

# Waste Paper Donation Program in PT. PJB UP Paiton

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**Abstract**— Based on the data of paper usage and waste paper produced from 2011 to 2014, about 33.34% of paper bought end up as wastes. The author proposed that these waste can be recycled by donating it. These donation would helpful not only to the society but also to the environment in reducing logging. Power Jawa-Bali Power Unit (PJB PU) Paiton limited company have conducted a social mapping that shows the dependency of Banyulugur society between the fisher and fish collector. Through observation, literation and consultation, corporate social responsibility division of PJB PU Paiton limited company along with SekolaKonang conduct a research. The research shows that through the waste paper donation, the average income of Banyulugur society experienced an increase about 10.2 USD/person/month. On the other hand, this donation had decrease the total paper usage by 48 ream/year. This decrease indicate that the companies successfully implemented the Green Office program.

**Index Terms**—Average income increase, corporate social responsibility, green office, social mapping.

## I. INTRODUCTION

In new century, most of the companies around the world are still using paper as the essential part of their daily work. In the end of the day, some of the paper used would eventually became waste material. Without any further action, these waste paper would end up as garbage that give negative impact to the environment. Several study had been conducted to solve this problem such as integrated paper recycling management [1], cost modelling to facilitate waste paper recycling [2], waste paper procurement optimization [3] and waste paper recycling management [4]. In this research, a donation program intended to recycle those paper is developed. These donation program would also add more value into the waste paper due to the concern about environmental problems [5].

Technically, this program works by recycling the donated waste paper and sell it back to nearby companies. Not only decreasing the environmental impact, this program also help the surrounding community or society grow. According to the social mapping data conducted by PJB PU Paiton limited company, Banyulugur society as the surrounding community mostly do not have a stable income [6]. Hopefully, the Banyulugur society can also get significant benefit.

## II. REVIEW

### A. Banyulugur Society

In this work, the author adopted the result of social mapping

conducted by PJB PU Paiton at April 2014 using Environment Baseline Approach (EBA) method [6]. EBA method is a commonly used method in identifying any social or environmental problems in the given area. The result of social mapping shows that most of the Banyulugur villager who are work as fisher are very dependent to the fish collector. This collector also gives the fisherman loans under one condition, which is all of their catches must be collected to the specific collector.

The result of social mapping also shows that the involvement of women in Banyulugur society is not fair yet. Women in Banyulugur society mostly only involved in the integrated service post that gives services to the infants.

### B. Waste Paper

Annually, PJB PU Paiton used about 1727.01 kg of paper ranging from year 2011 to 2012. PJB PU Paiton also used about 1262.39 of kg paper and 1250.56 kg of paper at year 2012-2013 and 2013-2014 respectively. Approximately, about 460.8 kg or waste paper produced each year. So about 33.34% of paper bought yearly end up as waste.

### C. Corporate Social Responsibility

Corporate Social Responsibility (CSR) of PJB PU Paiton is the commitment of the company as social responsibility toward local society. CSR management consist of planning, mapping and implementation. Since planning would mostly determine the program success rate, it plays important rule in CSR. Mapping will be the first step as the bases of the development program strategic planning.

While implementation follows the planning. Implementation itself can take roles in education, health, economy, social, security and environment area.

Program performance can be evaluated through any indicators such as society satisfaction index, economic growth and etc.

There are a few purposes of CSR, which are elevate the positive interaction between company, society and government; elevate the prosperous level of society and preserve the nature environment [7].

To be successfully implemented, CSR can operates in a few different ways. These ways are by through direct program managed by the company itself, through joint operation with other relevant company or through joint operation with the existing social institution.

### D. Sustainable Development

Sustainable development is a development process that

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Fig 1. Triple Bottom Line

aimed to fulfill present needs without sacrificing the fulfillment of future needs. To achieve this, some aspects are considered such as the environment preservation, economic development and social justice. These three aspects then became the bases of sustainable development, as defined by John Elkington in figure 1 as Triple Bottom Line of sustainable development.

Sustainable Development also has some characteristic. These characteristic are sustain the human society while preserving the surrounding environment, optimally harness the natural resources, give the other community an opportunity to grow together, preserve and optimize the surrounding ecosystem in order to increase natural resources availability and using any procedure and setting that put attention on the present and future of natural resources availability.

#### E. Waste Paper Donation Program

Waste paper donation program is a program aimed to economically put an added value to the waste paper through recycle process worked by a group of society. In order for the group to recycle it, the waste paper must be first donated.

The realization of this program consists of a few steps. First, determine the community empowering. Community empowering is the target community which determined based on the social mapping result. Second, determine the community organizer. The community organizer (CO) can be any institution that knows the local culture, how to organize the program based on the local culture and works closely with the community empowering. Third, determine the tools that will be utilized in the program such as education, entrepreneurship, participatory, collaborative and etc. Fourth, determine the approach model with the community. Last, income generating as the indicator whether the program actually give benefit to the community or not.

#### F. Green Office

Recently, administration and other activities in the office experience major growth. Meanwhile, these activities mostly consume a lot of energy. Not only that, garbage material that could negatively impact the environment often produced. These garbage can be vary but mostly waste paper and plastic.

As the waste paper could possibly added more litter to the society, waste paper then recycled. Hopefully, these recycling process not only benefit the recycler but also the company. Nowadays, most office already implemented environmental management system through Green Office. The concept of green office is to develop an office that pay more attention on environment. According to this concept, the waste paper donation program can be considered as a scope of green office. The indicator of success in implementing green office through waste paper donation program is measured by the decrease of new paper bought and the increase of recycled paper bought as the substitute.

### III. METHODOLOGY

#### A. Observation

The waste paper is defined as the paper that collected from the paper shredder machine and cannot be used anymore. In 2014, total number of paper shredder machine in the PJB PU Paiton is 8 units. After the observation, the average number of waste paper per month is found to be 38.4 kg in total.

Based on the pre-research experiment, 100 papers can be produced using 2 kg of waste paper. Hence, about 1920 papers can be produced monthly through this program.

#### B. Social Mapping

Social mapping is conducted by PJB PU Paiton based on EBA method. This method utilize 2 program to map the social and environment. First, social assessment that map the society based on their behavior, culture, etc. Social assessment look at some different aspects of the society, which are change in social environment, needs and how the society communicate.

Secondly, the stakeholder mapping is utilized. Stakeholder mapping is a method commonly used to measure the interest level of the investor. In this work, the social assessment program is more dominant than the stakeholder mapping.

#### C. Implementation of Waste Paper Donation Program

Based on the five steps of program realization, the paper donation program is implemented.

#### D. Determination of Community Empowering

The social assessment result shows that economically, the existing problem is the dependency of the society that mostly are fisher, to the fish collector that act as the broker. These fishers mostly bounded to the fish collector as they must sell their catch to a certain fish collector to get a loan from the same fish collector. The impact of this social bound is that the fisher do not has a stable income.

As described before, the social mapping also shows that the women in the society less likely to be involved in the society other than integrated service post. Based on these statements, the community empowering in this program are the women in Banyulugur society, so that their involvement can help the society and ultimately increase their family income.

#### E. Determination of Community Organizer

Based on the track record from recent program conducted by PJB PU Paiton, local non-government organization (NGO) is chosen as the community organizer in this program. This NGO is SekolaKonang, SekolaKonang has been worked with

other recent CSR program conducted by PJB PU Paiton and proved to be has a good performance in doing such program.

*F. Determination of Tools for the Program*

In this research, participatory tools chosen based on how the CO will interact with the society. The local NGO SekolaKonang mostly would give the society trainings and accompaniment. While the infrastructure needed for the program would be fully facilitated by PJB PU Paiton.

*G. Determination of Program Intervention Model*

To develop a great program, approach model toward the target also plays important role. There are two approach model considered in this research, Participation Rural Appraisal (PRA) and Community Driven Development (CDD) [8]. PRA used if the company take an active participation as the thruster to thrust the society into the target. In the other hand, CCD used when the company mostly take a passive participation by giving the fund needed by the society to achieve the target. In this second type of model, the planning, implementation and evaluation mostly done by the society itself.

Based on the resources and society condition, PRA approach model is used in this research. In this program, PJB PU Paiton limited company will employ the Banyulugur society especially the women.

In this model, mobility and delivery are important. Delivery means that the company would need to deliver the resources needed by the program that can take the form of matter used by the program or learning material for the society to grow. While the term mobility refers to the ability of the company to mobilize the society from present situation toward the expected situation.

*H. Income Generating*

As the program get in motion, the program should generate income for the society. This income should later elevate the society economic status from unstable income to more stable income.

IV. RESULT AND DISCUSSION

The detailed data of waste paper per year at PJB PU Paiton are shown in Table 1. This waste paper would then combined with other waste paper from nearby company such as YTL, IPMOMI and Paiton Baru.

In order to recycle these waste paper into recycled paper, Banyulugur society is employed and trained about how to recycle waste paper. Together with SekolaKoang as the community organizer, PJB PU Paiton train and supply the society with anything needed in this program. Since the waste paper is the donated material, the price of getting those waste is 0 USD. Due to the use of consumable goods such as glue

Table 1. Waste paper per year

Total Paper Usage		Waste Paper	
Year	Weight (kg)	Average Waste Produced (kg)	Waste Paper Percentage
2011 – 2012	1727.01	460.8	26.68 %
2012 – 2013	1262.39	460.8	36.50 %
2013 – 2014	1250.56	460.8	36.85 %

Table 2. Recycled paper production capabilities

Days	Worker (person)	Recycled paper produced	
		Sheet	Ream
2	10	1000	2
30	10	15000	30

Table 3. Profit gained from recycled paper selling

Buyer / Note	Price (USD)	Quantity	Total Price (USD)
PJB PU Paiton	3.5	4	14
IPMOMI	3.5	4	14
YTL	3.5	4	14
Paiton Baru	3.5	4	14
		16	56
Stock	3.5	14	49
			105
Production Cost			-3
Profit			102
Profit per person			10.2

and microfiber, cost of the recycling process is around 3 USD monthly.

Based on the experiment, the society consists of 10 persons is able to produce 100 recycled papers in 2 days. These recycled papers then sold to PJB PU Paiton and other nearby companies for around 3.5 USD/ream.

The detailed data about waste paper pricing and recycled paper pricing can be seen in Table 2 and Table 3.

If the production of recycled paper is stable, PJB would eventually be able to substitute the new paper with recycled paper. According to the previous data that PJB PU Paiton uses up to 575 yearly and the recycled paper production approximately up to 48 ream yearly. Then, PJB PU Paiton only need to buy 477 ream of new paper every year while the other 46 ream of paper are obtained from the Banyulugur society as the recycled paper.

Thus, total usage of new paper yearly can be decreased indicating that the green office implementation at PJB PU Paiton is a success.

Based on Table 3. the expected income gained per person in this program is 10.2 USD.

V. CONCLUSION

In this research, the waste paper donation program was able to empower the Bayulugur society and increase the income for the women up to 10.2 USD/person/month. This program was also benefit the PJB PU Paiton limited company in implementing green office. Through this program, PJB PU Paiton decrease the usage of new paper by 48 ream and replace it with recycled paper bought from the Banyulugur society. This decrease in new paper usage indicate that PJB PU Paiton succeed in the implementation of green office.

## ACKNOWLEDGMENT

The authors gratefully thank to PT. PJB UP Paiton Indonesia for providing the facilities in conducting this research.

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