Institutionalization of Sustainable Waste Management: An Extension Program of Environmental Awareness in Jakarta and West Java

A Social Action

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Abstract

The project is designed to facilitate meetings for all stakeholders (local and provincial governments, communities, NGOs, experts, academicians, business sectors, informal sectors and legislators) in waste management in Indonesia, specifically Jakarta and its surrounding cities. The forum is expected to enable all stakeholders to work together in the implementation of sustainable waste management. The program will focus on direct communication with as many stakeholders as possible and provide workshops as a forum for stakeholders to think and work together to speed the goal of a sustainable waste management.

During the project, the team also works on a public campaign to increase public participation through information provision and promotion via website, printed materials, meetings and mass media, and by employing the existing networking own by the stakeholders. This strategy is expected to acquire a snow ball effect for the program.

Along with the above effort, the team will continue its effort in Manggarai to prepare the community to be able to get a higher recycling rate, higher income (through the trade of compost, plants and bio fertilizers they now producing), more jobs and higher environmental awareness and sustainability from the new waste management system implemented. The team also aims to produce a concept of sustainable waste management that take the characteristics of Indonesia people and community into account.

At the end of the program, the team experiences a great pleasure for the passing of the long waited Regulation on Waste Management by the Government of Republic of Indonesia. The team also involves in the initiation of many initiatives for self-regulated waste management have been started in many communities in Jakarta, Depok, and Bandung and individual initiatives.

1. INTRODUCTION

Based on the result of the previous social action, JIP 2006/2007, the so far effort shows that the community still needs support (visits, consultations, motivation, technical supports and assistance) from the team. A year project evidently is not sufficient to get them move forward independently (self-managing). Local government has started to notice the program but bringing the community and the local government together would take a longer time than the first social action (project) time allocation. The team needs to work longer to get the community to be able to maintain and increase the effort they have already achieved in implementing the 4R principle of waste management (reduce, reuse, recycle and replant).

In a wider level, it is realized that without co-operation with all stakeholders, integrated waste management will not be sustainable in a long run. All this time, communities struggle

with their own waste problem and governments try to solve waste problems without fully knowing what are needed and often providing unfitting (or even unneeded) solution. NGOs worked with communities but after they finish the project, a declining becomes apparent and the communities back to what they were. Seminars and workshops are held without any follow ups to realize/ implement the outcomes. A program to get all of those stakeholders together and find a system that accepted by all and an intensive monitoring and assistances of its implementation is much needed. At the least is to plant the seed of idea that sustainability is a holistic concept that can not be approached without the involvement of all stakeholders. This project is design to provide the above mentioned forum for all stakeholders in waste management to think and work together to decide of what should be done and by whom to achieve a sustainable waste management.

2. THE PROJECT

2.1. Literature Review

Sustainable development is most commonly described as development that meets the needs of the present without compromising the ability of future generations to meet their own needs as the definition put forth by The World Commission on Environment and Development that also known as the Brundtland Commission, after its chairperson, Gro Harlem Bruntland (UNCED, 1987). The concept of sustainable development concerns three aspects: environmental, social, and economic. Sustainable development aims to improve the quality of human's welfare whilst living within our ecological means.

Based on the definition by the Brundtland Commission, sustainable waste management aims at the improvement of human life by providing healthy living condition and providing economic advantages for human while at the same time keeping the effect of waste from damaging the ecosystems. It is save to say that sustainable waste management means:

1. Environmentally sustainable waste management.
   Environmentally sustainable waste management that means a waste management that produces no damage to the biosphere and to any particular ecosystems. The focus should not only on the immediate environmental concerns but also on the implication for future generations. Started from its source point, waste should be handled to avoid pollution, including the odor. There is a limit that defines if odors become a disturbance for human being or not. Where and how waste should be discarded is the utmost crucial aspects in environmentally sustainable waste management for its effect are immediate.

2. Socially sustainable waste management.
   Socially sustainable waste management that meeting the need for human's health and wellbeing, maintain the cohesion of a society, including the involvement of the society in its process, help society's members to work together to achieve common goals, and promote the society's members to work together for long term goals.

3. Economically waste management.
   Economically waste management that efficient in the long run. This last part is the most difficult to define. Sustainability means the incorporation of externalities (external costs) into the total cost for the management of waste. Including in the externalities are pollution prevention cost and social cost, and the open opportunity for vulnerable group to be involved in the process.

Alan Fricker cited a definition by Veiderman that ... s*ustainability is a vision of the future that provides us with a road map and helps us focus our attention on a set of values and ethical and moral principles by which to guide our actions"* (Fricker, 2001). This definition can be used as the guiding ethical principle in the implementation of sustainable waste management.

How can sustainability be achieved? Gertsakis and Lewis (2003) suggested that "other writers in recent years have highlighted the fact that "'true' sustainability will require significant increases in the efficiency of resource use (often called 'eco-efficiency')". This is implying that the concept of waste management hierarchy of popularly 3R is the basic requirement for sustainability in waste management.

The concept of sustainable waste management defined further in the concept of Integrated Sustainable Waste Management. Integrated Sustainable Waste Management (ISWM) refers to a waste management system that best suits the society, economy and environment in a given location, a city in most cases (van de Kludert, 2000). ISWM recognises three important dimensions in waste management: (1) stakeholders, (2) waste system elements and (3) sustainability aspects.

Schall (1992) indicated that one way to achieve a sustainable waste management is by employing waste management hierarchy, which is the basis for IWSM (van de Kludert & Anschütz, 2001). Waste management hierarchy is a protocol for minimizing waste and maximizing recycling (Smith & Scott, 2005; CIWMB, 2008). Gertsakis & Lewis (2003)

stated that “the waste management hierarchy is a concept that promotes waste avoidance ahead of recycling and disposal.” There are steps in this hierarchy:

1. The first aim of waste management policy should be waste minimization and reduction, i.e. reduce the sources of waste. This is to say that individuals and businesses should look for opportunities to reduce the waste that they generate before they practice any other option.
2. Secondly, waste re-use should be maximized. After all attempts to reduce or eliminate the generation of waste have been exhausted, the next preferred option is to look for opportunities to reuse items or substances which could become waste.
3. Thirdly, waste recovery by recycling and composting should be maximized. If all waste reduction and reuse options are exhausted, individuals and businesses should try to recycle waste items or substances.
4. Fourthly, waste recovery by energy recovery should be maximized, as in *waste to energy* plants.
5. Finally, the last option is disposal to landfill, including recovery of energy from methane capture from the landfill

In addition, CIWMB stated that in general, items and substances are not considered to be waste if they are reused, and not recycled or discarded. Items or substances that are recycled are considered waste.

The concept of waste management hierarchy is popularly known as the concept of 3R (reduce, reuse, and recycle) that has been widely used as slogan in environmental campaigns for waste reduction and resource recovery (Gertsakis & Lewis, 2003). In some places the slogan is extended into 4R whereas the last “R” is stand for replant (JIP UI, 2007). Local culture, e.g. in Indonesia, entails the need to include the concept of greening the environment as inseparable aspect of 3R concept (Wardhani, 2004). Local customs of home garden and herbal medicine use by community members is the factor that make people accept 3R concept readily, thus changing it into the concept of 4R (Wardhani, 2008).

The concept of sustainable waste management can not be separated from good governance. Gilbert, Stevenson, Girardet and Stren (1996) the importance of good governance to sustainability, specifically in promotion and practice of sustainable resource use including waste minimization and energy efficiency. The term ‘governance’ is used to refer to the process of government, and more broadly, to the ways in which society manages its collective interests. In areas where resources (including human resources)

are limited, cooperation is the most feasible solution. All stakeholders in waste management have its potential to be developed to its optimal to provide efficient management in waste problem.

2.2. Research Questions, Assumptions and Objectives of the Project

Research Questions

The main questions to be answered by this project are:

1. What is the description and the mapping of the existing condition of waste management in Indonesia (specifically in Depok, Jakarta and Bandung) by all Jakarta waste management stakeholders?
2. What further steps should be taken to be able to achieve the concept of sustainable waste management?

Assumption

The project is only possible to be implemented when there is no or low conflict among stakeholders and no political disturbance in the area selected as the project place.

Objectives

1. The project is designed to facilitate forums for all stakeholders (local and provincial governments, communities, NGOs, experts, academicians, business sectors, informal sectors and legislators) in waste management in Indonesia, specifically Jakarta and its surrounding cities. The forum is expected to enable all stakeholders to work together in the implementation of sustainable waste management.
2. The team also aims to produce a concept of sustainable waste management that take the characteristics of Indonesia people and community into account.
3. The project is expected to increase public participation through information provision and promotion via website, printed materials, meetings and mass media, and by employing the existing networking own by the stakeholders. This strategy is expected to acquire a snow ball effect for the program.

2.3. Methodology, Approach, & Strategic Plans

For online seminar, FGDs, and the workshop, the team employs a text analysis to find emerging issues. These issues then classified in a wider class and narrated based on the information gathered.

Two approaches are used in the proposed project:

1. Educational approach; Environmental awareness of people and other stakeholders is the utmost important goal of this project. All of the activity is aimed to raise the awareness that would lead to a greater participation in waste management.
2. Systemic and holistic approach; All stakeholders will be involved to build and develop the system needed, to work on the implementation of the workshops, and to monitor together.

The project will be run through the following methods:

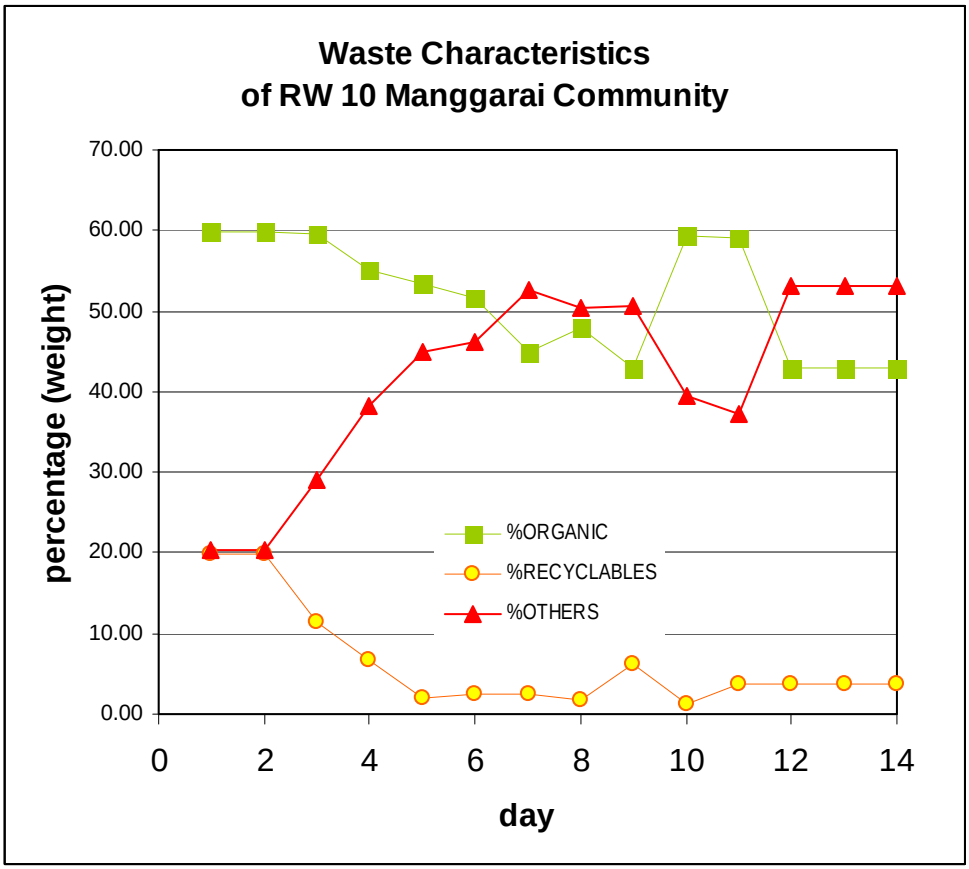
1. Direct approach: before workshops the team will meet all stakeholders directly to appeal the involvement and commitment of each stakeholder to work together.
2. Involvement of all stakeholders in information and ideas sharing through workshops.
3. Information provision and promotion via website, printed materials, meetings and mass media.

3. RESULTS

3.1. Pre-project

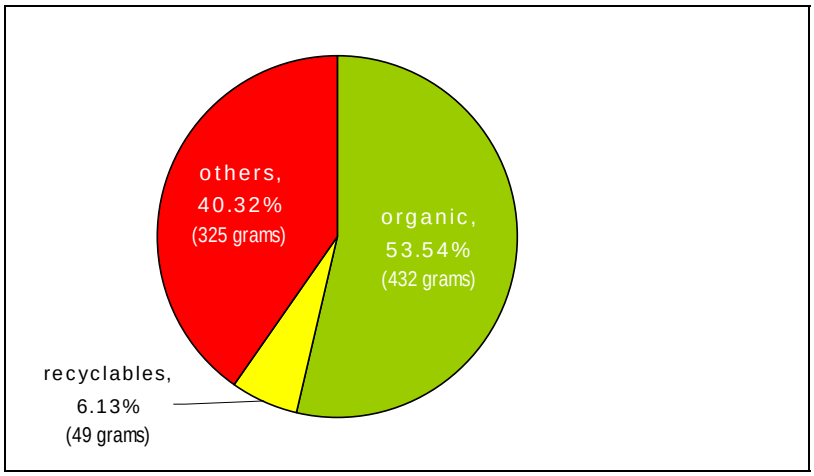
Prior to the JIP award announcement by the Tokyo Foundation for JIP 2007/2008, the team and the community where the team works conducted a two weeks simple research on how much waste produced by the community. The research was conducted in January 2007. Ninety seven (97) households participated in the research. The team and some assistants visited each household to measure the waste they produce everyday in the same time. We measure their waste in three main categories: organic waste, recyclables, and others. Organic waste is kitchen waste that was resulting from meals making. Recyclables consist of waste that can be sold again to *pemulung* (Indonesian for waste scavenger). Falls into this category are cardboards, plastic bottles, cans, plastic containers, plastic glass ex-mineral water, newspapers, books and magazines. Others are waste that are not organic waste and cannot be sold to *pemulung*. Waste production is measured everyday in the same time for each household for 14 days.

The data analysis shows that the highest composition of waste produced by people in Manggarai is organic waste (Picture 1). They produce only little recyclable waste. Based on the data, the community does not produce recyclable waste in daily basis.



Picture 1. Waste Characteristics of RW 10 Manggarai Community in January 2007.

More than half the waste the community produces is organic waste (53.54%), followed by other wastes (40.32%; Picture 2). They produce an average of 432 grams organic waste, 49 grams recyclable waste, and 325 other wastes daily. Even though recyclable waste is low in weigh, but considering its shape (eg. plastic bottle), the volume is quite high.



Picture 2. Waste Composition of Waste Generation in RW 10 Manggarai Community

Based on this simple research, it is recommended that waste reduction is important to reduce waste that are not classified as organic waste and can not be used/ sold again. The team also comes to a conclusion that composting is very important to reduce more than half of the total

weight of the waste produced by community. This result is brought up in many meeting with stakeholders.

3.2. Meeting with Stakeholders, Online Discussion & Focus Group Discussions (FGDs)

For the first 3 months of the project, March-June 2007, the team actively met with various stakeholders in waste management (for details see Appendix 1). The team met with some stakeholders in a forum held in March by the Agency for The Assessment and Application of Technology, BPPT in Jakarta. In this forum, the team (and some accompanying community members) met with people from BPPT, local government from other cities, and community members from different area that has also started their waste management program. The team also met with the grassroots level in a forum held by a community live in Ciliwung riverbank in May. The community has an informal group for its youth called Sanggar Ciliwung (Ciliwung Workshop). In this forum, the team act as presenter in the forum to introduce self-governance of waste management and appeals to change the way people dispose of the waste by throwing it into the river. During this forum, the team met with some NGOs that provide assistance for community in waste management. In June, the team met with Dana Mitra Lingkungan (DML, Friends of The Environment Fund) and with some stakeholders in the office of WALHI (Indonesia Friends of the Earth, FoE). The team introduces its program to provide a forum for all stakeholders to work together. During the meetings, the team listens to the experience of each stakeholder and asks for their opinion on the stumbling blocks they meet in their works. The team also explains its aim to held workshops as a meeting forum for stakeholders to speed the global goal achievement of having a national regulation on waste management. Many suggested that a small meeting is needed prior to the workshops.

The team decided that instead of meeting many stakeholders one by one as initially planned, the benefit would be higher if many stakeholders can meet together in one forum. The team, then, designs a focus group discussion (FGD) to accommodate this need while continue meeting with other stakeholders from governmental agencies and house of representatives in July 2008. For a month, in June-July, the team learns how to conduct an effective FGD and make a trial at the University of Indonesia. Books, papers, and reports are reviewed. Discussions and meetings are conducted by team members to have the same perception and method in conducting the coming FGDs.

To gain broader inputs on the content of the issue, the team decided to hold an online discussion using a networking that was formed from the previous project by the same team and a network owned by the SYLFF Association of University of Indonesia. The online

discussion was held for 5 days, on 4 – 8 June 2008. The theme brought forward is “Initiation, Assistance & Building Community’s Self-governance in Waste Management”. The discussion attended online by 211 participants from many cities in Indonesia, and people from other countries like Australia, Japan, and the United States. There were a total of 256 posting during the 5 days online discussion. A 10 page summary that was divided into two summaries is provided by the team for the participants (Box 1). Some participant suggested the team to write the discussion into a book to make the information exchanged during the discussion available for wider audience.

The team held 3 FGDs in July and August 2008. The first FGD was held in Depok City on 23 July 2008 and was attended by 14 participants. The second FGD was held in Jakarta on 30 July 2008 and was attended by 28 participants. The third FGD was held in Bandung City, West Java Province, on 09 August 2008 with the cooperation of YPBB (Yayasan Pengembangan Biosains & Bioteknologi, Foundation for Bioscience and Biotechnology Development), an NGO that actively work to assist communities in waste management, and was attended by 16 participants. Participants invited in the three FGDs represent different stakeholders:

1. local government,
2. academician (universities),
3. local communities,
4. city council & house of representatives,
5. press,
6. NGO, and
7. governmental agencies.

BOX 1

Short summary of the online discussion on "Initiation, Assistance & Building Community's Self-governance in Waste Management"

4 - 8 June 2007

- ☑ Initiation to form a green community should be designed based on the local modalities of the community, available media, and the stakeholders. Local conflicts and potential economic development should be put into account in the strategic planning. PRA (Participatory Rural Appraisal) can be used a method to gather information, but this does not mean that other method can not be used.
- ☑ People/ organization provided assistance for community should lessen the local conflict (if it's exist) and build the community's ability to continue the progress independently.
- ☑ Indicators of successful program should be provided.
- ☑ Self-government of waste management program should include the following approaches: train environmental cadres, information dissemination using existing community's forums, provide examples in daily basis, incorporated the program into the local organizational structure.
- ☑ The extension of self-government of waste management program should include schools and higher education institutions.
- ☑ Regulation on waste management is needed.
- ☑ Cooperation with local government should be encouraged.

All invited participant received a paper of term of reference of the FGD they were invited to and asked to prepare their point of view to be shared with the other stakeholders. The participants also received a brief paper of what FGD is, how we conduct the FGD, and what process is expected to be take place. Each FGD took at least 3 hours to finish. All session is recorded and the transcript is made. The verbatim were analyzed to find issues emerging from the FGDs. The issues were then classified into wider categories that are called important issues. These issues are used to design the working groups for the workshops. The team prepared a paper on the result of the FGDs (3 reports for on the FGDs, one report each, and one conclusive report) that provide explanation for each important issue emerging from the FGDs. Reports are provided in Indonesian and distributed to all participants and other related institutions using both e-mail and printed materials. A very short summary of the result of the FGDs is provided in Box 2. The conclusive report is also included as a chapter in a book on waste issue that is going to be published in Indonesia.

BOX 2

Short summary of the result of FGDs on "Institution Capacity Building in Waste Management"
23, 30 July 2007 & 09 August 2007
In Depok, Jakarta & Bandung, INDONESIA

There are four important issues that came to light in the three FGDs held bt the JIP team. They are:

1. The need to change paradigm in waste management from collect and buried to that that integrated the concept of 3R and sustainability,
2. The need for a regulation of waste management that applied nationwide and enforcement to implement the existing local regulations,
3. The need for cooperation among stakeholders in waste management in all level and to promote the involvement of all stakeholders in the planning, implementation, and controlling process in waste management,
4. The need to revise budgeting of waste management program in the governmental budget. The budget should cover education program, socialization, public campaign, innovative approach, initiatives, and control mechanism.

Beside above major issues, each city face different minor issues:

Bandung is facing a polemic in using a technology in its final disposal site. Much opposition is arised from NGOs, community, and some academician. Many participants state that the structure and form of the institution responsible for waste management in the city is unsuitable. The good point is that Bandung already has new local regulation in waste management. Implementation of the regulasi is strongly recommended.

Jakarta has sufficient budget on waste management. The last few years saw the rise of many initiatives in the communities to start their own waste management and greening the environment program. What is needed in Jakarta are a higher cooperation among stakeholders and efficiency in the governance of waste management. The challenge is on the characteristics of its urban population to fit into the programs.

Depok is relatively smaller that the other two cities. Its population density is lower than the other two cities and some initiatives has alredy been started by some communities and NGOs. Its final disposal site is considered more well-managed than that of Bandung or Jakarta. Its weakness is the lack of clear regulation on sustainable waste management.

3.3. Regional & National Workshops

Based in the result of the FGDs, the team designed two workshops. One workshop is a regional workshop that included some cities: Jakarta, Depok, Bandung, Tangerang, and Bekasi. The other workshop is a national workshop that included a wider area. In the initial proposal, the team should organize three workshops. The team could not organize the third workshop due to some political situation in Bandung. After some consultation with the Tokyo Foundation, the team changes it into different type of workshop for communities in Bandung, Depok, and Jakarta to start their own waste management program.

The national workshop was held on 25 October 2007 in Jakarta. The workshop was attended by 126 participants (some people were not recorded in the participant list). Prior to the workshop, all participants received a paper on term of reference, a brief description on the working groups and a report on the previous FGDs. The national workshop was held with the

cooperation of the Cleaning Department of Greater Jakarta Province, BPPT, DML, and IWF (Indonesia Waste Forum). The workshop was held in BPPT Building 2, 2nd Floor.

The purpose of the workshop are to have the stakeholders gather and meet in a forum, promote cooperation among stakeholders, share resources, define the problems, and planning the next steps. The workshop consisted of 2 plenary sessions and 4 working groups. One plenary session at the beginning of the forum was for introducing the current problem defined from the FGD (*focus group discussion*) held 3 months prior to the workshop to all participants, and one at the end to report the result from each working group. The topics for the 4 working groups are designed based on the finding in the FGD (pictures can be seen in Appendix 2: News Update 7).

Four working groups is prepared for the workshop: (1). Effective Regulation, (2) Budget Control, (3) Public Campaign & Public Participation, and (4) Vertical and Horizontal Cooperation. Two facilitators were selected for each working group by involving important key persons in waste management that is expected to monitor the follow ups. The short summary of the result of the national workshop is presented in Box 3.

BOX 3
Short summary of the result of the National Workshop
on "Institution Capacity Building in Waste Management"
25 October 2007
In Jakarta, INDONESIA

There are some important outputs emerging from each working group of the national workshop.

First, legislative bodies should pass the regulation (national and local regulation) on a comprehensive waste management based on the inputs from the executive bodies. At the time of the workshop, the current draft of the regulation is way far down the list to be discussed in the legislation meetings. The regulation should include points on the responsibility and right of local government, minimum service standards, law enforcement on waste regulation, waste management budgeting, sommunity's responsibility, and municipal waste management that include the concept of 4R.

Secondly, budget use transparency is asked. Control mechanism by Sub-district Committee should be encourage and supported. The mechanism should be informed to all sub-district committees in the Greater Jakarta.

Thirdly, information of communities' success in waste management initiatives should be made available for wider public through the website of the Cleaning Department of the Greater Jakarta Province. The local government should set up recycling centers at sub-district level.

Fourthly, cooperation among stakeholders should be strengthened, not by making a new organization but by employing the existing networking through vertical and horizontal cooperation.

The regional workshop was held 5 days after the national workshop in Depok on October 30, 2007. As in the national workshop, the purpose of this regional workshop are to have the

stakeholders gather and meet in a forum, promote cooperation among stakeholders, share resources, define the problems, and planning the next steps. The workshop consisted of 2 plenary sessions and 4 working groups that are slightly different from working groups in workshop in Jakarta. They are: (1) Regulation, (2) Public Campaign & Public Participation, (3)Education, and (4) Cooperation. One plenary session at the beginning of the forum was for introducing the current problem defined from the FGD (*focus group discussion*) held 3 months prior to the workshop to all participants, and one at the end to report the result from each working group. There were a total of 82 participants present at the workshop. Participants come from Jakarta, Bandung, Bekasi, Bogor, and Tangerang. Except Jakarta, all are cities in West Java Province. Participants have various backgrounds: government employees, universities, communities, NGOs, companies, religious groups (church and Islamic school), researchers, teachers, and expert staff of House of Representation. The regional workshop was held with the cooperation of Cleaning and Environmental Department of Depok City. The short summary of the result is presented in Box 4.

BOX 4

Short summary of the result of the Reginal Workshop
on "Institution Capacity Building in Waste Management"
30 October 2007
In Depok, West Java, INDONESIA

There are some important outputs emerging from each working group of the national workshop:

- ☑ The city needs to start a sustainable waste management program that was enacted in local regulation, followed by a pilot project that was monitored by all stakeholders. The result and evaluation of that pilot project should be used in its wider implementation in the city.
- ☑ Incentive and disincentive mechanism is expected to make the implementation of the program be more efficient.
- ☑ Public campaign that incorporated the cooperation of all stakeholders should be prepared to have a wider participation in waste management in the city. The campaign should include simple example for public. The city should provide training and workshop for communities.
- ☑ Independent bodies (forum) or the existing meeting forum among stakeholders should be supported to be actively involved in the coordinating, planning, monitoring and evaluation of the program.

Immediately after the workshops, the team sends a press release to the press.

3.4. Starter Kits Provision for Communities

The team designs a starter kit provision program for communities as a replacement for the regional workshop in Bandung. The change has been consulted to the Tokyo Foundation and and has been approved. The change makes the project to last longer that expected. Instead of in January 2008, the program finished in April 2008.

There are some reasons behind the formulation of this program as follows:

1. By providing Starter Kits, we can extend the finding, the experience, and the success of JIP into broader scope.
2. This will drive communities' change for a better understanding of the principles of 3R/4R and the natural conservation principals in urban area by using "learning by doing" approach.
3. People are more interested in action since there were so many seminars on waste management that do not have any follow-up programs as expected. The workshops held by JIP are the bridge between academic discourse and social action. By providing Starter Kits, the team expects that it will be positively responded by communities to start the social actions.
4. During the Asia/Pacific Regional Forum in which one of the JIP project leaders attended, there are some interests voiced to apply similar program in India. We expect that this JIP can become an initial work that can be spread internationally by introducing the Starter Kit.

The starter Kit itself consists of:

1. A brief introduction of PRA (Participatory Rural Appraisal) methods that was used by the team to involve many community members in planning their activities for better environmental condition in their area.
2. Printed Forms and Schedules (based on the experience of the JIP)
3. Manual Book on how to initiate a waste management program within a small urban community.
4. Posters (one poster has been printed, the other one is a poster of instruction of simple composting that has been implemented by the project and proved effective)
5. Composters
6. Assistance in planning, implementation, and monitoring.

Pictures of posters and composters can be seen in Appendix 3.

The team held two trainings for community to assist how to start an environmental program and to use the starter kit. The first training was held in Jakarta on 10 March 2008 and the second one was held in Bandung on 15 March 2008. Nineteen persons from 3 groups and an observer (two communities from Depok and a school from Jakarta) were participating in the training that was held in YMIK High School Jakarta. Twelve persons from 3 groups (2 communities and a school in Bandung) were participating in the training that was held at SMU 5 Bandung (State High School 5 Bandung). Both trainings lasted for 3 hours. The training in

Bandung was held with the cooperation with YPBB (Yayasan Pengembangan Biosains & Bioteknologi, Foundation for Bioscience and Biotechnology Development).

At the end of the trainings, each group produces a map of their community with some marks to indicate the problems and assets they have. Each person makes a document of what they would have done in the next 3 and 6 weeks time when the team comes to monitor and evaluate the progress. They receive a set of starter kit per person to be used individually. All the short term plans made individually were compiled in one document (a 4 pages document for each training) and was sent to all participants. The result and analysis for the training was summarized in Box 5.

BOX 5

Short summary of the result of the training of the Starter Kit Provision Program for Community
10, 15 March 2008
In Jakarta & Bandung, INDONESIA

Depok & Jakarta

1. **Community group of RT 06/05 Kavling Pupuk Kujang Beji Timur - Depok**
   All starter kit recipient have all successfully make compost. Of the five recipients, one person uses the composter as demonstration tool for an elementary school in the immediate area in a competition of simple technology for waste management. The school has started its own composting and greening the environment program. The community itself is starting the own program.
2. **Community group of RW 01 Mekarsari DEPOK**
   All starter kit recipient have all successfully make compost. There is no difficulty reported but one. A participant missed one step and failed in the initial trial. Another participant uses the kit as a demonstration tool when she makes a socialization program by her own. The community now is making their own small herbal gardens using the compost they produce. They also started a composting practice with the community members regularly. They need more composters for households which are interested to participate in the program.
3. **YMIK High School**
   The students made some more composters and paint it with their own drawing to get more attention in school level. The teachers involved in the training have all successfully make compost. One teacher speeds the process by asking for more organic waste at the market she was visiting. The other teacher is using the program as a group activity for his students.

Badung

The result in Bandung is less successful than those in Depok and Jakarta. Some participants have successfully implemented their own program. But some others are facing with difficulties like refusal by their household members due to perceived difficulties, cleanliness, and safety. The team guesses that this is cause possibly by different culture, support, and intragroup relation pattern.

3.5. Public Campaign

During the project, the team also works on a public campaign program to increase public participation through information provision and promotion via website, printed materials, meetings and mass media, and by employing the existing networking own by the stakeholders. This strategy is expected to acquire a snow ball effect for the program. The

1. Exhibitions
    a. Exhibition in FISIP Fun Fair at University of Indonesia on Sunday, 2 September 2007 (Appendix 2 - Update 1)
    b. Exhibition in the Opening Event of Cakung Cilincing Composting Plant by the Governor of Greater Jakarta Province on 20 September 2007 (Appendix 2 – Update 4)
    c. Exhibition during the national workshop in Jakarta (Appendix 2 – Update 7)
    d.
2. Interactive talk program in radios
    a. Interactive talk program on RRI (Radio of Republic of Indonesia) Programa 1 (Jakarta-wide program) on 11 September 2007 and on Kamajaya Radio on 12 September 2007 with the Cleaning Department of Greater Jakarta Province (Appendix 2 – Update 3)
    b. Interactive talk program on Surya Metro Radio on 20 November 2007 and Muslimah Hatahiriyah on 2 December 2007.
3. Involvement in government program
    a. Participation in socialization program of a new waste management system by the local government of Depok City for 3 days (28, 29 August 2007 & 3 September 2007; Appendix 2 - Update 2)
    b. Participation in the Opening Event of Cakung Cilincing Composting Plant by the Governor of Greater Jakarta Province on 20 September 2007 (Appendix 2 – Update 4)
4. Mass media
    a. Article by Barani Sihotang, Sinar Pagi weekly newspapers, 1-7 August 2007, “Terungkap dalam Diskusi: Kodya Depok Belum Miliki Regulasi Tata Kelola Sampah” (*Revealed in Discussion: The City of Depok Does Not Have Regulations on Waste Management*). The report was based on the FGD in Depok.
    b. Article on Tekad, weekly newspapers in Depok, Edisi 016/ Tahun 1, 2-15 Agustus 2007, “Penanganan Sampah Butuh Gerakan Bersama” (*Waste Management Needs Joint Movement*). The report was based on the FGD in Depok.
    c. Article by Putri Rosalina, Kompas daily newspapers, 20 August 2007, “Karut Marut Kelembagaan Sampah Indonesia” (*The Tangle of Waste Institution in Indonesia*). The report was based on the FGD in Jakarta. Also available in www.dml.or.id/dml5/sampah/karut-marut_kelembagaan_sampah_indonesia.

dml, digilib.ampl.or.id/detail/detail.php?row=0&...&kd_link=&kode=1715, www.menlh.go.id/popup.php?cat=17&id=2536.

d. Article by Sarojini Imran, Megapolitan Pos, Edisi 13 Tahun 1, November 2007, "Lokakarya Penguatan Kelembagaan Pengelolaan Sampah di Jakarta" (*Workshop on Capacity Building in Waste Management in Jakarta*). The report was based on the national workshop in Jakarta.
e. Article by Maulida Kurniasari, Informasi Teknologi: Media Internal BPPT p. 21-22, Desember 2007, "Oh Sampah, Alangkah Indahmu!" (*O, Waste! How Beautiful You Are!*). The report was based on the interview with Ms. Beby, Ms. Erus, and Mr. Saih, community members of RW 10 Manggarai Community.
f. Event Information, Informasi Teknologi: Media Internal BPPT p. 33, Desember 2007, Workshop on Waste Management. The report was based on the national workshop in Jakarta.
g. Article by Novika, Persepsi Magazine, No 2 Tahun 2008. "Mereka yang Peduli dan Bertindak Nyata: Peranan Citra Wardhani terhadap Lingkungan di Manggarai (*They Who Care and Act on It: The Role of Citra Wardhani in Manggarai Community*).

5. Internet
    a. website: http://www.jip-indonesia.net
    b. Maillist: http://groups.yahoo.com/group/greensociety/
    c. Report on FGDs in Jakarta, Depok, and Bandung (via e-mail and on the website)
    d. Reports on workshops in Jakarta and Depok.
    e. Information and progress report on the Trainings for Communities follow-ups.
    f. Article of the national workshop on http://www.bppt.go.id/index.php?option=com_content&task=view&id=54349&Itemid=30
    g. Article by Sarojini Imran in Lantan Bentala's biweekly e-newsletter. No. 31 Tahun 2. Membuat Kertas Daur Ulang (*Making Recycled Paper*).
6. Printed material of all reports.
7. Posters. The team designs two posters. The first was about an appeal to care for the environment by implementing 4R concept individually and in groups. The second poster is about information of waste generation in Jakarta and steps to composting organic waste. Both posters were distributed during the workshops and the following months to schools, offices, universities, train stations, libraries and individuals.

3.6. Working with Manggarai Community

In the following month after the first phase of JIP in 2006/2007, the team found that the community is active in:

1. Greening the environment
2. Composting & make composters
3. Making handicraft using used newspapers

The team continues in visiting the project site (Appendix 1, Appendix 2 – Update 5 & 6) and working with Manggarai Community in some of public campaign program. As listed in the campaign program, the exhibition is done with the cooperation of Manggarai Community where they show their handicrafts and composters (Pictures are in Appendix 3). They produce beautiful boxes, side table lamp, small street lamp, bags, card holder, cases, and many more that are made from used newspapers. Many people voice their astonishment when seeing the things they produce. To support this development, the team supports the community to join a "Basic Selling Skills" workshop on 25 November 2007 (appendix 2 – Update 10). This brought Ms. Beby, a community member, to South Sulawesi (another island north-eastern from Java) with Ms. Ninik Nuryanti of Rawajati Community to teach peoples there how to make the handicrafts. The community helps the team in providing the needed composters for campaign. Many people has bought composters from the community.

4. ANALYSIS

Many cities in Indonesia are still facing the problem of waste management. Most cities are using an open dumping site for their disposal methods (Environmental Ministry of RI, 2007). Some city has started its sanitary landfill programs, but this is very limited to a small numbers. Many experience in cities shows that this approach moves from open dumping to burning to sanitary landfill and to recycling (Gandy, 1994; Elkington & Shopley, 1989; Wardhani, 2007). Some phase can be skipped, so municipal waste management can move from open dumping directly to recycling approach without having experience of burning the waste. The recycling approach has been the recommendation of many institutions and experts on waste management that known as integrated solid waste management or solid waste management hierarchy (van de Kludert, 2000; Smith & Scott, 2005; CIWMB, 2008).

Form the FGDs and workshops held by the team, it is apparent that all stakeholders in waste management in Depok, Jakarta and Bandung understand this. All are prefer a separation method at the waste generation point of source, which is households, and recycling to the old methods. But merely understanding can not solve the problems. There is a vicious cycle

formed that still has not been broken. Many communities are ready to start a waste separation and composting program. But the communities which have started its waste management program are facing the uncertainty of its continuity. They expected that the current program is handled by the local government. This is very understandable since in managing their own waste required the community to put forth more effort to run the program. The use their own money to buy and propagate plant and make gardens. They also use their own precious time to teach other community members and motivate them. In the long run, there is a high risk of free-rider in the program, people who think that the effort required of them does not equal the result. All self-governance waste management initiated by the community can not reach a 100% participation from their community members. The non-compliant members of the community mostly refuse to participate for the following reasons:

1. Perceived difficulties.

   Waste separation and composting are perceived as difficult and take time. Some people who does not get a collection service from the government might think that they have already solve their waste problem by paying other people to collect their waste and dump it somewhere else where they can not see it.

2. Unfairness.

   People who work on the waste management program usually receive rewards. It could be that they become a leader in their activities, invited to give presentation, or interviewed by visitors. This kind of rewards can not be distributed equally to all community members.

   There is also different kind of unfairness. Some people think that it is unfair if they have to put more effort to handle their waste while they have already paid for the service. “I would not separate my waste if at the end they (the waste collectors) put it again in the same container. What’s the point in separating waste?” “What does the government do if we have to manage everything?” Similar comments are heard in many places where some community members refuse to participate.

3. Perceived limited time.

   Quite many household have both parents working. They said that do not have time to separate the waste and composting or do not have time to teach the house maid to do it.

In the other hand, the governments have different problems. They understand that they have to use the new approach in waste management. Some difficulties perceived by the government are:

1. Limited human resources.

The implementation of sustainable waste management required frequent meeting with people. The government stated that it does not have enough human resources to handle the socialization and assistance for the waste management program. The current human resources have already had their hand full with other problems in other services.

2. Lack of regulations.
   There is no (or limited, in some area) regulation on waste management. Depok, for example, only have one regulation on waste and this regulation mainly dealing with waste retribution issue. The governments are anxious to make an innovation for fear to face opposition from the city councils.
3. Political aspect.
   With the new democratic system in the country, there is a strong opposition between parties in the house of representation and city council. This rivalry makes the current government to be too restricted to move.
4. Lack of financial support.
   The limited budget is one of the reasons by some local government to implement a sustainable waste management.
5. Limited participation by the people

City councils are facing with internal disagreement between factions. Government move and program, and budgeting become a battle ground for the factions. A different move by local government can resulted in a summon by the city council. Unless there is a break in the cycle, the current condition will persist.

The problem of waste management reflects a social dilemma situation. Social dilemma is a situation where a person is faced with a situation whether to choose a personal interest or to act on group interest (Kollock, 1998; de Cremer, 2007; Messick & Brewer, 1983). Environmental problems like this required a structural solution (Messick & Brewer, 1983; Dawes, 1986; Kollock 1998). Structural solution is policies that created to control individual access to resources and manage the resources. The existence of a structural solution will solve the problem of free-riders. One type of structural solution is to change the payoffs of individual behavior to encourage cooperation (Samuelson, 1993, Stangor, 2004). The example of this solution is the incentive-disincentive solution that was expressed by a facilitator of the regional workshop in Depok, Mr. Naoyuki Sakumoto, a researcher of waste regulation in Japan and Indonesia. Those who cooperate will gain incentive and those who defect will get a fine/ disincentive.

A structural solution also provides fairness for community members, an important factor in cooperation in a social dilemma. Fairness has been an important factor in cooperation (Eek, Biel, & Garling, 1998; Wilke, 1991, Sugiura, 2005, Wardhani, 2006). People use fairness as a norm to bridge their personal need and maintain collective interest. This norm is shared and internalized in socialization process (Scott, 1991 dan Sherif, 1966 *dalam* Kazemi & Eek, 2008). A collective culture will more likely to share the norm more often than people in individualistic culture.

People's participation has been a dispute in the FGDs and workshops. In one hand, there is information that people are willing to have a waste management program that rewuired them to separate waste while in the other hand there are inputs of the refusal to to participate in the program. Both situation are exist. There are a type of community that is very enthusiastic in running their waste management program. This community have some rural community carracteristics even though they live in urban area. But there is also different type of community in the urban areas. This difference could be caused by their cultural background or by their urban life style. As has been experience in the monitoring and evaluation in the starter kit provision program done by the team, each community react differently eventhough they trained in the same training. The sustainable waste management program will only successful of we put into account the social factor in sustainability in its implementation.

Defection by people to participate in self-governance waste management program can be solved by providing assistance directly to the community. From JIP UI's experience in phase 1 in 2006-2007 and from the input from the participants in the FGDs and workshops held by the team, what is needed is people who is working with the community. This means that the implementation of sustainable waste management program needs a high numbers of human resources.

An innovation by a Governor of East Java, Basofi Sudirman, can be used to provide a way out in the problem of limited human resources by the governments. He recruited fresh graduates to work on the field in the government program to assist rural communities. This approach provide the assistance needed by the community, solve the governments' problem of limited human resources, provide wider working opportunities for fresh graduate (that in turn lower the unemployment rate in short run and provide a better quality of work force in the long run). This approach has also been used by Unilever in its CSR program, Green and Clean, in Jakarta and Surabaya. They use fresh graduates to act as what they call as "motivator" to work with the community implementing their greening the environment and waste management program. Many people remark this approach as successful.

We think that the financial problem for the implementation of sustainable waste management is not really a matter of lack of fund. It is more of a problem of efficiency. Many local governments spend more money to buy trucks and other instruments. They are forced by the circumstances to solve the immediate problem to provide cleanliness of the city by transporting the waste to the final disposal site. This is a problem faced by many developing countries. Dakar in Senegal, for example, spend nearly 75% of it waste management cost on collection and transportation (Elkongton & Shopley, 1989). The solution itself is quite simple. Instead of allocation fund for transportation cost, implementation of sustainable waste management by waste separation at its source and composting, the government would be able to save transportation cost tremendously because the trips will be highly reduced. A participant in FGD Depok, Mr. Daniel Rusly, suggests that from his simple research, the government can save between 40-60% of it transportation cost by implementing the above mentioned solution. This reduction is getting higher now with the new higher fuel cost imposed by the government. Budget Control Mechanism Working Group if the national workshop stated that there is no budget allocation for community empowerment in waste management. Community is working for free and is expected to produce good result in governmental programs. The working group suggested that waste management program should be reflected in the budget. There should be transparency in the budget use.

The involvement of community in the decision making process is very imperative to the success of sustainable waste management. This procedural fairness plays a very important role to get high cooperation in the program (Hauenstein, McGonigle, & Flinder, 2001). All stakeholders should actively create and maintain cooperation among themselves to achieve the common goal.

Identification by the Regulation Effectively Working Group (REWG) revealed that Indonesia does not have a national regulation waste management. This has been solved with the enactment of the Regulation on Waste Management on 4 April 2008. This development come to the surprise on many stakeholders in waste management since until last year the draft was not near the top drafts to be discussed by the House of Representatives. The next is the lack of Minimum Service Standards (MSS) by cities and the Standard of Procedures (SoP) accompanying it. Cities and other stakeholders in waste management need to draft a MSS and SoP for immediate use.

We thought that the best way to achieve sustainable waste management in cities in Indonesia is buy using partnership approach between the local government and the community. The

involvement of other stakeholders should be included in the scheme. Partnership between the local government and community with limited fund provide a great benefit for the city in overcoming their environmental and social problems as in the experience of Chatanooga in the USA (Cunningham & Cunningham, 2002). By employing self governance in community waste management that incorporating composting, the waste flow from the community will drop remarkably. This will lead to a lower collection trips by the city. The cost saved can be used to provide service in the areas that has not been reach previously. The government in return can provide incentive for the community.

5. CONCLUSIONS & RECOMMENDATIONS

The project reveals much useful information on what is really happened in 3 cities in Indonesia and what the stakeholders experienced and need. The project provide a medium for all stakeholders to share and exchange their thought and ideas. There are so many requests from almost all stakeholders for transparency and procedural justice in the waste management. The public now face the uncertainty due to the limited regulation and policies in waste management of lack of its socialization.

As experienced by the team during FGDs, workshops, meetings with stakeholders, and in the starter kit provisions and the following training, monitoring and evaluation, it is reasonably save to say that all the "capital" to implement sustainable waste management is already present. It is time to put all the puzzle pieces into the big picture of sustainable waste management in Indonesia. Putting this all together is not an easy feat, but with the right intention, good willing, and smart effort, that would take a shorter time to achieve.

As stated by Gandy (1994) that:

> *"The pursuit of sustainable waste management as we enter the twenty first century must be placed within the context of diverse pressures on public policy from sources as the revolution in information technology, the restructuring of global economy, mass movements of people in search of a better quality of life, fluidity and uncertainty in political developments, and the difficulties facing the post war Keynesian welfare state as an aging population and intense fiscal pressure force a constant re-evaluation of the relative roles of the state and the market in modern capitalist societies"*

The steps planned to achieve the common goal of sustainable waste management should be open for re-evaluation to accommodate the dynamic of the society. The project at the least witness the passing of the long waited Regulation on Waste Management, thanks to the stakeholders that pushing it together this last few month. This is due mostly to the involvement

all stakeholders who are working together to achieve the goal of having a national regulation on waste management. The team plays as a neutral party in the process that gained more from the stakeholders.

The team realized that there is limited resources (especially on information) that can be accessed by the public. The networking, the experience of each stakeholder, the lesson learned, have not well documented for all cities and public to use. The team collects much information during the project that needed to be written.

There are some utmost important next steps should be taken:

1. Materials and information on waste management should be made available for public,
2. Capacity building assistance for all cities and stakeholders (e.g. avocations for city council members and political parties) is needed,
3. Promotion to encourage public involvement in development program should be more intensive.

Many cities have a very high possibility to successfully implement sustainable waste development in their area where there are space available and the population is not as dense as in Jakarta.

There are many researches needed to study the local culture that to support environmental programs. What programs suitable for a certain community? How much waste a community produced, what is the characteristics, and what waste management design appropriate to be used? What is people attitude and behavior on waste in a certain community? What education system fit a community? What policy on waste management needed in a city? How people can be involved in the planning and monitoring of waste management program? What is the role of schools and education institutions in waste management? How public policies affect household behavior in waste management? What is the mapping of recycling market? There are so many questions arise from this project. The possibility and need for research is unlimited.

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