

Utilization of Plastic Waste in Namu Bintang Village of Deli Serdang Regency

Riyanto Sinaga^{1*}, Mayang Sari Yeanny¹, and Masitta Tanjung²

¹Departement of Biology, Faculty of Mathematics and Natural Science, Universitas Sumatera Utara, Jl. Bioteknologi No.1

²Padang Bulan, Medan, North Sumatera, Indonesia 20155, Telephone 062-61-8211050, 062-61-8214290; Fax 062-61-

Keywords: Utilization, Waste, Plastics, Village of Namu Bintang.

Abstract: The purpose of this community service is to utilize plastic waste in Namu Bintang Village. The special target of this community service is to convert plastic waste into a material that has economic value and reduce environmental pollution, because plastic waste is difficult to decipher in the environment. The method used is a combined method of counseling, training, direct practice and job evaluation. The utilization of plastic waste includes; handicrafts from straws and plastic packaging, which results in household products such as wall hangings, door and windows curtains, and other plastic packaging products include as souvenirs (bags, pencil boxes and others), accessories (ring place, key chains and others) and various flowers from plastic waste. All products which has been produced can be utilized for their own needs or can be sold according to the needs of the Namu Bintang villagers, especially the group of Collectors of The Used Goods / Scavengers from Area I and II of Namu Bintang Village, Deli Serdang.

1 INTRODUCTION

Plastic waste has become a material that we use every day. Beside, being used to pack food, we also found plastic on various electronic products that we often use. However, although now recyclable plastics are increasingly being used, the plastics are only downcycled (processed into other low-quality plastic products and ultimately cannot be recycled anymore).

Likewise, in the village of Namu Bintang, this village is one of the villages located in the district of Pancur Batu, Deli Serdang Regency. The village of Namu Bintang is close to the former Landfill of Medan Municipality located north of Namu Bintang village and has a total area of about 25 hectares. The distance from the settlement to the landfill area is about 1.5 km and located on the roadside in the direction of Pancur Batu Road. While the distance of the Landfill to the municipality of Medan is about 17 km. Based on this condition, many people with livelihoods as collectors of waste / scavenger for resale to meet the needs of the village people. This condition can be seen in the following table;

Table 1. Population Composition According to Livelihood

No	Livelihood	Amount (Family)
1.	GE/Soldier/Police	65
2.	Private employees	143
3.	Collector of Used Goods / Scavengers	241
4.	Farmer	256
5.	Trader	67
6.	Service	84
7.	Retired	62
8.	Labour	87
	Total	1005

Source: Namu Bintang Village Data

The village of Namu Bintang is a village whose inhabitants throw garbage in the river and burn it. The waste often accumulates on roadsides and rivers, thus disrupting the environment. Besides that, the waste scattered into the paddy field area because it was carried by the river. The garbage is piled up so that the water flow of sewer and river are clogged. When rainfall is high and lasts longer, it will result in flooding.

Based on this condition, Scavengers in Area I and II of Namu Bintang village in cooperation with the

community service team to work together in order to utilize the plastic waste into a product of economic value. With the utilization of plastic waste, villagers of Namo Bintang got knowledge and training of plastic waste to increase the family economy, while reducing environmental pollution.

The benefit of this activity is to help the villagers of Namo Bintang in handicraft product making, introduce the culture of utilizing plastic waste in daily life to reduce the family's need so that the family economy will be better.

2 RESEARCH METHODS

2.1 Materials and Methods

The method used in this activity by way of counseling and lecturing, explanation of the theory and technique of utilization of plastic waste which were followed by community groups of Scavenger and Farmer in Namo Bintang Village. The community listened to the material presented by the community service team.

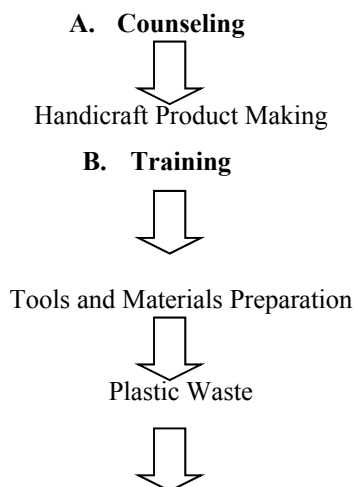
The training was done by the Groups of Scavengers in Area I and II of Namo Bintang Village. Community groups are trained by the community service team. All do this activity by proactively doing the training to get the result of a handicraft product. The equipment used is also simple that community groups can make by their own-selves.

Monitoring and evaluating the success of plastic waste utilization, monitoring work in the field will be done by going directly to the field together, monitoring with visits to see if the community can already make their own handicraft products. In addition, the relationship will be done by phone to overcome the problems that arise.

In general, these community service activities are successful and there is a good cooperation between universities, especially the Implementation Team, government apparatus and community of Scavenger in Area I and II of Namo Bintang Village. The villagers of Namo Bintang realized the importance of saving the environment while improving living standards because they can make their own handicraft products.

The success of this community service activity cannot be separated from the participation and support of Village Officers such as the Chief of Namo Bintang Village and staffs, scavengers group in Area I and II that participate in this activity.

Overview of Plastic Waste Processing



1. Straws / plastic packaging into handicrafts
2. Various handicrafts from plastic

Figure 1. Overview of Plastic Waste Processing.

3 RESULTS AND DISCUSSION

3.1 Counseling and Lecture Activities

Implementation of activities carried out by means of counseling and lecturing, explanation of the theory and techniques of integrated process are followed by community groups in Namo Bintang Village, Deli Serdang Regency. Villagers listened to the material presented by the community service team as presented in Figure 2



Figure 2. Theory presented by team (left) and practiced by team and community (right).

The material presented concerning the processing of waste into plastic handicraft products. It is expected that community groups can reduce the cost of household production because they can get and produce their own handicraft products in accordance with their needs. So community groups can save the

environment and improve the standard living of their families.

3.2 Training Program

The training was done by the community group in Namo Bintang village and trained by the community service team. All do this activity by proactively doing the training to get the result of handicraft product from plastic waste. Results are seen directly for the utilization of plastic waste. Equipment for the manufacture of plastic utilization is also very simple so that the community groups of scavengers in area I and II can make by their own as presented in Figure 3.

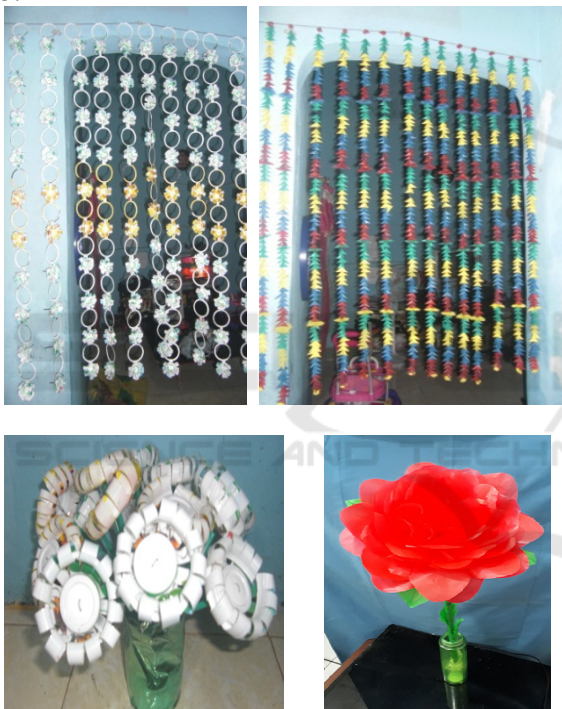


Figure 3. handicraft product from plastic waste

Plastic waste utilization activities are very supportive because plastic waste is very much in the village of Namo Bintang, so people are very easy to take it for handicraft making materials. The tools used for making the handicraft products are so simple that the village community can make by their own. In addition, the village can be saved from plastic waste while the villagers are improving their living standards because they can make handicraft products.



Figure 4. The team from USU and community after lecture and practice

4 CONCLUSION

From the activity of the plastic waste utilization in Namo Bintang village of Deli Serdang Regency, it can be concluded as follows:

Utilization of plastic waste into handicraft products. Utilization of plastic waste can provide economic and ecological value. There is good cooperation between USU and community in Namo Bintang village of Deli Serdang Regency.

ACKNOWLEDGEMENTS

We would like to thank to the Rector of USU for financial support by Mono Tahun Social Engagement BPPTN 2018 and all participants who have helped the implementation of this Community Service.

REFERENCES

- Kompas, (2008). *80 persen sampah plastik jadi limbah*. Diakses pada 20 November 2008 dari <http://cetak.kompas.com/read/xml/2008/08/06/00444748/80.persen.sampah.plastik.jadi.limbah>
- Mandailing, M.M., M. S. Saeni, Said Rusli. 2001. *Partisipasi Pedagang Dalam Program Kebersihan dan Pengelolaan Sampah Pasar (Kasus Di Kota Bogor)*. Tesis Program Pascasarjana IPB. Unpublished.
- Marlia, L. (2008) *Kurangi sampah mulai dari rumah*. Diakses pada 8 november 2008 dari http://lingkungan.infogoe.com/kurangi_sampah_plastik_mulai_dari_rumah.html
- Virgota, A., S. E. Gumbira, A. Saefuddin. 2001. *Kajian Simulasi Kelayakan Sistem Pemisahan Sampah Rumah Tangga pada Pengelolaan Sampah di Kotamadya Pekanbaru, Riau*. Tesis Program Pascasarjana IPB. Unpublished.