

Policy Implementation of Local Communities Development-Based Waste Management in Banjarbaru, South Kalimantan, Indonesia

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Received: March 10, 2015 Accepted: March 20, 2015 Online Published: June 5, 2015

doi:10.5539/ass.v11n18p279

URL: <http://dx.doi.org/10.5539/ass.v11n18p279>

Abstract

This study aims to describe and analyze the facts that occurred in Banjarbaru, related to the implementation of community development-based government policy in addressing the issue of spike volume of waste. We found that waste management system in the landfill Hutan Panjang, Banjarbaru is currently still using open dumping system, so that improvements must be focused in order to become controller landfill management. Due to that fact, the implementation of government policies based on local community development in waste management has been focused for improvements of final landfills (TPA) Hutan Panjang with high hope to process all the waste in Banjarbaru. Moreover, local government of Banjarbaru should further improve the model to go green and clean which can strongly encourages the empowerment of people. Thus it is a form of implementation of good waste management through coaching stage.

Keywords: policy implementation, waste management, local community development, Banjarbaru

1. Introduction

One of the environmental issues in environmentally development is a waste. Waste is the environmental problems that have not been handled well, yet, especially in developing countries. Many articles have been published related to problems of waste. One of them is Sankoh and Yan (2013). In their research, they tried to identify the existing problems of solid waste management in a city in Africa. They found that the main problem of waste comes from households since they did not educate their members on the need to clean their surroundings. In handling waste, people in that town rely on companies which handle the disposal of the waste.

In Indonesia, Act No.18/2008 on waste management states that the waste has become a national issue so that its management needs to be comprehensive and integrated in order to provide economic benefits, healthy for people and safe for the environment and can change people's behavior. According to the law, waste at the final landfill (TPA) should use controller landfill system instead of open dumping for a small town. Surjandari et al. (2009) stated that the resolution of the problem of waste requires good cooperation between all concerned parties. The paradigm of waste management should also be based on the concept of waste management that supports the principles of sustainable development and environmentally sound. In this case, government regulators must be able as overarching settlement problems of the waste.

According Hadiwiyoto (1983), in many countries, both in developed or in developing countries, waste always raises complex issues with broad impacts. Improperly managed waste reduces health quality and environmental aesthetic values. Waste can also cause pollution and the growth of diseases that result in not feasible settlements around piles of the waste (Bahar, 1986). If the waste is just thrown away, then it invites insects and animals thrive and spread of various diseases. The waste can also clog drains that lead to flooding.

According Saribanon and Pranava (2008), volume of waste in urban areas continues to increase as a result of increasing total population of the city, so that the waste problem has become widespread social discourse and excessive for the government and society. Bahar (1986) stated that the problem of waste from households, markets, industrial and office waste which have been appear in large cities are because of difficulties in

collection, transportation, disposal, and utilization. The difficulties of waste management are closely related to poor neighborhoods. Population growth increasingly affects the volume of waste. According to Indonesian Act No. 18/2008 on waste management, population growth and changing consumption patterns in the society increase the volume, type and characteristics of the waste is increasingly diverse.

In connection with the waste, one of the problems in various areas including Banjarbaru is the absence of specific policies governing waste management. Banjarbaru does not have regulations which govern the waste management. A state law in Banjarbaru about waste management is urgently required because the volume of waste continues to increase. The law is also required to set sanctions of violations. Even though there have been government policy that do not directly regulate the waste problem in Banjarbaru, such as Act No.15/2000 on levies and health care in waste management and Act No.15/2001 on health and public order, but the fact is that the waste management is not optimal.

From the description above we are interested in doing research to find the facts that occurred in Banjarbaru, associated with the implementation of community development-based government policy. Thoughts on solutions of the problem of waste management are expected to contribute to government and community development. The purpose of this study is to describe the implementation of waste management policy based on local community development. The research was conducted in Banjarbaru, South Kalimantan, Indonesia.

2. Literature Reviews

2.1 Concept and Implementation of Public Policy

Public policy is a decision made by the government. There are several other definitions of public policy. According to Dye (2005), public policy is whatever governments chose to do or not to do. Dye definition of public policy indicates that the agent of the public policy maker is the government. Public policy is always problem and action-oriented. Thus the policy is a statute that contains the principles to guide the way to act, which is made in a well planned and consistent manner in achieving certain goal. Peters (1993) defined public policy as the sum of government activities, whether they act directly or through agents, and it has an influence on the lives of citizens. According to Wahab (2008), the meaning of public policy is not only textual but rather more contextual, because there exists amend from time to time. According to Nugroho (2006), shape public policy is grouped into three, namely public policy that is (1) a general or basic macro, or (2) the meso or intermediate or explanatory implementation, and (3) micro, the policies that govern the execution or implementation of policy above it.

According to Pressman and Wildavsky (1973), implementation is not an easy concept to define. As a noun, implementation is the state of having achieved the goals of the policy. As a verb it is a process -everything that happens in trying to achieve the policy objectives. Thus, just because implementation (noun) is not achieved, it does not mean that implementation (verb) does not happen. Meanwhile, Meter and Horn (1975) discussed not only about the process and the impact of the implementation, but also explicitly distinguished between the concepts of implementation, performance (process), and the impact.

Both opinions imply that the implementation of a policy is acts to achieve the objectives of a policy. Hargrove (1975) argued that the implementation is a compliance policy objective which is done through the planning, programming and operation of the project so that the agreed outcome and the desired effect can be achieved. According Islamy (2003), the implementation of the policy is an attempt to realize the actual alternatives which is chosen to solve the problem. Based on those opinions, we can conclude that the implementation of policy is an activity or action so that a formulated policy can be achieved. The policy Implementation can be in form of program operation which is directly outlined from a policy or through the derivation of general policy formulation.

Related to waste management policy in local government, Indonesian Act No.18/2008 on waste management is positioned as a policy that is used as a guideline for the implementation. Meanwhile, Banjarbaru Act No. 15/2001 on health and public order and Banjarbaru Act No. 15/2000 on levy and health care in waste management are used as a series of policy implementation or as public policy derivation. The groove is in accordance to Anderson (1995) who stated that policy-making does not end after the policy is approved. This means that the role of regulatory policies (administrator) is to implement policies which were formulated by policy makers. Meanwhile, the role of the service provider is to pursue policies which were set by bureaucrats. Thus, the implementation of public policy is a process.

Conceptual framework of the process of public policy implementation starts from the identification of variables that influence the achievement of policy objectives in the overall process (Mazmanian and Sabatier, 1983). The

variables are categorized into three major parts, namely: (1) tractability of the problem, (2) the ability to structure the implementation process, and (3) the nonstatutory variables affecting implementation. The third category is treated as an independent variable which affects the implementation stages, and each stage of implementation affects the next stage. Conceptual framework of the implementation process is presented in Figure 1.

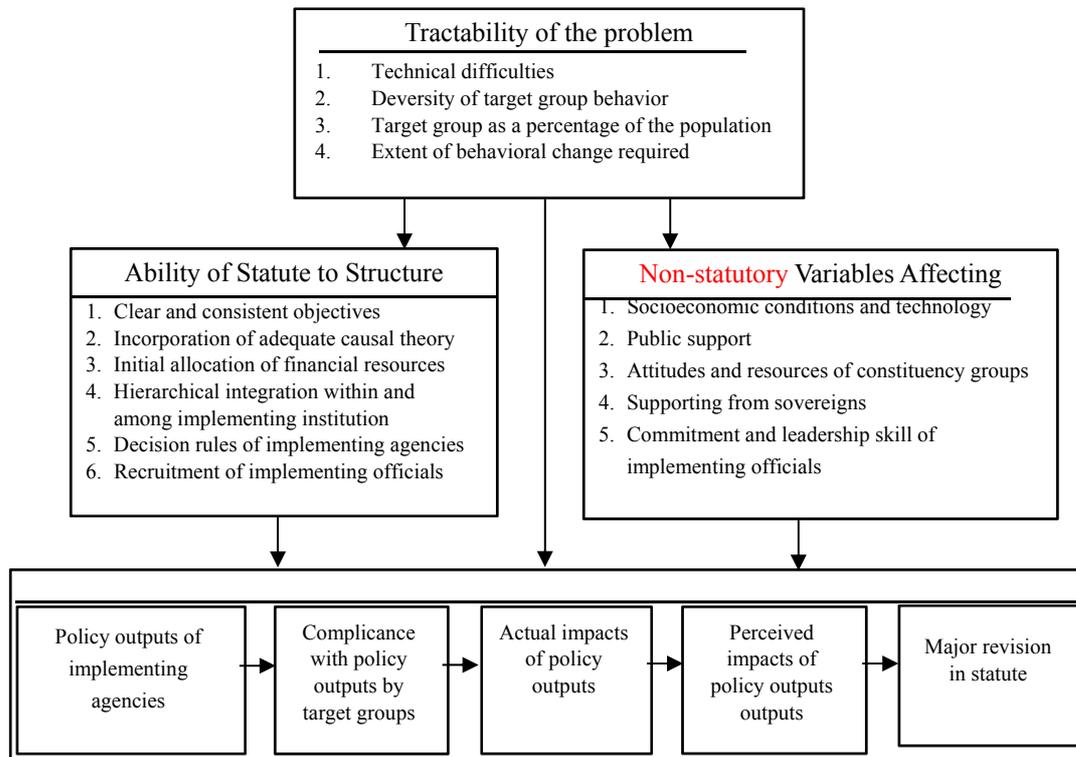


Figure 1. Model of implementation process according to Mazmanian and Sabatier (1983)

Beside that, they also mentioned six conditions for optimization of policy implementation, namely: (1) there exist intended purpose legally, clearly, and consistently, (2) there is a right causal theoretical basis in each formulation and implementation which connect behavior of the target group with the achievement of the desired outcome, (3) the implementation process which is legally structured to encourage compliance of executive officers and the target group, (4) there is a commitment and skills (political and managerial) in the executive officials to utilize the achievement of policy objectives, (5) there is an active political support from the authorities (executive, legislative) and interest groups, and (6) the priority of policy implementation objectives should not be interrupted by other contrary policies.

2.2 Definition, Classification and Waste Sources

According Hadiwiyoto (1983), waste is left over materials undergoes treatment for having taken the main part because of processing or has no benefit. In terms of social economics, in general, waste has no values and in terms of the environment may cause pollution or nuisance on sustainability. Waste classification is based on several criteria, namely the source, composition, shape, location, the occurrence, nature and type. The classifications are important as a basis for the handling and use of the waste (Hadiwiyoto, 1983).

According to Bahar (1986), source of waste can be classified into three groups, namely:

- a. Waste from household activities (domestic refuse), usually in forms of food waste, materials and equipment that are not used in the household, the residue of food processing, packaging materials, various papers, rags, cans and others,
- b. Waste from trading activities (commercial refuse), is waste from trade places such as markets, supermarkets, shopping centers, cafes and other selling points,
- c. Waste from industrial activities (industrial refuse), where the amount and types are depending on the types and amount of material processed by industrial companies.

Meanwhile, Kastaman and Kramadibrata (2007) stated that the waste are basically substances or objects that are not used anymore, in the form of domestic effluent, effluent plant or as the residue of the industrial process. In general, it can be divided into two categories, namely easily biodegradable waste (degradable refuse) and not easy or non-biodegradable waste (non-degradable refuse). Al-Khatib et al. (2010) conducted a research with a case study of solid waste management in Nablus district – Palestine and found the majority of waste was organic which suggesting a strong resource recovery potential in terms of animal feed or compost. According to them, recyclable waste (plastic, paper and card) consist of 16.7% weight. Detail of the municipal waste categories based on their research are metal, glass, paper and card, organic, textile, other component with <10 mm size.

2.3 Waste Problems in Urban Areas and Waste Utilization

In urban communities, waste is often not a matter of deep thought. Trash is just dumped in the tub or trash cans to later become collector's affairs/trash's carrier at neighborhood level to the village level and eventually become a task for the city janitor who throw to the final landfill (TPA) (Kastaman & Kramadibrata, 2007). Several articles discussed the consequences of the waste problem, such as Sa'id (1987), Hadiwiyo (1983), and Bahar (1986). In urban areas, there are several stages of the waste management process.

According Hadiwiyo (1983), a treatment on waste is required to reduce or eliminate the problems caused by it. The waste treatment can be in form of solely litter or restore (recycling) of the waste into useful materials. According to Bahar (1986), waste management process involves collection, transportation and disposal. Meanwhile, Nyakaana (1997) discussed alternative approach for the waste disposal which continuously increase related to increase of the population and economics growth.

Kastaman and Kramadibrata (2007) proposed the concept of '3R', reduce, reuse and recycle which is a simple guide to help people in minimizing the harmful effects of junk. In minimizing the waste problems, the main focus is to reduce the use of inorganic waste materials, then reuse it whenever possible, and then is to recycle, which includes processing of organic waste (compost). The orientation of the application of the 3R concept is more emphasized on the handling of inorganic waste. For organic waste management, it has been developed previously through composting.

Process of waste management is a process as in other processes. The output of the management system can be qualitative or quantitative. Qualitatively, the management involves clean, tidy, discipline, lovely waste disposal, which will create a clean city. While quantitatively, this management involves more satisfactory service to community based on population, area of the city or daily amount of transported municipal solid waste. The waste can be used for a wide variety of useful materials depending on the technology. Hadiwiyo (1983) suggested some waste utilization, namely:

1. Waste to Biogas (bioenergy)

Biogas is produced from waste of livestock products, namely from feedlot cattle and manure. Biogas can be used for domestic purposes as a source of energy which is very beneficial when compared to traditional fossil fuels,

2. Waste for production of alcohol

Methanol and ethanol are essentially alcohol compound that can be used as fuel. Government of Indonesia in the 1980s have established research program of alcohol use as a substitute for fossil fuel in the future,

3. Waste for compost production

Compost is the result of the conversion process of organic material (waste) into simpler materials by utilizing microbial activity. Compost can be made from solid waste or liquids, which can be used as a soil fertilizer.

4. Waste for animal feed

Other utilization of the waste are be used for animal feed and some kinds of building materials.

3. Methodology

3.1 Type of Research

In this research we use descriptive study using a qualitative approach type of research. With this approach, the troubleshooting procedure is done by exploring obtained data from literature observations and field observations, then analyzing and interpreting the data to provide conclusions. Meanwhile, according to the formulation of the problem and research objectives, the focus of the research can be broken down as follows:

1. Implementation of government policies based on local community development in waste management over the observed years, and

In order to gather necessary information and data in this study, the researchers used three data collection techniques (Sugiyono, 2010), i.e. field observations, in-depth interviews to the respondents, and collecting research-related documents. In qualitative research, data analysis is carried out while collecting data and upon completion of data collection in a given period (Sugiyono, 2011). In this study, we use interactive data model approach as presented by Miles and Huberman (2007), in which the stages of analysis in qualitative research consists of three main stages, namely data reduction, data presentation, and drawing conclusions or taking action.

4. Empirical Finding and Discussion

4.1 Implementation of Development of Local Communities Development-Based Government Policy in Waste Management

In general, waste management should be organized based on the principle of shared responsibility between government, public and private, and the principle of sustainable development in order to realize the benefits of environmentally oriented development society in Banjarbaru. Waste management aims to: 1) control of waste in order to actualize environmentally-oriented lifestyle, and 2) improve public health, environmental quality and to raise economic value of the waste. Target of the waste management is increasing efforts of waste management and public awareness to create clean environment and healthy living. The scope of the waste management arrangements include: a. management and use of waste, b. licensing related to waste, and c. levy of waste service/cleanliness. Local Government, society and private sector as entrepreneurs and/ or certain events organizers shall implement waste management activities. Waste management activities can be done in self-managed or through collaboration with providers of waste management services. Forms of cooperation which can be done in collaboration with the waste management service provider of waste management include waste management and hygiene.

With regard to the waste problems, Banjarbaru is one of the cities that is currently focusing on improvements of the place of final landfill (TPA) Hutan Panjang, which is located in the sub-district Cempaka. According to Indonesian Act No. 18/2008 on waste management, governance of waste in the landfill for a small town like Banjarbaru must use a system of landfill controller. However, the waste management system in the landfill Hutan Panjang, Banjarbaru is currently still using open dumping system so that improvement is focused on converting it to landfill controller system. Local government of Banjarbaru should have prepared steps to repair the landfill Hutan Panjang by means allocating operational financial plan to funds in the budget plan 2013. The allocated fund is amounting 2 billion rupiahs (USD 153,000) and is planned to be used to finance the operations of the landfill to the controller landfill systems, including the purchase of supporting materials.

In Banjarbaru, transporting the waste to final landfill (TPA) is done on a scheduled basis in accordance to waste technical management. The transport of the waste from temporarily landfill (TPS), and depo transfer to landfill is conducted by waste transporting tools. Waste process is done by means of control landfill or sanitary landfill, incineration or other means in accordance with the type of waste, needs and technological developments. Waste processing may involve third parties who are chosen based on selection and after obtaining permission from the Mayor upon the recommendation from the technical local government agency (SKPD).

In Banjarbaru, every business entities should implement the following concepts: a) clean technology and zero waste, b. gradually making use of waste to produce products (waste as raw material) and producing energy, c. utilize recycling systems and technologies. The application of the concept is implemented based on environmentally oriented waste management. While, obligation of third-party for waste management are as follows: a) to comply with the provisions of waste management services in accordance with standard technical procedures in terms of reduction, segregation, collection, transportation, processing and use of waste, b) to report waste management activities periodically to the SKPD, and c) to keep and maintain/improve infrastructure and waste facilities by feasibility aspects, beauty and environmental health.

Waste which is generated from household activities, commercial activities except the market area, social activities, activities in public facilities, and other activities should be sorted, and categorized as organic waste. The sorted waste is then placed in certain containers/bags that have a certain color and size standard. Color indicates the type of waste, while the size of the containers/bags to facilitate transport to the next process. Waste management activities performed at neighborhood level by labors under the supervision of Planning, Hygiene and City Landscape Gardening (DKPTR). The labors transport containers/bags of trash from their source to the conveyance motor which was designed as a tool for transporting sorted waste to depo/temporary landfill (TPS). DKPTR's waste collector drag household waste and similar items from transfer depo/temporary landfill (TPS) to dump site (TPST) by using a transfer truck. The returns of trash/residues of previous processing will be

transported to the final landfill (TPS). Household waste management activities must be carried out before 07.00 am.

Temporary landfill (TPS) is a special place which is developed and placed on a site in such a way that does not disturb public order and easily accessible by vehicle waste carrier. It has shape and dimensions that can accommodate waste at least 1 (one) cubic meter. TPS development is the authority of local government. Its management can be supported by surrounding local community locations. While the dump site (TPST) and transfer depo are places where the implementation activities such as collecting, sorting, re-using, recycling, and processing of waste are located. TPSTs and transfer depo can be built by local governments and/or may have collaboration with other parties. Transfer dump site (TPST) and transfer depo locations are determined according to corresponding laws. Provisions on the dump site (TPST) and transfer depo are set in Mayor Laws.

Local Government shall finance the implementation of waste management. The funding comes from the local government (state) income and/or other sources authorized by the Act. Other financing sources other than the state income are called retribution (levy) of waste services/cleanliness, herein referred to as retribution. The retribution is collected as payment for waste services/cleanliness. Principles and objectives of structure determination of the amount of the retribution tariff is determined by taking into account the cost of waste service/cleanliness and effectiveness of the services provided by considering the ability of society and aspects of justice. The retribution is used as the cost of collecting, transporting, and or destruction of the waste, including the provision of final landfill.

The collection of the retribution is based on Letter Provisions of Retribution (SKRD) or other equivalent document. Charging the outstanding retribution must be paid at once. Manner of payment, deposit, place of retribution payment is regulated by the Mayor. If the retribution payer does not pay on time or less pay, subject to administrative sanctions in the form of interest of 2% (two percent) per month of the unpaid levies that are not or poorly paid and charged by using Letter of Local Retribution Collection (STRD).

4.2 Implementation of Waste Management Activities

Landfills (TPA) Hutan Panjang, Banjarbaru is best TPA in Borneo. The landfill, which is located in Mount Kupang, sub-district Cempaka, has ever achieved 69 points which is the highest point compared to other points in Kalimantan regional level, while the highest value in the assessment for the landfill cleanliness is 70. By looking at the achievements, the local government of Banjarbaru should continue to work so that the landfill Hutan Panjang is able to accommodate all the waste with a good system and not harmful to the environment.

Currently, waste management system which is implemented at the landfill, which is about 10 kilometers away the city center, is open dumping or semi sanitary landfill. Open dumping system is a system to handle waste by accumulating and collecting them in one large pit and then backfill it using ground so that it will be naturally processed. The constraint with this system is not owned heavy equipment transport function to move the accumulated waste after unloaded it from the truck into the prepared pit heap. The heavy equipment which is needed is excavator, which serves to transfer accumulated waste into pit heap and bulldozers to flatten the former waste heap and push it into the hole.

4.3 Implementation of Waste Management Independently to Actively Engage Communities through Local Community Development Efforts

Banjarbaru has waste management system called Waste Bank Society (BSM). In the system, customers bring sorted trash which is categorized by its type. In this way, the system is not only giving benefit for the customers, but also giving incremental benefits for collectors since the waste bank system will simplify the collectors work, including: 1) the waste is disaggregated and gathered (in-packing) according to the type of waste; 2) the sorted waste are cleaner condition; 3) the waste collectors routinely obtain disaggregated waste in large scale.

Moreover, there are books to facilitate administration officials to record saved waste. The BSM system uses three kinds of books, namely customer Savings Book, Ledger Book, and Registration Book. They are part of the system. Shape and content of the Saving Book is the same as usual bank account books, plus record of what types of waste are brought when customers is saving money in the bank. Meanwhile, the use of the Ledger Book is to record data of all customers from Saving Book. Register Book is a book of detail record of all customers such as name, address, ID number, number of people in each family). The presence of this kind of administration can maintain trust between customers and administrators. Dry waste collectors remain, despite the presence or waste bank system since buying and selling waste is a profitable business.

The BSM system in Banjarbaru is constantly trying to innovate in conducting its activities, after the launch of waste pick-up service to customer, it provides a breakthrough for coddle its customers, along with Bank

Muamalat of Banjarbaru unit, where every registered customer of BSM Banjarbaru will get a Saving Book and ATM card from Bank Muamalat Banjarbaru.

The purpose of the breakthrough is, beside to facilitate customers to take/save their money, to have public interest in Banjarbaru who are not registered as customer at the bank. The attention of citizens in the BSM system is necessary, in order not to consider waste as disgusting but can be used for economic reasons. Public interest in Banjarbaru to the BSM system is increasing from time to time.

4.4 Policy Strategies to Anticipate Spike Volume of Waste

Waste management is the collection, transport, processing, recycling, or disposal of waste materials. This phrase usually refers to waste materials resulting from human activities, and usually the waste is managed to reduce its impact on health, the environment. Waste management methods vary depending on many things, including the type of waste substances, land use, and availability of area. Waste management is a process with two objectives, namely: turning waste into a material that has economic value, or processing waste to be a material that is not harmful to the environment.

Waste disposal on land hoarding is waste disposal in a way to bury it. This method is the most popular in the world. Hoarding is usually done in unused land, such as a former pit mining. A hoarding land which is designed and well-managed will become hygienic and cheap landfill. If hoarding land is not designed and well-managed, it will lead to a variety of environmental problems, including wind smelling waste, gathering of pests, and many others. Other side effects are the production of methane and carbon dioxide which are also very harmful. Design characteristics of modern land hoarding include a method of collecting wastewater using clay or plastic sheeting. Trash is normally compacted to increase the density and stability, and is covered to not attract pests (usually rats). Many landfills have gas extractor systems which are installed to absorb the produced gas. The collected gas will be flown out of the landfill and then burned in a burning tower to generate electricity.

In waste management, other than by means of disposal, it can be done through waste recycling. Before recycling it, trash should be sorted. The usual trash which needs to be separated are aluminum drink cans, steel cans of food/beverages, HDPE and PET bottles, glass bottles, cardboard, newspapers, magazines, and cardboard. Other types of plastics such as PVC, LDPE, PP, and PS can also be recycled. Recycling of complex products such as computers or cars are more difficult to recycle, because the parts have to be parsed and categorized according to the type of material.

Organic waste materials, such as plant substances, food waste or paper, can be processed using biological processes for compost, or known as composting. The result is compost which can be used as fertilizer. Meanwhile, the methane gas can be used to generate electricity. Example of waste management using the technique of composting is the Green Bin Program in Toronto, Canada, where household organic waste such as kitchen waste and plant cuttings is collected in special bags for composting.

4.5 Strategies Involving Local Communities in Anticipating Spike Volume of Waste

Waste bank in the Banjarbaru community supports Banjarbaru Go Green and Clean program. The waste bank is a business involving the community and a real movement to realize Banjarbaru becomes green and healthy. Implementation of waste banks actually has contain high economic potential due to the activities of the waste banks can deliver real results for the community in the form of employment, additional income for employees of the banks and society of waste savers. This is, of course, in accordance with one of the basic philosophy of the enactment of Act No. 18/2008 on waste management which is to distort the perception of the waste and how to treat waste.

From people's economic perspective, money saving from waste savings and additional revenue from the sale of compost and other creative products from waste is a real benefit of the waste bank. The main principle in managing the proper waste is 3R (reuse, reduce, recycle) which reuse the waste, reduce the waste and recycle the waste. If the principle is implemented consistently, it will bring real output, which is to reduce the pollutant load, bringing economic benefits and make a clean environment, which in turn produce outcomes that can be directly perceived, namely health and income.

Waste Bank Society (BSM) Banjarbaru has still not been optimum in encouraging the role of the waste bank in reducing residual waste from the community that goes to the final landfill in Banjarbaru. By the month of October 2013, the BSM of Banjarbaru has been managing the waste from residents as much as 40 kg/day, or 1200 kg/month. The waste volume reduction is obtained from transactions conducted in BSM Banjarbaru customers both in the main branch and Unit Sungai Tiung.

Since it was established in the year 2011, the board has set a high target of BSM of Banjarbaru to be able to reduce the waste that goes to landfill in Mount Kupang by a total of 2-3 tons per month. In order to obtain the target, in years to come, BSM of Banjarbaru will increase the number of socialization to the community. BSM of Banjarbaru in 2013 encouraged residents in each neighborhood/village to establish and manage the waste bank independently. For the program, BSM of Banjarbaru has prepared a guidebook to easily establish waste bank. The book will be distributed to the neighborhood/community who are interested in establishing waste bank in Banjarbaru.

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