - 2023. <https://oganilirkab.bps.go.id/indicator/23/205/1/nomor-pembangun-miskin.html>
2. Central Bureau of Statistics Ogan Ilir Regency . (2019). Area and Production Plant Coconut People's Palm Oil According to Subdistricts in Ogan Ilir Regency 2014. <https://oganilirkab.bps.go.id/statictable/2016/03/21/28/lebar-areal-dan-produk-tanaman-kelapa-sawit-rakyat-menurut-kecamatan-di -og-an-ilir-2014.html>