

Report for Proceedings - 6
Stakeholder and S.W.O.T. Analysis Workshop
for the BEM and Team ESTERO
Barangay 46, Pasay City

Date: July 6, 2004

Place: Barangay Chapel

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**Experimental Research for the Study on Drainage Improvement
In the Core Area of Metropolitan Manila**

**STAKEHOLDER and S.W.O.T. ANALYSES
WORKSHOP for BEM and TEAM ESTERO**

July 6, 2004
8:00 a.m. – 5:00 p.m.
Barangay Hall, Barangay 46, Pasay City

PROCEEDINGS

I. INTRODUCTION

Three Barangay Units, Barangays 46, Pasay City, Palanan, Makati City, and 195 City of Manila, were selected for the Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila as typical and/or representative barangays in the Core Area of Metropolitan Manila (DICAMM) for the development of a model for Barangay Institutional System. The selection was based on certain conditions such as the character of the people, and types of problems in the areas.

In the Stakeholder and SWOT (Strengths, Weaknesses, Opportunities, Threats) Analyses Workshop for BEM (Barangay Environmental Manager) and Team ESTERO (Environmental Strategic Task for Estero Renewal Organizing) of Barangay 195, City of Manila, the Experimental Research Study Team assisted the Barangay Participants in identifying their area's strengths, weaknesses, opportunities, and threats under each Focal Point such as the Solid Waste Management, Beautification and Greening, Pollution Control, and Information, Education and Communication.

II. PROFILE OF PARTICIPANTS

All Organizers from the Experimental Research Study Team were present for the Workshop at the Barangay Hall of Barangay 46, Pasay City. Dr. Felixberto H. Roquia, Jr. (Public Participation II-JICA Study Team), Over-all Coordinator Mr. Jesus O. Averilla (Head/Env't/Environment/Solid Waste Management-Counterpart Team), Barangay Coordinator for Barangay Palanan, Makati City Engr. Manuel Leaño (Solid Waste Analyst), Barangay Facilitator for Barangay 46, Pasay City Engr. Joselito B. Manooos (Public Participation-Counterpart Team), Barangay Coordinator for Barangay 195, City of Manila Engr. Leonardo Sanchez (Social Issue/Public Participation I-Counterpart Team), and Ms. Bridgette Bautista (Coordinator).

Also present to assist in the Workshop were, Support Staff from JICA, Ms. Marie Payumo and Ms. Eileen Medina.

Seven participants were only able to join the Workshop. The BEM and six Team ESTERO Members were present; one Team ESTERO Member was not able to come.

III. PRELIMINARIES

The Workshop officially started at 9:45 a.m. It was started by a prayer led by Team ESTERO Member Ofemia Villanueva. This was followed by Mr. Jesus Averilla welcoming the participants and then by the introduction of participants.

IV. PRESENTATION OF GATHERED DATA FOR BARANGAY PROFILE BY THE BARANGAY ENVIRONMENTAL MANAGER

Dr. Felixberto Roquia, Jr. started following up on the data to be provided by the BEM and Team ESTERO Members for their Barangay Profile. Only some of the data needed were gathered already but some are still lacking. They were not able work much on the data because the ones they have already provided were submitted to the Experimental Research Study Team after the previous Workshop last June 25, 2004. They requested to have the data back so they can continue completing it. The data were handed back to them instantly.

Barangay Coordinator for Barangay 46, Pasay City, Engr. Joselito Manooos told them to start completing all the data needed and he will take charge of its compilation for submission on July 12, 2004.

The BEM and Team ESTERO informed the Experimental Research Study Team regarding the census they conducted, wherein they used a self-designed questionnaire to survey on their area's history and its actual number of residents, which are to be included in the Barangay Profile.

V. FOCAL POINTS AND ITS STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS (SWOT)

Following shortly was the discussion on the four Focal Points, Solid Waste Management, Beautification and Greening, Pollution Control, and Information, Education and Communication. For each of the Focal Point, the BEM-ESTERO Team must distinguish the SWOT. They were provided with the SWOT Tables for each Focal Point for them to write their answers on. After Dr. Felixberto Roquia, Jr. explained the activity, a thirty-five minute break was announced.

The BEM and Team ESTERO started working at 11:00 a.m. They divided their group, two persons for each Focal Point. Since they were only seven, Ofemia Villanueva volunteered to work on the Pollution Control alone; however, she would appreciate a little assistance from the group.

VI. PRESENTATION OF SWOT

For the presentation, the BEM-ESTERO started reporting on the Beautification and Greening by Team ESTERO Member Alma Managuit. The Opportunities she mentioned were planting of ornamental plants, income generated from the garbage, and good health of the Barangay residents. The Threat identified was the lack of concern of the residents about their surroundings. The Strengths were the Barangay Contest for

the most beautiful and cleanest area in the place, and the Barangay Ordinance *Tapat Ko, Linis Ko*. The Weaknesses were the lack of awareness, lack of concern, and the budget constraint. The solutions identified to these problems were to educate the people on how to nurture the environment, strict and correct implementation of Clean and Green Ordinance, the establishment BEM and Team ESTERO, and planting trees.

In Solid Waste Management by Team ESTERO Mr. Antonio Tangon, he cited the Opportunity of generating income from the garbage they sell. The Threats were flooding and laziness of the residents to segregate their waste. Having a City Ordinance on Solid Waste Management made them consider it as their Strength, while having confrontational residents was their considered Weakness. The Solutions formulated were increasing the fines on violators of the laws on improper garbage disposal, a dialogue between the residents and the persons coordinating the Project, and lectures from experts of Solid Waste Management and the MRF (Material Recovery Facility).

Team ESTERO Member Ofemia Villanueva reported about the Pollution Control. The Opportunity was having a healthy environment. The Threat was illnesses, mostly lung cancer. The Strength was the Ordinances on Clean Air and Noise Pollution, while the Weakness was the stubborn residents, and their lack of concern to their surroundings. The Solutions suggested were strict implementation of the laws and construction of septic tank so that the human waste will not go directly to the estero.

BEM Benjamin Evangelista reported the Information, Education and Communication. The Opportunities were having well-informed residents and a regular communication between the Barangay Officials and the residents. The Threat was the minimal penalty on violators of the law. Their Information Committee was considered as the Strength, while their Weakness was the negative attitude of people towards the Project. The Solutions were the BEM Team ESTERO should do their part and help improve their place and at the same time, to organize a group to work on the materials for the information dissemination in their place, and to encourage the SK (*Sangguniang Kabataan*) to get involved with the Project.

The BEM-ESTERO also sought assistance from the Experimental Research Study Team in educating the residents on Solid Waste Management, may be through a lecture.

VII. DISCUSSION OF THE PROBLEM TREE AND THE SOLUTION TREE

Dr. Felixberto Roquia, Jr. started discussing the Problem Tree by asking if the BEM-ESTERO knows the root cause of the problem. The participants answered that people really causes the problem. These people are the informal settlers who cause the uncontrolled organization which made the area congested, and at the same time volume of waste increased. These resulted to sickness and pollution in the area.

Came after was the Solution Tree. The Priority Solution to the problem is relocation by implementing the Law 7279 Social Development and Resettlement Plan. If it will be executed there will be organized organization. The area will be decongested and there will be Solid Waste Management, clean air and sicknesses will be reduced.

There were some questions raised during the discussion of The Problem Tree and The Solution Tree; Engr. Joselito Manos asked the BEM-ESTERO of their idea if the residents would resist for relocation. Team ESTERO Member Mr. Antonio Tangon answered that the residents in their Barangay are willing to be relocated, but are requesting for disturbance fee.

Team ESTERO Member Alma Managuit asked about the amount to be paid for the place where they will be relocated. Engr. Joselito Manos answered that the amount due will be justified by the net income per household.

VIII. PROJECT RANKING

The Barangay 46 BEM and Team ESTERO were asked to rank the four Focal Points according to their choice which Project to prioritize for the fulfillment of the Project's objectives.

Their ranking was similar with Barangay 195, City of Manila, they agreed to rank Information, Education and Communication first. Next was the Solid Waste Management, followed by the Beautification and Greening, then lastly by the Pollution Control.

IX. PRIORITY PROJECT PROPOSALS

Barangay 46 became ahead of the two Barangays because this subject was never discussed with Barangays Palanan and 195. After going through with the concerns of this particular Workshop, Dr. Flixberto Roquia, Jr. and the Barangay Coordinators notified the participants of the probable schedule of the coming Workshop; wherein, Project Proposals for the Focal Points will be drafted. For each Focal Point, Objectives, Procedures, Materials, and Budget of the proposal shall be identified.

The Experimental Research Study Team and the BEM-ESTERO were able to formulate the Objectives for Information, Education, and Communication:

1. To impart with the residents of Barangay 46 the accurate knowledge regarding Environmental Programs, and
2. To establish an Organization who will take responsible of disseminating information on environment.

The next three parts, Procedures, Materials, and Budget, are to be completed by BEM-ESTERO alone.

X. CLOSING

The Workshop ended at 4:00 p.m. The Organizers and the Barangay Participants thanked one another and hoped for a continuous cooperation and support.

ATTACHMENTS

EXPERIMENTAL RESEARCH FOR DRAINAGE SYSTEM IMPROVEMENT IN THE CORE
AREA OF METRO MANILA

**STAKEHOLDER and S.W.O.T. ANALYSES
WORKSHOP for BEM and TEAM ESTERO**

*Date: July 6, 2004 (Tuesday)/8:00 a.m.-5:00 p.m.
Venue: Barangay Hall, Barangay 46, Pasay City*

NO.	NAME	POSITION	CONTACT NUMBERS	SIGNATURE
1	Antonio M. Tangon	T. ESTERO	524-17-25	
2	Jesus S. Mora	T. ESTERO	524-17-25	
3	Ofemia M. Villanueva	T. ESTERO	0919-6155592	
4	Benjamin S. Evangelista	BEM	524-17-25	
5	Alma M. Managuit	T. ESTERO	523-38-93	
6	Natividad C. Tan	T. ESTERO		
7	Lucio F. de Guzman Jr.	T. ESTERO	0916-5055970	
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BEM – ESTERO VISION

A Barangay that is environmentally conscious and socially sensitive enjoying a good quality of life within the bounds of sustainable development.

Barangay 46, Pasay City

FOCAL POINTS

- 1. Solid Waste Management**
- 2. Beautification and Greening**
- 3. Pollution Control**
- 4. Information, Education, and Communication**

SOLID WASTE MANAGEMENT

<p>Environment (Kapaligiran)</p> <hr/> <p>Internal (Loob)</p>	<p>Opportunities (Pagkakataon)</p> <ul style="list-style-type: none"> ➤ To earn money ➤ To educate our constituents regarding waste segregation (R.A. 9003) ➤ To keep the Barangay clean and orderly 	<p>Threats (Banta)</p> <ul style="list-style-type: none"> ➤ Flooding ➤ Health and sanitation ➤ Within 10 to 20 years, there will be no more dumping site in Metro Manila
<p>Strengths (Lakas)</p> <ul style="list-style-type: none"> ➤ Organizations such as BEM-ESTERO ➤ City or Barangay Ordinances Implementation such as R.A. 9003 	<ul style="list-style-type: none"> ❖ Creation of Barangay Resolutions ❖ Harmonious living once the BEM-ESTERO Project is fulfilled ❖ To have a building for MRF ❖ Conducting a dialogue or seminar to our constituents regarding biodegradable and non-biodegradable materials ❖ Establish a composting area ❖ Frequent cleaning of drainage systems to prevent flood ❖ Increase fines for violators of garbage disposal ordinances 	
<p>Weaknesses (Kahinaan)</p> <ul style="list-style-type: none"> ➤ Lack of Information Campaign ➤ Lazy and complaining residents toward beneficial Barangay Projects 		

BEAUTIFICATION AND GREENING

<p>Environment (Kapaligiran)</p> <p>Internal (Loob)</p>	<p>Opportunities (Pagkakataon)</p> <ul style="list-style-type: none"> ➤ Beautiful surroundings and pleasant scenery ➤ Cleanliness and harmonious relationship among community members 	<p>Threats (Banta)</p> <ul style="list-style-type: none"> ➤ Stubborn residents and unconcerned of the environment ➤ Uncooperative residents
<p>Strengths (Lakas)</p> <ul style="list-style-type: none"> ➤ <i>Tapat Mo, Linis Ko</i> Campaign ➤ City Ordinances on Beautification and Greening Program ➤ Host a contest regarding the Program 	<ul style="list-style-type: none"> ❖ To have a Mother Class for the Community ❖ Strict implementation of Ordinances ❖ Strong and proper implementation of Programs ❖ The BEM-ESTERO will lead to an orderly and beautiful environment ❖ The BEM-ESTERO and Barangay Associations will prepare programs regarding proper Solid Waste Management, beautification and nurturing of plants, and construction of Public Toilet an Bath 	
<p>Weaknesses (Kahinaan)</p> <ul style="list-style-type: none"> ➤ Unaware of the surroundings ➤ No time to practice the Program ➤ Lack of knowledge 		

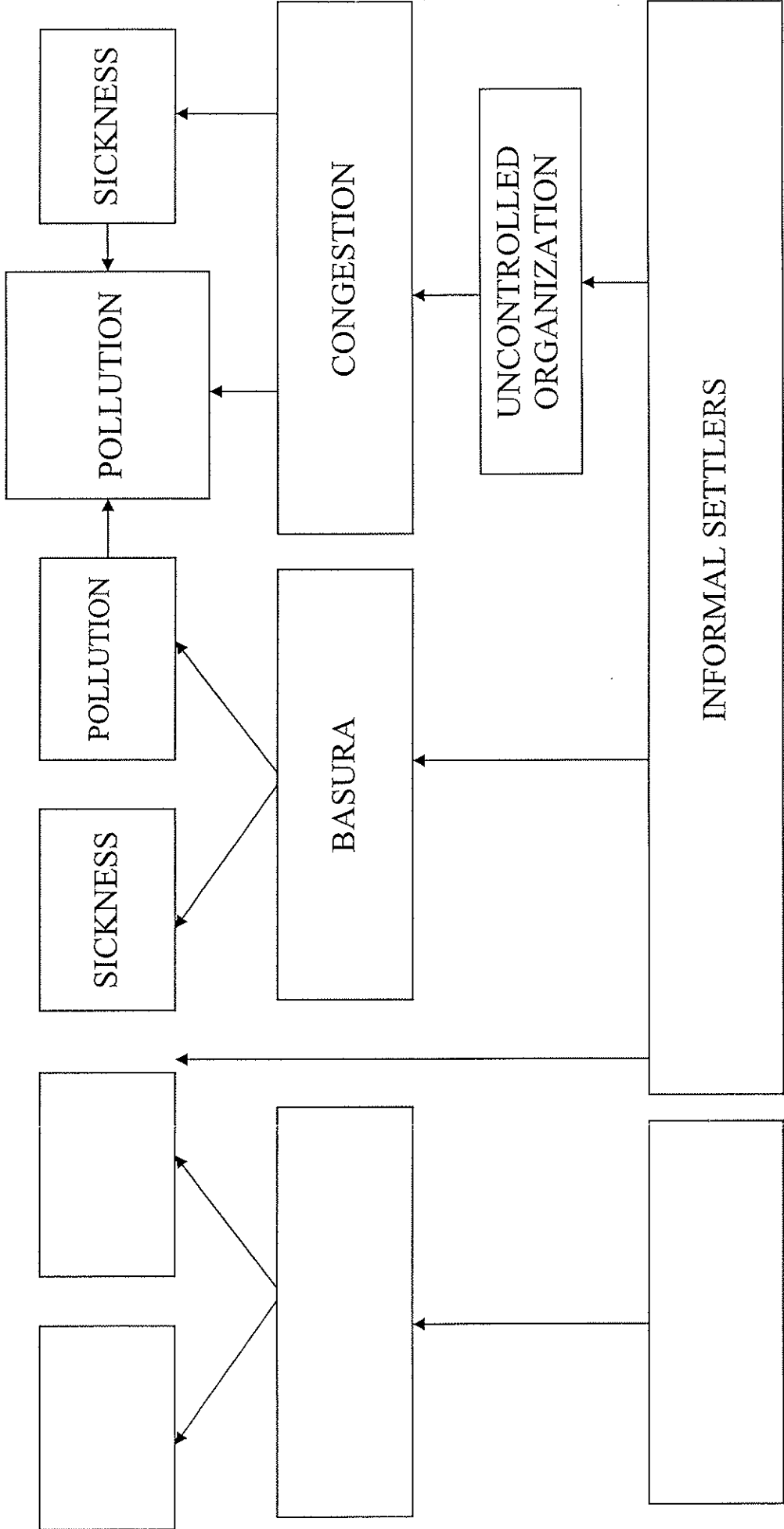
POLLUTION CONTROL

<p>Environment (Kapaligiran)</p> <p>Internal (Loob)</p>	<p>Opportunities (Pagkakataon)</p> <ul style="list-style-type: none"> ➤ If the smokers will refrain from smoking, there will be good health ➤ If the surroundings is quiet, residents can sleep and wake up well ➤ Clean and fresh air to breathe ➤ Healthy lungs and body 	<p>Threats (Banta)</p> <ul style="list-style-type: none"> ➤ Diseases in lungs, asthma, and cancer ➤ Rapid ageing due to smoking ➤ Residents are short-tempered when they lack sleep due to noise
<p>Strengths (Lakas)</p> <ul style="list-style-type: none"> ➤ Implementation of Ordinances to establish discipline in the Barangay ➤ Prohibition of burning of garbage especially near houses ➤ Every City should have its own dump sites ➤ Proper waste disposal ➤ City Ordinance on noise and pollution 	<ul style="list-style-type: none"> ❖ For the success of the Program, the implementers must serve as good examples so that the citizens will imitate. The laws must be implemented correctly. ❖ Observe the Ordinances by disseminating it (e.g. sound system) ❖ Prohibition of burning of tires and metals ❖ Prohibition of making the canals as passages of toilets, it should directly go to the <i>poso negro</i> the Barangay is planning to construct ❖ The BEM-ESTERO should start the implementation of the Program in the Barangay ❖ Usage of metal fist appropriately to discipline the people 	<p>Weaknesses (Kahinaan)</p> <ul style="list-style-type: none"> ➤ Inconsiderate citizens ➤ Stubborn citizens ➤ <i>Ninga-kagon</i> attitude in implementation of laws ➤ Unconcerned of the goings on in the area ➤ The citizens are used to noisy neighborhood

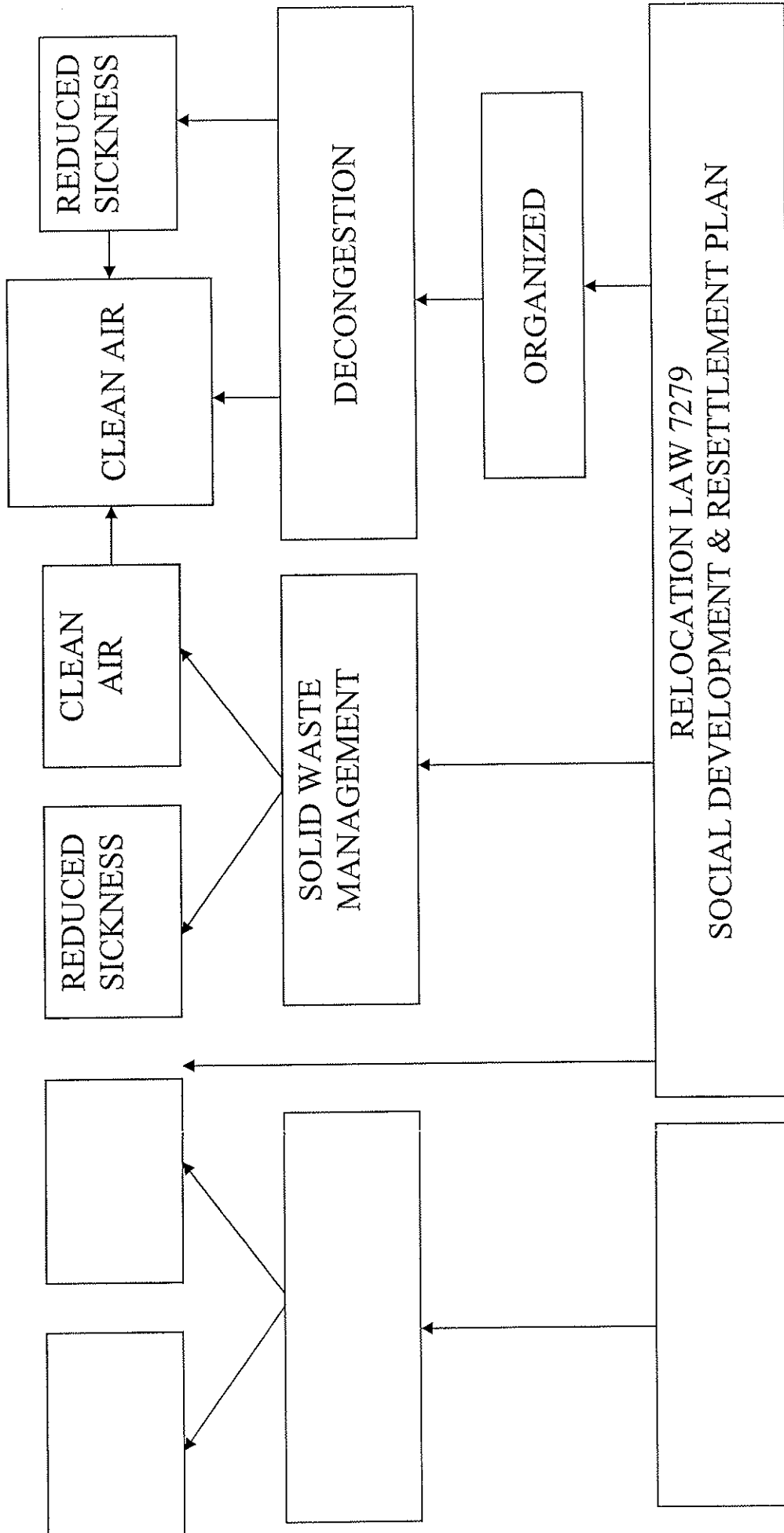
INFORMATION, EDUCATION, AND COMMUNICATION

<p>Environment (Kapaligiran)</p> <p>Internal (Loob)</p>	<p>Opportunities (Pagkakataon)</p> <ul style="list-style-type: none"> ➤ Good communication, effective information campaign and education of R.A. 9003 and City Ordinances 	<p>Threats (Banta)</p> <ul style="list-style-type: none"> ➤ No fear of the laws because of minimal penalties
<p>Strengths (Lakas)</p> <ul style="list-style-type: none"> ➤ Barangay Ordinances, Barangay Tanods, Barangay Officials and PNP 	<ul style="list-style-type: none"> ❖ Children will be kept from danger ❖ Disturbances will be prevented ❖ Several areas are accessible for postage of information (e.g. stores) ❖ The BEM-ESTERO should be taught to understand what the implemented Ordinances are about ❖ The <i>Sangguniang Kabataan (SK)</i> may help out in the dissemination 	
<p>Weaknesses (Kahinaan)</p> <ul style="list-style-type: none"> ➤ Irritably witty, lazy, stubborn citizens who resist to obey the laws ➤ No order in the society and a polluted environment ➤ False information are being disseminated 		

THE PROBLEM TREE



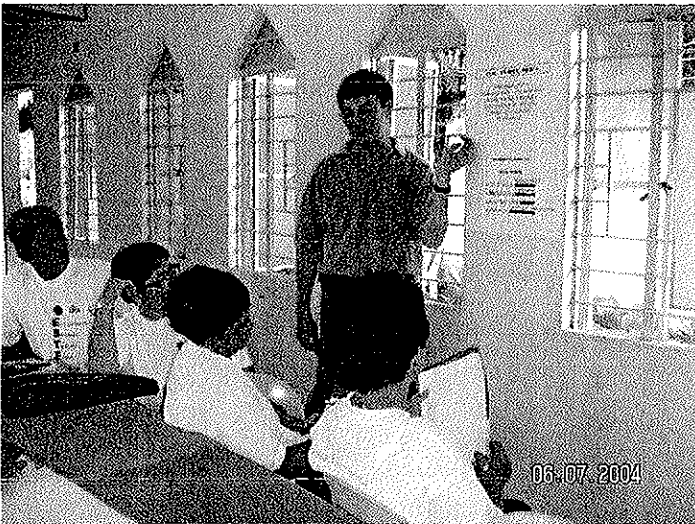
THE SOLUTION TREE



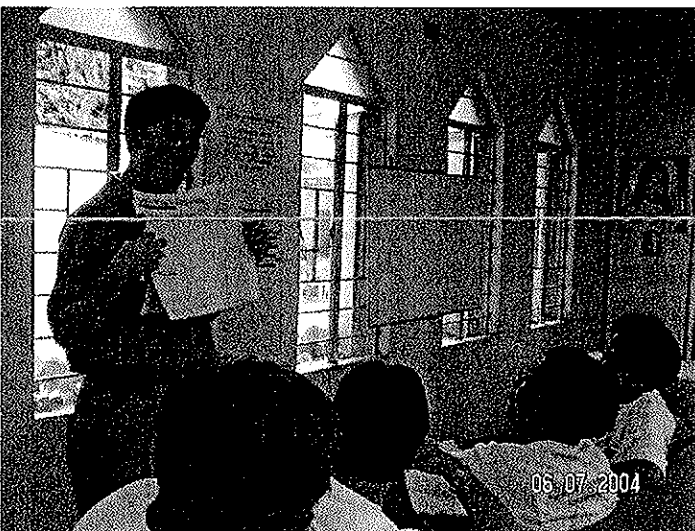
Attachment-J



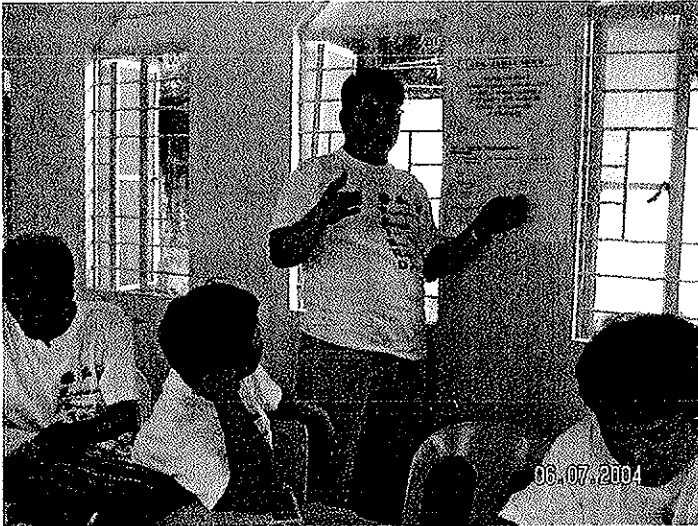
**The Organizers and
Participants**



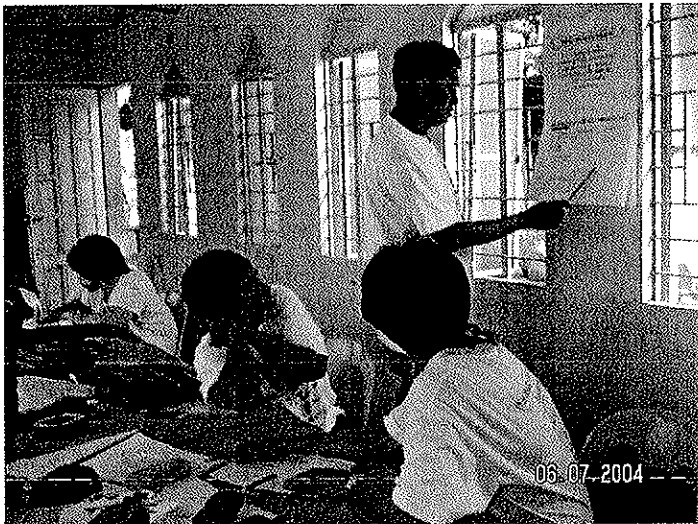
**Dr. Felixberto Roquia, Jr.
explaining the BEM-ESTERO
Vision and Focal Points**



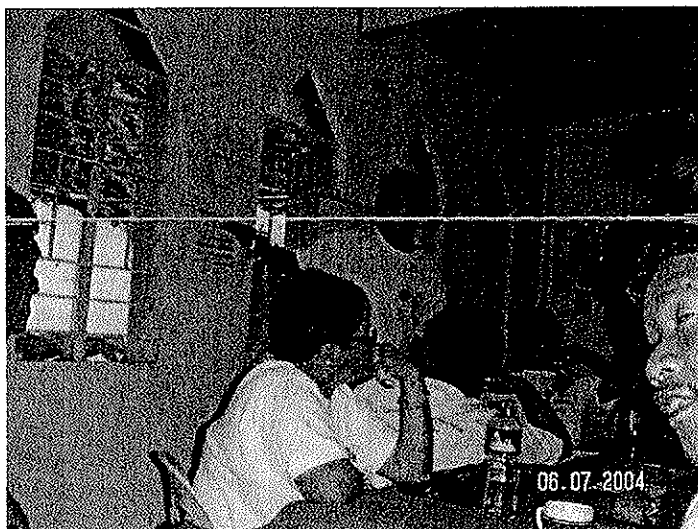
**Dr. Felixberto Roquia, Jr.
explaining the SWOT Table to
be filled up by the Participants**



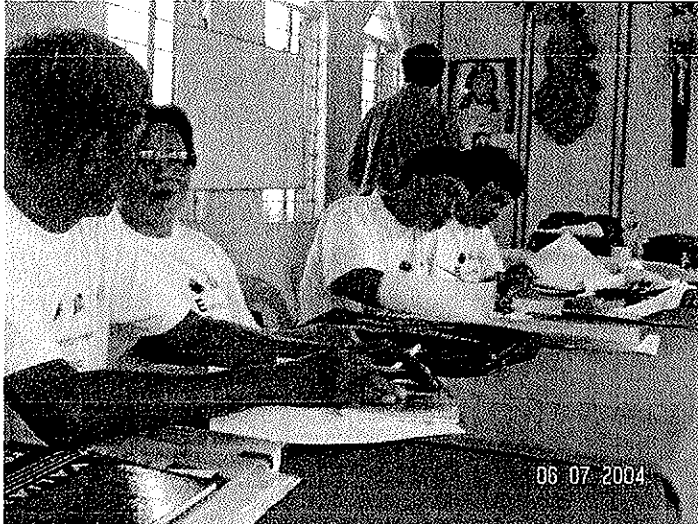
**Mr. Antonio Tangon
reporting the SWOT of the
Solid Waste Management**



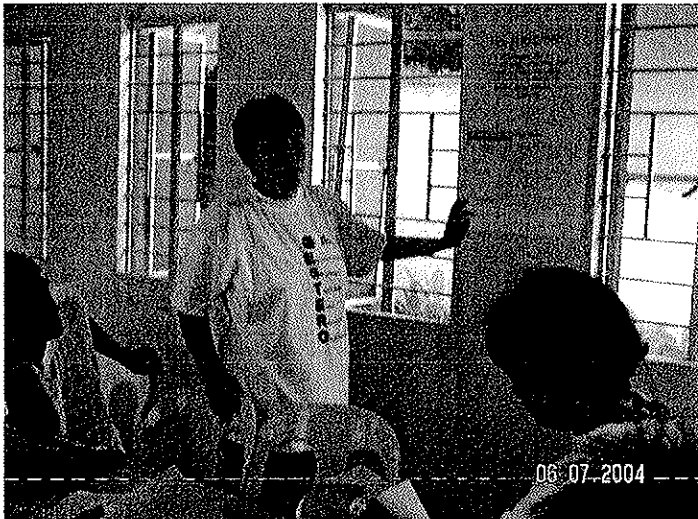
**BEM Benjamin Evangelista
reporting the SWOT of the
Information, Education, and
Communication**



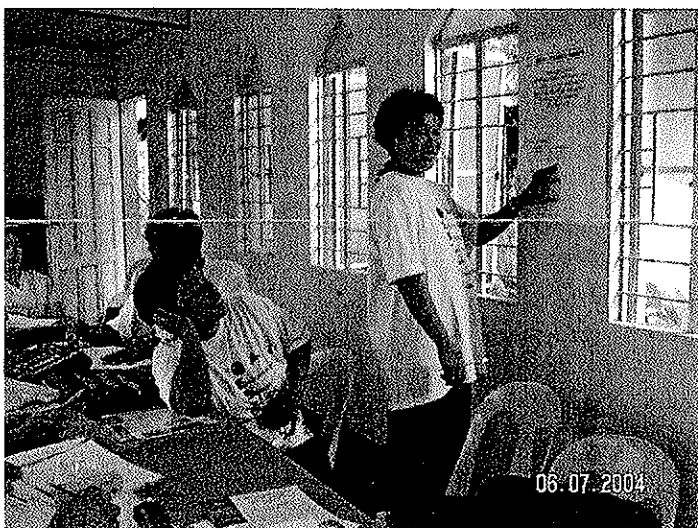
**Barangay Coordinator
Engr. Joselito Manoos
facilitating the Project
Ranking**



The Participants are working on the task



Ms. Alma Managuit reporting the SWOT of the Beautification and Greening



Ms. Ofemia Villanueva reporting the SWOT of the Pollution Control

Report for Proceedings - 7

Waste Segregation and Ecological Solid Waste Management Act (R.A. 9003) Lecture

Date: July 24, 2004

Place: Jollibee, Abad Santos, corner Hermosa Branch,
City of Manila

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**Experimental Research for the Study on Drainage Improvement
In the Core Area of Metropolitan Manila**

**WASTE SEGREGATION AND ECOLOGICAL
SOLID WASTE MANAGEMENT ACT (R.A. 9003) LECTURE**

July 24, 2004

1:00 p.m. – 3:00 p.m.

Jollibee, Abad Santos corner Hermosa Branch, City of Manila

PROCEEDINGS

I. INTRODUCTION

Three Barangay Units, Barangays 46, Pasay City, Palanan, Makati City, and 195 City of Manila, were selected for the Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila as typical and/or representative barangays in the Core Area of Metropolitan Manila (DICAMM) for the development of a model for Barangay Institutional System. The selection was based on certain conditions such as the character of the people, and types of problems in the areas.

From the previous Workshop where the BEM-ESTERO (Barangay Environmental Manager-Environmental Strategic Task for Estero Renewal Organizing) Team identified the strengths, weaknesses, opportunities, and threats of their area under the following focal points, Solid Waste Management, Beautification and Greening, Pollution Control, and Information, Education, and Communication. They thought of requesting a lecture regarding Waste Segregation and R.A. 9003. In this lecture, the BEM-ESTERO Team were educated of the basic facts on solid waste like its process, its classifications, the correct management of garbage, the possible effects of improper disposal, and several other fruitful facts.

II. PROFILE OF THE PARTICIPANTS

Among the Experimental Research Study Team, Mr. Jesus Averilla (Head/Env'l/Environment/Solid Waste Management-Counterpart Team), and Ms. Bridgette Bautista (Coordinator) were able to supervise the Lecture. From the Support Staff Ms. Marie Payumo, and Ms. Eileen Medina were able to assist.

The lecturer was the Deputy Project Manager, CBSWM (Community-Based Solid Waste Management) MMDA (Metro Manila Development Authority), Ms. Elsie Encarnacion.

The participants from Barangay 195, City of Manila were the BEM, five Team ESTERO Members, and their Barangay Chairman. Two Team ESTERO Members were not able to attend the lecture.

III. PRELIMINARIES

Ms. Elsie Encarnacion formally started the lecture at 1:25 p.m. by welcoming the participants. She introduced herself to the participants and went straight in reviewing the past activities done for the project and at the same time the reason why the lecture is being conducted. There were visual aides prepared to support the lecture.

The focus of the lecture was to teach the proper waste segregation and the Ecological Solid Waste Management (R.A. 9003) to the Barangay. Ms. Elsie Encarnacion mentioned that the waste and flood has a great connection with flood. The wastes can clog the drainages which results to flooding and lead to the citizens' suffering from illnesses and other discomforts. Aside from high expenses on medicines and hospitalization, worse, it could result to increase of death rate.

IV. SOLID WASTE MANAGEMENT PROCESS

Ms. Elsie Encarnacion first, explained the process of waste which is true in other countries of the world. Starting with Generation, she stated that every individual creates waste. She said that as long as a human is alive, wastes are created even until after its death. But Barangay Chairman Nestor Ereño pointed out that babies do not create waste at all. Ms. Elsie Encarnacion corrected him that babies are actually the great generators of waste, from the milk they consume to their disposable diapers.

After the Waste Generation, where are these stored? Different types of Storage were discussed next. Among which were the usual types of containers most households use like *sando* bags, bins, and boxes.

Wastes can't stay in our houses; therefore, Collection is being done by the Local Government Units and some Private Collectors. Usually, especially in our country's setting, door-to-door Collection is being practiced, wherein the huge garbage collection vehicles pass through residential streets and collect the garbage waiting in front of each house taken out by the maids or helpers. In areas with narrow or without passages for garbage truck, some assign Barangay Garbage Collectors to gather the garbage from households in the impassable locations.

When the Collection is done, Transport comes as the next step, wherein the collected wastes are being brought to its final destination, the dumpsite. The dumping of the waste from its sources to the dumpsites will serve as the last process, the Disposal. Ms. Elsie Encarnacion quoted the disposal area as the "Memorial Park" of waste because it is the last place where the waste will be situated.

V. ECOLOGICAL SOLID WASTE MANAGEMENT ACT AND OTHER RELATED LAWS

Ms. Encarnacion introduced the R.A. 9003 by taking a glimpse on the previous laws connected to R.A. 9003, and elaborating the development of the MMDA. She

started with the Local Government Code (LGC), stating that the Barangay is responsible for the waste management in their respective areas. Then, there was MMDA Law in the year 1995, which gives the MMDA the responsibility to create a Sanitary Landfill, wherein the Local Government Units (LGU) are in charged of the system in collecting the garbage. She also added that, the MMDA was formerly known as Metro Manila Commission (MMC) under Madam Imelda Marcos, then it became MMA (Metro Manila Authority) under President Corazon Aquino, and it finally became MMDA under President Fidel V. Ramos. Clean Air Act came in 1999, and followed by the Mother Law for Solid Waste Management, the Republic Act 9003 in the year 2000.

R.A. 9003 introduced Segregation at Source. Separate Collection was also presented wherein the recyclable materials are to be separated from the biodegradable wastes, these may be brought to the Material Recovery Facility (MRF), if the area possesses this facility. As a result there would be Cleanliness that should be seen in the Streets, Sidewalks and Waterways, which may attain the goal of 25% Waste Reduction.

Ms. Elsie Encarnacion clarified that the laws being implemented by the MMDA were not only approved by MMDA Chairman Bayani Fernando, but it was also approved or signed by the different City Mayors of Metropolitan Manila.

VI. BARANGAY 195 WASTE GENERATION

Ms. Elsie Encarnacion mentioned about a study in Metro Manila, where it was derived that approximately 11,000,000 is the population of Metro Manila during Sleeping Time and about 14,000,000 during Day Time. The waste created in Metro Manila is 0.609 kg/cap/day which equals to 6,730 tons/day and 33,000 m³. Metro Manila needs 2,000 trips of a Ten Wheeler truck to collect all the waste. Below is the actual percentages given by Ms. Encarnacion based on MMDA's study.

Table 1. Percentage of Waste Composition in Metro Manila

<i>Types of Waste</i>	<i>Percentage</i>	
<i>Kitchen Waste</i>	<i>45%</i>	Biodegradable
<i>Yard Waste</i>	<i>7%</i>	
<i>Plastic</i>	<i>16%</i>	Non-Biodegradable
<i>Paper</i>	<i>17%</i>	
<i>Metal</i>	<i>5%</i>	
<i>Glass</i>	<i>3%</i>	
<i>Residual / Others</i>	<i>7%</i>	

From the Table above, Ms. Elsie Encarnacion also showed the actual computations of Barangay 195's waste generation with a few adaptations from MMDA's study on the amount of waste generated per person in an area. Another Table shows the actual amount of Barangay 195's waste generation. The population of the Barangay 195 (1,800) was multiplied to 0.395 kg/cap/day (for a low income area) to identify total weight of waste produced per day, resulting to 711 kg/day. The result will then be multiplied by the percentage of each type of waste to get how much waste is generated in each type.

Table 2. Waste Composition in Barangay 195, City of Manila

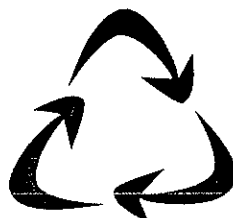
<i>Types of Waste</i>	<i>Percentage</i>	<i>Kg/day of waste in the Barangay</i>	
<i>Kitchen Waste</i>	<i>45%</i>	<i>319.95 kg/day</i>	Biodegradable
<i>Yard Waste</i>	<i>7%</i>	<i>49.77 kg/day</i>	
<i>Plastic</i>	<i>16%</i>	<i>113.76 kg/day</i>	Non-Biodegradable
<i>Paper</i>	<i>17%</i>	<i>120.87 kg/day</i>	
<i>Metal</i>	<i>5%</i>	<i>35.55 kg/day</i>	
<i>Glass</i>	<i>3%</i>	<i>21.33 kg/day</i>	
<i>Residual / Others</i>	<i>7%</i>	<i>49.77 kg/day</i>	

VII. EXERCISES AND TRIVIA

Ms. Elsie Encarnacion gave a petty exercise to the participants, wherein she prepared some samples of wastes for them to identify. Among the items were bottle, plastic bags, cartons, papers, and leftovers. She raised each item then the participants will name its classification. She stated that those materials will only be called garbage or trash if they were mixed altogether in one container, but if they were segregated, each has its own distinction wherein some may still be recycled, while the rest are considered garbage.

She also informed the participants of the International Recycling Logo also known as the "chasing arrows." This logo is supposed to be indicated on each recyclable item, especially plastics. The first arrow above represents the waste generated by the household. Moving clockwise, the next arrow represents the reprocessing of these recyclable materials. The last arrow represents the return of the reprocessed materials to the market as new containers or materials. Please see the figure below.

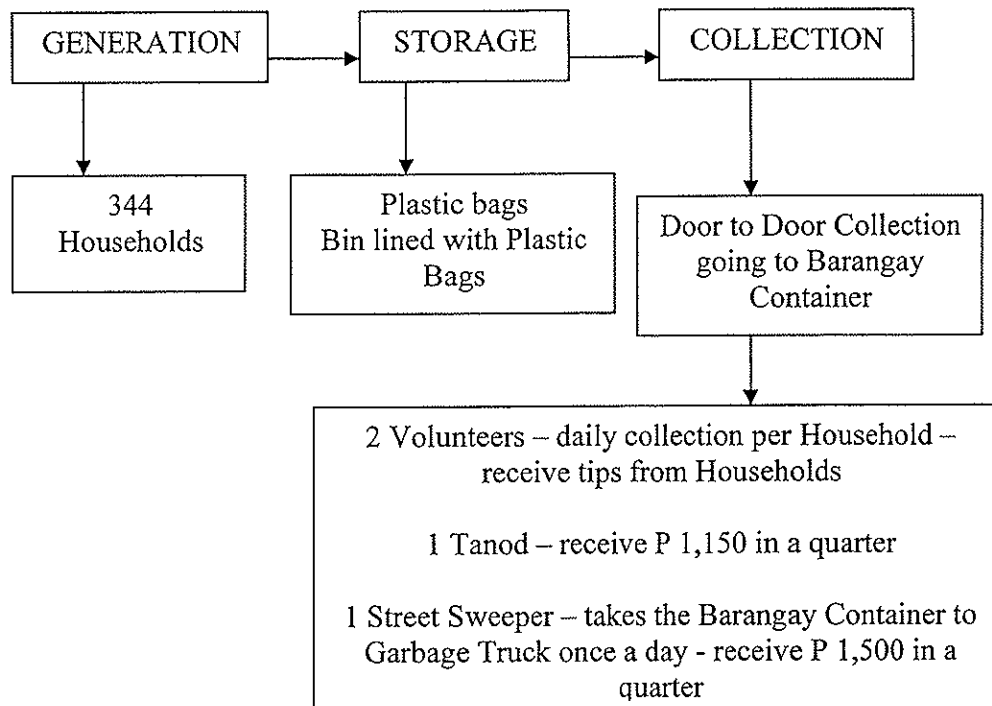
Figure 1. International Recycling Logo



VIII. BARANGAY 195 SOLID WASTE MANAGEMENT SYSTEM

Ms. Elsie Encarnacion asked the participants about the system on the Solid Waste Management of their Barangay. Below is the diagram of the flow of the Solid Waste Management System in Barangay 195, City of Manila.

Figure 2. Solid Waste Management System in Barangay 195, City of Manila



The Barangay is presently implementing the system shown above. Barangay Chairman Nestor Ereño added that the residents in their Barangay are bringing their own recyclable materials in the nearest junkshop and for that reason their waste has already been lessen.

Ms. Elsie Encarnacion advised the participants especially to inform the residents that fish entrails should be left in the market, aside from their waste will be lessen, it will also prevent terrible smell and attraction for insects.

There was a problem raised by the Barangay Chairman Nestor Ereño about the loitering dogs, but he and BEM Francisco Cirera decided that they will send out letters to the dog-owners to keep their pets from gallivanting around.

There was a good interaction between the participants and the lecturer which made all participants aware of the condition of the environment and how it is best to segregate all the recyclables. After the lecture, they all agreed to make some improvements and to participate in this program.

IX. CLOSING PROGRAM

The lecture ended at 3:20 p.m. Ms. Elsie Encarnacion thanked the participants for attending the lecture and encouraged them to continue supporting the project. She also told the participants that the next time she will visit their Barangay, there should be improvements or application of what she have taught or advised them.

ATTACHMENTS

EXPERIMENTAL RESEARCH FOR DRAINAGE SYSTEM IMPROVEMENT IN THE
CORE AREA OF METRO MANILA

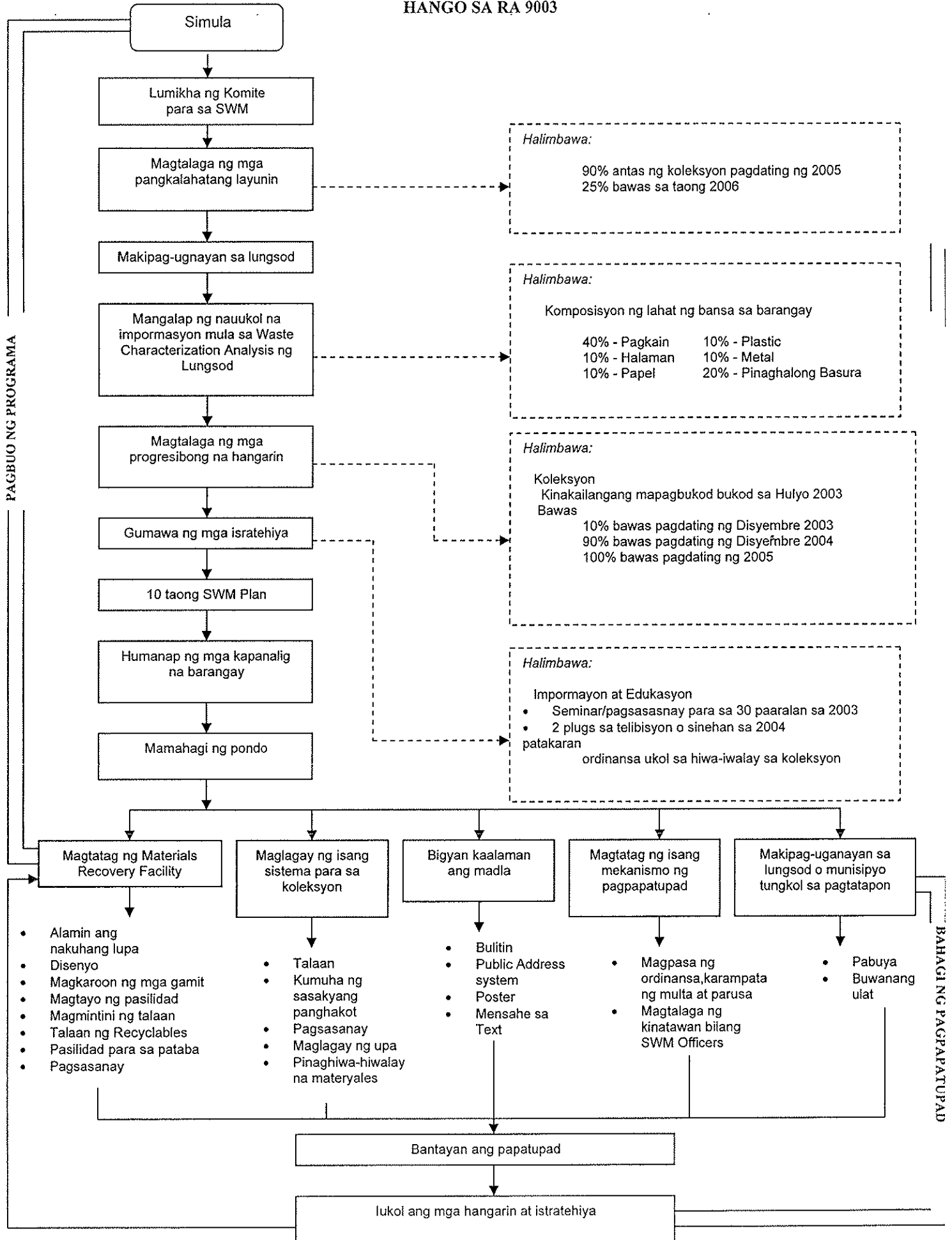
**WASTE SEGREGATION AND ECOLOGICAL SOLID WASTE MANAGEMENT ACT
(R.A. 9003) LECTURE**

Date: July 24, 2004 (Saturday)/1:00 pm-3:00pm

Venue: Jollibee, Abad Santos corner Hermosa Branch, City of Manila

NO.	NAME	POSITION	CONTACT NUMBERS	SIGNATURE
1	Rosalinda Antonio	Member	360-24-70	
2	Jean Roxas	Member	0910-6149031	
3	Flordeliza Isip	Member	0919-6733536	
4	Severino Reyes	Member		
5	Francisco Cirera	BEM	364-97-15	
6	Nestor Ereño	P/B	0919-3552536	
7	Jesus Averilla	DPWH	304-3841-42	
8	Orly Cleofas	JICA	3043841-42	
9	Roel Tolentino	JICA		
10	Analiza Lao	Member	0916-4393695	
11	Marie Payumo	JICA	870-82-32	
12	Eileen Medina	JICA		
13	Bridgette Bautista	JICA	304-38-41	
14				
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SOLID WASTE MANAGEMENT SA HANAY NG BARANGGAY
HANGO SA RA 9003



KARAGDAGANG DETALYE SA PAMAMARAAN NG PAMAMAHALA NG BASURA O SOLID WASTE MANAGEMENT (SWM) PARA SA MGA BARANGAY (RA 9003)

Miyembro ng Komite ng Barangay Para sa Tagapangulo ng SWM

- a) Isang kagawad
- b) Tagapangulo ng sanguniang kabataan
- k) Pangulo ng asosasyon ng may-ari ng bahay
- d) Puniong-guro ng paaralang pampribado o pulitiko o ang kanilang kinatawan
- e) 1 pangulo ng Parent-Teacher Association o kinatawan
- f) 1 kinatawan ng organisasyon ng mga relihiyon o simbahan
- g) 1 kinatawan ng kumunidad ng negosyo
- h) 1 kinatawan ng pangkalikasang NGO
- i) Pangulo ng asosasyon ng mga nagtitinda sa palengke
- j) 1 kinatawan ng may-ari ng junkshop

Gawain ng Komite ng SWM

- a) Bumuo ng programang SWM na naayon sa plano ng munisipyo sa lungsod
- b) Pagbubukod at pangongolekta ng mga nabubulok at nareresiklong na basura
- c) Magtayo ng Materials Recovery Facility
- d) Maglaan ng pondo sa barangay, humanap ng mapagkukunan ng pondo
- e) Bumuo ng mangungunang grupo
- f) Magpasa ng buwanang ulat sa lungsod o sa munisipyo

Pagresesiklo

- Ilista ang mga uri ng mga materyales na muling magagamit na nasa hanay ng mga hinahangad na bawasan
- Gumawa ng programa at plano ng pagpapatupad na ipapakita ng mga hakbang kung saan ang mga layunin ay maisasakatuparan

Pagbabawas sa pinanggalingan ng Basura

- Pumili ng stratehiya sa pagbabawas ng basura mula sa pinanggalingan at ang hakbang sa pagpapatupad ng mga stratehiya
- Pumili ng nararapat na teknolohiya sa pagbabawas ng basura
- Ilista ang mga uri ng basura na dapat bawasan

Composting

- Ilista ang mga uri ang mga materyales na gagawing pataba sa ilalim ng plano ng lungsod/ munisipyo ukol sa SWM
- Gumawa ng programa at plano ng pagpapatupad na nagpapakita ng mga hakbang upang maisakatuparan ang mga layunin

Koleksiyon at paglilipat ng Basura

- a) Tiyakin ng barangay na isandaang porsiyento ang koleksiyon ng basura, sa iba't ibang uri, sa mga nasasakupang kabahaya, komersyal, industriya at agrikulturang lugar
- b) Pumili ng natatanging stratehiya at Gawain sa ilalim ng mga barangay na binibigyang pansin ang mga sumusunod na malasakit:
 - i) Probisyon ng mga maayos na disenyo ng mga lalagyan sa mga piling lugar ng koleksiyon para sa pansamantalang pag-iimbak ng panapon habang naghihintay sa paglilipat sa huling luag ng taunan.
 - ii) Paghiwa-hiwalay ng iba't-ibang klase ng panapon para sa muling paggamit, pwedeng iresikolo at nabubulok.
 - iii) Pagbibiyahang paglilipat ng mga panapon mula sa pinanggalingan hanggang sa huling lugar ng tapunan.
 - iv) Paglalabas at pagpapatupad ng mga ordinansa para maayos na maitupad ang sistema ng koleksiyon sa mga barangay
 - v) Paghahanda ng mga sinanay na mabuti ng mga opisyal at manggaga para mamahala sa pagtatapon.
- k) Pinakamababang Batayan
 - i) Ang tauhan ay dapat nakasuot ng kagamitang pangproteksiyon at iba pang kasuotan.
 - ii) Pagsasanay na ibinigay ng DOH
 - iii) Iwasan ang pagkasira ng mga lalagyan ng panapon o ang pagkakatatag ng panapon sa loob ng pinagkokolektahan ng basura.
 - iv) Ang mga ginagamit sa pangkolekta at pagbibiyahang ng solid waste ay dapat ayusin, patakbuhan at panatilihin sa tamang kondisyon para mabawasan ang panganib sa buhay at kaligtasan.
 - v) Ang mga kagamitan ay dapat panatilihin sa tamang kondisyon at panatilihing malinis para maiwasan ang pagkalat at pag-akit sa mga nagdadala ng sakit at ang paglikha ng mga peste.
 - vi) Gumamit ng panghiwalay o kung hindi ang sasakyan ay dapat may compartment sa paghihiwalay ng basura habang inililipat. Ang compartment ay dapat may takip.
 - vii) Ang sasakyan ay dapat binou nang naayon sa sukat, kondisyon at kapasidad ng kalsada para matiyak ang kaligtasan at maayos na koleksiyon at pagbibiyahang ng solid waste.
 - viii) Dapat ang sasakyan ay may numero, pangalan at telepono ng ahensyang kumukuha ng solid waste.

Edukasyon at Pamublikong Impormasyon

- a) Ang mga malasakit ay magtuturo at magbibigay ng impormasyon sa mga mamamayan ng barangay tungkol sa programa ng pagbabawas ng pinaggalingan, paggamit muli, at pagbubulok ng panapon.
- b) Tiyakin na ang impormasyon sa mga serbisyo ng pangungolekta ng panapon, pamamalakad sa solid waste at kaugnay na kalusugan at pangkalikasan ay malawakang maipaalam sa publiko.

Kapangyarihan na Mangulekta ng Bayad sa Pamamahala ng Basura

Ang local na SWM Board/ local na SWM cluster board ay dapat magtakda ng kaukulang bayad sa serbisyo ng SWM na itinakda ng LGU. Sa pagtatakda ng mga bayad dapat isama ng local na board ang halaga na direktang may kaugnayan sa pagpapatupad ng plano ng SWM at ang lugal at koleksyon ng mga local na bayad. Ang kapangyarihang magtakda ng bayad ay maaring ipagkaloob sa mga pribadong sector at sa grupo ng civil society.

Ang butaw ay ibabayad para sa halaga ng pag-aayos, pag-aangkop at pagpapatupad ng plano ng SWM na naayon sa batas. Ang butaw ay gagamitin din sa pagbabayad sa aktwal na halaga na nakukuha sa pangongolekta ng mga bayad at sa pagsuporta sa proyekto.

Batayan ng butaw para sa SWM

- a) Uri ng basura, kasama ang natatangning na basura.
- b) Dami ng basura.
- c) Layo ng pinaglipatang istasyon sa pasilidad ng waste management.
- d) Kakayahan o uri ng kliyente o consumer ng LGU.
- e) Halaga ng pagbubuo.
- f) Halaga ng pamamahala
- g) Uri ng teknolohiya

Koleksiyon ng Butaw

Ang barangay ay maaaring magtakda ng butaw para sa koleksyon at paghiwa-hiwalay ng mga nabubulok at maaring gamiting muli na basura na galing sa tahanan, negosyo, at iba pang pinanggalingan ng galing sa basura, at sa paggamit sa barangay MRF's. Ang komputasyon ng mga butaw ay gagawin ng mga SWM boards. Ang paraan ng pangungolekta ng butaw ay naayon sa alituntunin ng Commission on Audit sa koleksiyon ng butaw.

Ang Koleksiyon ng Butaw

Ang koleksiyon sa mga multa sa ilalim ng penal provisions of the Act ay maaring gawin ng mga local na SWM Board/ local na SWM Cluster board o ng ibang grupo ng mga tao na bibigyan ng karapatan ditto. Ang koleksiyon ay dapat may resibo. Maaring panatilihin ng local na SWM Board/ local na SWM Cluster Board ang 10% ng nakulektang bayad sa multa at ibalik ang 60% sa SWM Fund na itinakda sa Act.

Pagpapatakbo ng Materials Recovery Facility (MRF)

- a) Responsibilidad ng barangay ang pangongolekta ng ipinaghiwalay na basurang nabubulok at nareresiklo. Ang MRF ay itinagubilin sa bawat barangay o grupo ng mga magkapatid na barangay.
- b) Magsagawa ng MRF sa mga pag-aari ng barangay o inuupahang lupain o kahit saang maayos na lugar namalalaman ng mga barangay sa pamamagitan ng kanyang sanggunian.
- c) Sa MRF tinatanggap ang mga nabubulok na basura na gagawing pataba at pagsamahin ang di-nabubulok na basura para sa huling paghiwa-hiwalay, paggamit muli, at pagreresiklo. Ipagpalagay na ang bawat klase ng pinagsamang basura ay kinuha sa pinagmulanan dinala sa MRF sa hiwalay na lalagyan.
- d) Isalin ang resulta ng mga basura. Ang mga isinalin na basura ay ililipat sa mahabang termino ng pag-iimbak o sa pasilidad ng tapunan ng basura o sanitary landfill.
- e) Ang MRF ay dapat ginawa para tumanggap, magbukod, magproseso, at maimbak ng gawaing pataba at materyales na nareresiklo ng maayos at sa makakalikasang paraan. Ang mga sumusunod na konsiderasyon ay dapat sundin:
 - i) Ang gusali at ang pagkakaayos ng lupa at mga kagamitan ay dapat idisenyo para matanggap nang maayos at ligtas ang proseso, pag-iimbak ng mga materyales.
 - ii) Ang gusali ay dapat ginagawa para maayos at matalinong panlaban na access at sa pagtanggap sa panloob na daloy.
 - iii) Kung kasama sa MRF ang pagbubulok, dapat ito ay naaayon sa probisyon ng Seksiyon 2.
 - iv) Ang mga sumusunod ay dapat itago at panatilihin para isumite sa DENR kapag hiningi
 1. Listahan ng araw-araw na timbang at dami ng basura na natanggap, naproseso at inaalisa sa lugar na eksakto sa loob ng 10% at tama para sa pangkalahatang pagpapalano ng mga layunin.
 2. Pang-araw araw na listahan o papeles ng mga sumusunod na impormasyon ay dapat panatilihin, sunog at iba pang espesyo na pangyayari, walang permisong bagahe, sakuna at pagkasi ng mga pag-aari.
- f) Pamantayan para sa Kalidad ng Pataba
 - i) Ang nabubulok na materyales ay dapat naaayon sa mga batayan para sa organikong pataba na itinakda ng DA, walang halong nakkalasong kemikal.
- g) Pinakamahabang Atuntunin para sa Pagpapatakbo ng Pasilidad sa Pagbubulok
 - (1) Ang pasilidad ay hindi dapat itayo sa lugar na malimit na binabaha maiwasan ang pagbaha sa pasilidad.
 - (2) Leachate at tuyong pagkontrol
 - a) ang pasilidad ay dapat idisenyo nang sag-anon ay marami nabubulok, windrows, mga tira at naprosesong materyales na hindi mapasama sa mga dinala ng bagyo.
 - b) Kung saan ang mga sobrang imbakan ng leachate ay maitatanda, pagtatapon ng leachate sa kahit saang bahagi ng tubig ay ipinagbabawal maliban kung naabot nito ang batayan ng DENR.
 - (3) Dapat isama ang probisyon sa pagkontrol sa peste, amoy, kalat, at alikabok.
 - (4) Ang pagtatago ng mga talaan ay dapat panatilihin sa lahat ng oras ng naaayon sa Seksiyon 2(b) kung IRR ng regulasyon
 - (5) Ang mga natitira ay dapat pamahalaan at itapon bilang basura.
 - (6) Ang temperature ng compost piles, curing piles at naprosesong kompos ay dapat panatilihin sa ligtas na lebel para maiwasan ang tuloy-tuloy na pagsunog ng basura.
 - (7) Ang kondisyong aerobic ay dapat panatilihin para maiwasan ang paglikha ng mapanganib na hangin katulad ng methane.

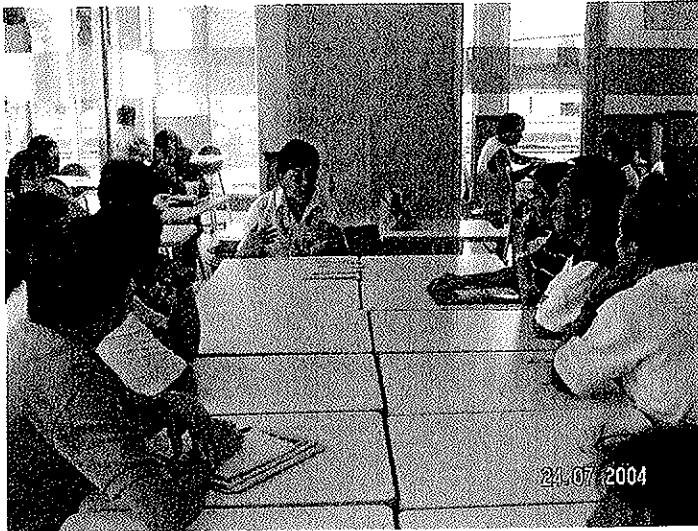
Mga Ipinagbabawal na Gawain at ang Katumbas na Multa at Kaparusahan

Ipinagbabawal na Gwain	Multa	Parusa
Pagkakalat, pagtatapon ng mga basura sa mga pampublikong lugar tulad ng kalsada, sidewalks, mga kanal, mga estero o mga parke at establishmento	Pagbabayad ng halagang di nababasa sa tatlong daang piso (P300) at di lalagpas sa isang libong piso (P1000).	Pagsasagawa ng serbisyong pangkomunidad na hindi bababa sa isang (1) arawar hindi lalagpas sa labin-limang (15) araw sa LGU kung saan nagawa ang ipinagbabawal, o pareho.
Mga gawain o pagpapatakbo, pangungulekta o pagbibiyaheng mga kagamitan na labag sa operasyon ng paglilinis at iba pang hihiingi ng gawaing ito. Pagsunog ng basura sa bukas na lugar.	Pagbabayad ng halagang di bababa sa tatlong daang piso (P300) at di lalagpas sa isang libong piso (P1000).	Pagkabilanggo ng hindi bababa sa isang araw at hindi lalagpas sa labin-limang (15) araw o pareho.
Pagiging sanhi o pagtanggap ng koleksyon ng basura na hindi hiwa-hiwalay. Bukas na pagtatapon, pagsunog ng mga nabubulok at hindi nabubulok na bagay sa mga binabahang lugar . Walang pahintulot na pagtatanggal ng mga nareresiklong bagay.	Pagbabayad ng halagang di bababa sa isang libong piso (P1000) at di lalagpas sa tatlong libong piso (P3000).	Pagkabilanggo ng hindi bababa sa labin-limang (15) araw at hindi lalagpas sa anim na buwan.
Ang paghahalo ng mga muling magagamit na materyales sa ibang basura sa anumang sasakyan, kahon o ano mang lalagyan na ginagamit na koleksyon o pagtatapon ng basura. Paggawa o pagpapatakbo ng mga bukas na tambakan na ipinagbabawal sa RA 9003, o pagsasara ng nasabing tambakan na labag sa Seksyon 37. Ang paggawa, pagbabahagi o paggamit ng mga pambalot o pangkahong materyales na hindi makakalikasan.	Para sa unang paglabag, ang pagmulta ng limang daang piso at halagang di bababa sa limang porsyento (5%) ngunit di lalagpas sa sampung porsyento (10%) ng kanyang kabuuang taunang kita ng nakaraang taon.	Para sa pangalawang paglabag, may dagdag na karapatang kaprusahan ng pagkabilanggo na hindi bababa sa isang (1) taon at hindi lalagpas sa tatlong taon (3) na naayon sa korte.
Pagpapasok ng nakakalasonng basura na pinagkakamalang “nareresiklo” o “o may nilalamang nareresiklo.” Pagbibiyaheng at pagtatapon ng kinuhang basura ng tahanan, industriya, ng negosyo at institusyon sa lugar na iba sa itinakda sa ilalim ng RA 9003.	Pagbabayad ng halagang di bababa sa sampung libong piso (P10,000) at di lalagpas sa dalawang daang libong piso (P200,000).	Pagkabilanggo ng hindi bababa sa tatlong (30) araw at hindi lalagpas sa tatlong (3) taon.
Paghahnda ng lugar, pagtatayo, pagpapalawak o pagpapatakbo ng lugar na ayusan ng basura na walang Environmental Compliance Certificate na ipinaguutos ng Presidential Decree No. 1586, RA 9003 at hindi pagkumpirma sa planong paggamit ng lupa ng LGU. Pagtatayo ng anumang establisimiyento sa loob ng dalawang metro mula sa bukas na tapunan ng basura o pinamamahalaang basurahan Pagtatayo o pagpapatakbo ng mga pasilidad ng tapunan ng basura sa anumang pinanggalingan ng tubig at anumang bahaging may tubig.	Pagbabayad ng halagang di bababa sa isandaang libong piso (P100,000) at di lalagpas sa isang milyong piso (P1,000,000)	Pagkabilanggo ng hindi bababa sa isang (1) taon at hindi lalagpas sa anim (6) na taon.

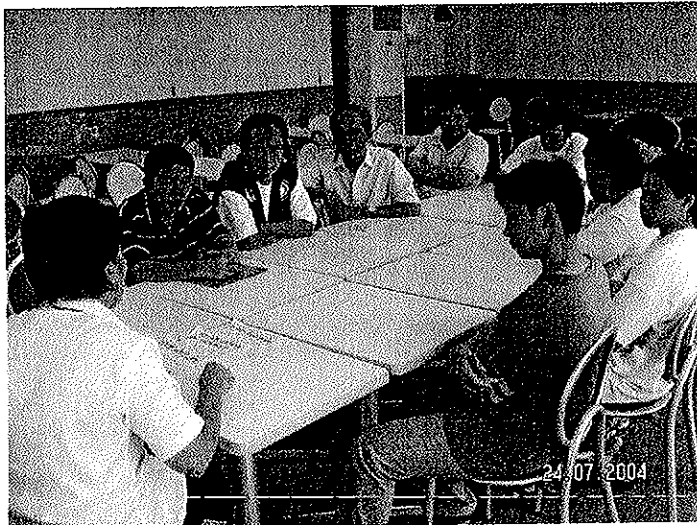
Pagtatalaga ng mga Pinuno ng Pamamahala ng Basura

Ang komisyon ay may karapatan na magtatalaga ng mga tao, indibidwal para maging pinuno ng solid waste management. Binibigyan sila ng kapatang hulihin ang sinumang lumalabag sa mga layunin at ipinag-uutos ng pagpapatupad sa RA 9003.

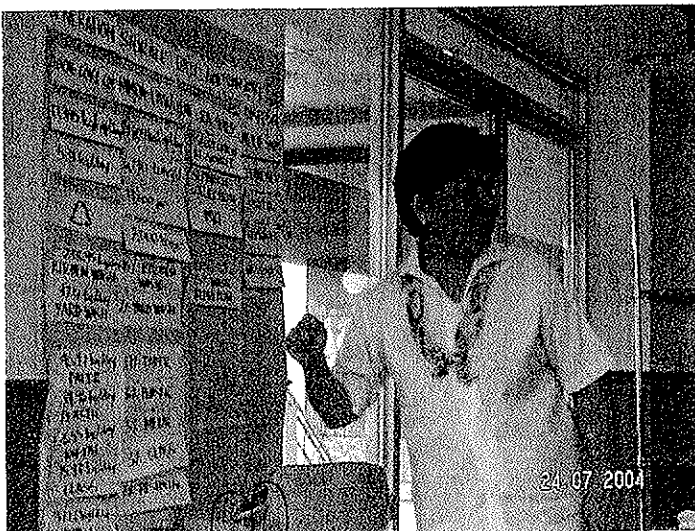
Ang pagtatalaga ay dapat isailalim sa rekomendasyon ng Provincial Solid Waste Management Board at City/ Municipal Solid Waste Management Boards.

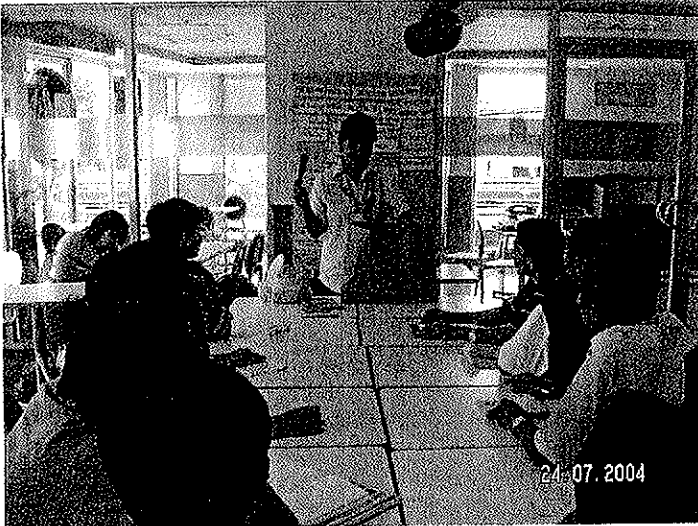


Ms. Elsie Encarnacion is briefing the Brgy. 195 participants of the subjects that will be discussed

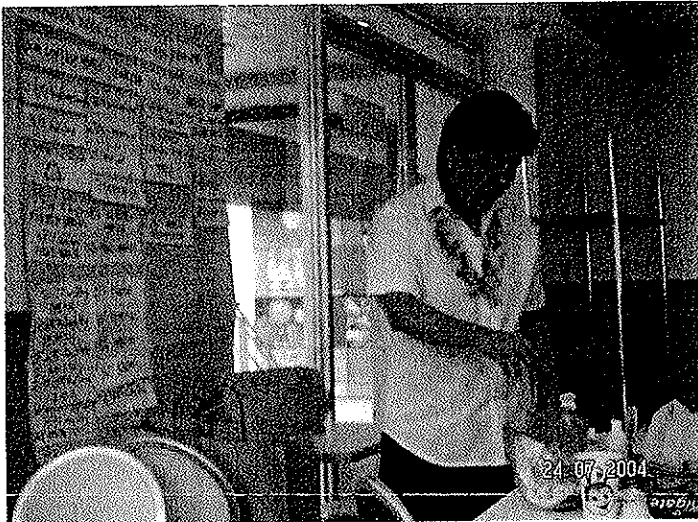


Ms. Elsie Encarnacion lecturing





Ms. Elsie Encarnacion asking the participants to identify the type of recyclables that she will be showing



Ms. Elsie Encarnacion continues lecturing while the participants are having snacks

Report for Proceedings - 8

Waste Segregation and Ecological Solid Waste
Management Act (R.A. 9003) Lecture

Date: July 25, 2004

Place: Barangay Hall, Barangay 46, Pasay City

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**Experimental Research for the Study on Drainage Improvement
In the Core Area of Metropolitan Manila**

**WASTE SEGREGATION AND ECOLOGICAL
SOLID WASTE MANAGEMENT ACT (R.A. 9003) LECTURE**

July 25, 2004
9:00 a.m. – 12:00 nn
Barangay Hall, Barangay 46, Pasay City

PROCEEDINGS

I. INTRODUCTION

Three Barangay Units, Barangays 46, Pasay City, Palanan, Makati City, and 195 City of Manila, were selected for the Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila as typical and/or representative barangays in the Core Area of Metropolitan Manila (DICAMM) for the development of a model for Barangay Institutional System. The selection was based on certain conditions such as the character of the people, and types of problems in the areas.

From the previous Workshop where the BEM-ESTERO (Barangay Environmental Manager-Environmental Strategic Task for Estero Renewal Organizing) Team identified the strengths, weaknesses, opportunities, and threats of their area under the following focal points, Solid Waste Management, Beautification and Greening, Pollution Control, and Information, Education, and Communication. They thought of requesting a lecture regarding Waste Segregation and R.A. 9003. In this lecture, the BEM-ESTERO Team were educated of the basic facts on solid waste like its process, its classifications, the correct management of garbage, the possible effects of improper disposal, and several other fruitful facts.

II. PROFILE OF PARTICIPANTS

Among the Experimental Research Study Team, Mr. Jesus Averilla (Head/Env'l/Environment/Solid Waste Management-Counterpart Team), and Ms. Bridgette Bautista (Coordinator) were able to supervise the Lecture. From the Support Staff Ms. Marie Payumo, and Ms. Eileen Medina were able to assist.

The lecturer was the Deputy Project Manager, CBSWM (Community-Based Solid Waste Management) MMDA (Metro Manila Development Authority), Ms. Elsie Encarnacion.

The participants in the lecture were from Barangay 46, Pasay City. Aside from the BEM and six Team ESTERO Members, the Barangay Chairman, and representatives from different homeowners association in Barangay 46 were all in attendance for the said lecture.

There were eleven Homeowners association in Barangay 46, these are Navecom, Limkaco - Trandom, NHA - Tramo, Velbar, Padilla Lot, Bukas Palad, Tripa de Galina, Vergara Compound, Tramo Homeowners, Riverside Tripa de Galina and Daup Palad – NHA. Each of the associations sent for their own representatives to attend the lecture. Most of the representatives who were there are the presidents of the associations.

III. PRELIMINARIES

The lecture officially started at 9:45 a.m. It began with the welcoming from Barangay Chairman Arthur Gaylican followed by a prayer led by Team Estero Member Eufemia Villanueva. For the purpose to familiarize the participants to the organizers, Barangay Chairman Arthur Gaylican introduced the organizers and the participating homeowners association. Afterwards Ms. Elsie Encarnacion started with her lecture.

The lecture was conducted for the purpose of informing the Pilot Barangays on some strategies that would upgrade their system in Solid Waste Management System as well as to get the Barangay to familiarize the with the R.A. 9003 which is better known as the Ecological Solid Waste Management Act. The lecture was supported by visual aids and sample materials prepared by Ms. Elsie Encarnacion.

Ms. Elsie Encarnacion started the lecture by explaining the purpose of the activity to the participants. She reminded the participants about the importance of protecting all the composition of environment, the air, the land and water. She added that the land and water has a great connection to the focus of the lecture. Moreover, she stated that flood and waste have great connection with each other.

Furthermore, Ms. Elsie Encarnacion noticed the Barangay's information or reminder regarding proper waste management posted on the Barangay Hall (please see attachment). There were clarifications made by Ms. Encarnacion about the Zero Waste because she said that this is not attainable, it will only be reduced but not vanished. Another matter mentioned was composting, she warned them that if they will compost their biodegradable waste wrongly the more it would create problems.

IV. SOLID WASTE MANAGEMENT PROCESS

Ms. Elsie Encarnacion first, explained the process of waste which is true in other countries of the world. Starting with Generation, she stated that every individual creates waste. She said that as long as a human is alive, wastes are created even until after its death. But Barangay Chairman Nestor Ereño pointed out that babies do not create waste at all. Ms. Elsie Encarnacion corrected him that babies are actually the great generators of waste, from the milk they consume to their disposable diapers.

After the Waste Generation, where are these stored? Different types of Storage were discussed next. Among which were the usual types of containers most households use like *sando* bags, bins, and boxes.

Wastes can't stay in our houses; therefore, Collection is being done by the Local Government Units and some Private Collectors. Usually, especially in our country's setting, door-to-door Collection is being practiced, wherein the huge garbage collection vehicles pass through residential streets and collect the garbage waiting in front of each house taken out by the maids or helpers. In areas with narrow or without passages for garbage truck, some assign Barangay Garbage Collectors to gather the garbage from households in the impassable locations.

When the Collection is done, Transport comes as the next step, wherein the collected wastes are being brought to its final destination, the dumpsite. The dumping of the waste from its sources to the dumpsites will serve as the last process, the Disposal. Ms. Elsie Encarnacion quoted the disposal area as the "Memorial Park" of waste because it is the last place where the waste will be situated.

V. ECOLOGICAL SOLID WASTE MANAGEMENT ACT AND OTHER RELATED LAWS

Ms. Encarnacion introduced the R.A. 9003 by taking a glimpse on the previous laws connected to R.A. 9003, and elaborating the development of the MMDA. She started with the Local Government Code (LGC), stating that the Barangay is responsible for the waste management in their respective areas. Then, there was MMDA Law in the year 1995, which gives the MMDA the responsibility to create a Sanitary Landfill, wherein the Local Government Units (LGU) are in charged of the system in collecting the garbage. She also added that, the MMDA was formerly known as Metro Manila Commission (MMC) under Madam Imelda Marcos, then it became MMA (Metro Manila Authority) under President Corazon Aquino, and it finally became MMDA under President Fidel V. Ramos. Clean Air Act came in 1999, and followed by the Mother Law for Solid Waste Management, the Republic Act 9003 in the year 2000.

R.A. 9003 introduced Segregation at Source. Separate Collection was also presented wherein the recyclable materials are to be separated from the biodegradable wastes, these may be brought to the Material Recovery Facility (MRF), if the area possesses this facility. As a result there would be Cleanliness that should be seen in the Streets, Sidewalks and Waterways, which may attain the goal of 25% Waste Reduction.

VI. BARANGAY 46 WASTE GENERATION

Ms. Elsie Encarnacion mentioned about a study in Metro Manila, where it was derived that approximately 11,000,000 is the population of Metro Manila during Sleeping Time and about 14,000,000 during Day Time. The waste created in Metro Manila is 0.609 kg/cap/day which equals to 6,730 tons/day and 33,000 m³. Metro Manila needs 2,000 trips of a Ten Wheeler truck to collect all the waste. Below is the actual percentages given by Ms. Encarnacion based on MMDA's study.

Table 1. Percentage of Waste Composition in Metro Manila

<i>Types of Waste</i>	<i>Percentage</i>	
<i>Kitchen Waste</i>	45%	Biodegradable
<i>Yard Waste</i>	7%	
<i>Plastic</i>	16%	Non-Biodegradable
<i>Paper</i>	17%	
<i>Metal</i>	5%	
<i>Glass</i>	3%	
<i>Residual / Others</i>	7%	

From the Table above, Ms. Elsie Encarnacion also showed the actual computations of Barangay 46's waste generation with a few adaptations from MMDA's study on the amount of waste generated per person in an area. Another Table shows the actual amount of Barangay 46's waste generation. The population of the Barangay 46 (7,000) was multiplied to 0.395 kg/cap/day (for a low income area) to identify total weight of waste produced per day, resulting to 2,765 kg/day. The result will then be multiplied by the percentage of each type of waste to get how much waste is generated in each type.

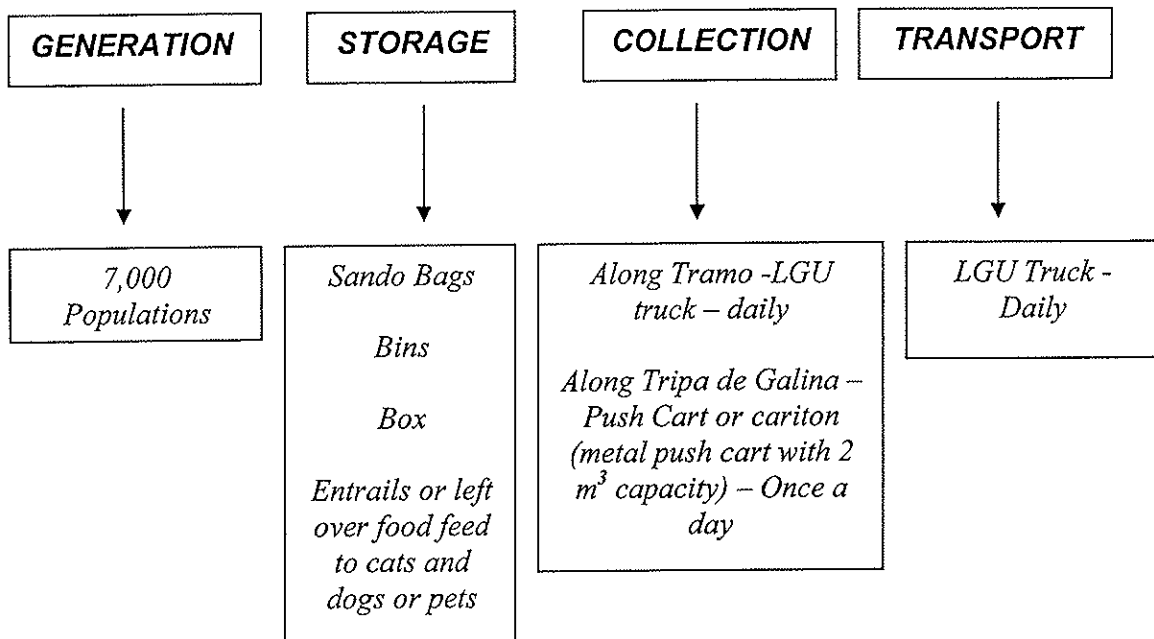
Table 2. Waste Composition in Barangay 46, Pasay City

<i>Types of Waste</i>	<i>Percentage</i>	<i>Kg/day of waste in the Barangay</i>	
<i>Kitchen Waste</i>	45%	1,244 kg/day	Biodegradable
<i>Yard Waste</i>	7%	194 kg/day	
<i>Paper</i>	17%	470 kg/day	Non-Biodegradable
<i>Plastic</i>	16%	442 kg/day	
<i>Metal</i>	5%	138 kg/day	
<i>Glass</i>	3%	83 kg/day	
<i>Residual / Others</i>	7%	194 kg/day	

VII. BARANGAY 46 SOLID WASTE MANAGEMENT SYSTEM

The 7,000 residents of Barangay 46 are the Generators, the source of waste. In every household there are Storages for all the waste being accumulated the whole day, which will be collected by the LGU truck (please see figure below).

Figure 1. Solid Waste Management System in Barangay 46, Pasay City



VIII. ACTION PLAN

The participants agreed to accomplish the following changes and improvements in Barangay 46's Solid Waste Management System starting August 1, 2004:

- Segregation at Source – the BEM-ESTERO Team will teach their community in segregating their wastes at their houses.
- Door-to-Door Collection of Biodegradable Waste In the Barangay Garbage Collector
 - Routes and schedules must be identified
 - Two additional pushcarts are planned to be constructed and bells should serve as an instrument making the residents aware of the garbage collector's arrival
 - Voluntary contributions from the residents will be allowed

- Non-Biodegradables Storage (MRF) – the storage room in the barangay hall was allowed by the barangay chairman to convert into an MRF, wherein, the BEM-ESTERO Team will manage the facility
- Homeowners association will have one coordinator assigned by the Barangay Chairman. These coordinators will be in charge on transporting the materials accumulated from the MRF.
- Collection of Dry Recyclable – collection of dry recyclables will be done twice a week
- Two additional push carts should be completed immediately
- Information and advertisements about the system
- Assembly - will be held in a timely basis with the different associations about the implementation of the new system in their barangay.
- Children will be prohibited from collecting recyclables from the households.

IX. CLOSING PROGRAM

The lecture officially ended by Ms. Elsie Encarnacion at 12:30 in the afternoon with the announcements and acknowledging words from Barangay Chairman Arthur Gaylican. Ms. Elsie Encarnacion thanked the participants for their participation and encouraged them to continuously support and be more cooperative to the Project. The participants were also grateful for the facts they have learned in the lecture.

ATTACHMENTS

EXPERIMENTAL RESEARCH FOR DRAINAGE SYSTEM IMPROVEMENT IN THE
CORE AREA OF METRO MANILA

**WASTE SEGREGATION AND ECOLOGICAL SOLID WASTE MANAGEMENT ACT
(R.A. 9003) LECTURE**

*Date: July 25, 2004 (Sunday)/9:00 a.m.-12:00nn
Venue: Barangay Hall, Barangay 46, Pasay City*

NO.	NAME	POSITION	CONTACT NUMBERS	SIGNATURE
1	Salome Abaño		0919-2643947	
2	Gloria Espiritu	BHW	0919-8069128	
3	Marcial Medina	Tanod	524-1724	
4	Emeteryo Masagnay	Lupon	523-7393	
5	Numeriano Opera	President	404-32-32	
6	Alma Managuit	Team ESTERO	523-3893	
7	Eufemia Villanueva	Team ESTERO	0919-6155592	
8	Gil Catuyay	Team ESTERO		
9	Ronnie Tan	Team ESTERO	404-3241	
10	Arturo Sy	Homeowner	400-9385	
11	Pol Abelardo	Homeowner		
12	Owena Cabual	DCW	0918-5934977	
13	Cesar G. Pagtakhan	Daup Palad Member		
14	Ernesto Mafiacap	Kagawad	530-4940	
15	Rinoo Valenzuela			
16	Leonard Yambot			
17	Naty Tan	Team ESTERO	404-3241	
18	Naty Morales	President	530-0131	
19	Sanita Galin		530-7010	
20	Amelia Gomez		530-7034	
21	Danilo del rosarion		0919-4390999	
22	Lanie Mabua	Lupon	530-5626	
23	Esmeralda Limpiado	Asst. Treasurer	530-6650	
24	Romeo Mayu		523-3893	
25	Candido Geodece Jr.			

EXPERIMENTAL RESEARCH FOR DRAINAGE SYSTEM IMPROVEMENT IN THE
CORE AREA OF METRO MANILA

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NO.	NAME	POSITION	CONTACT NUMBERS	SIGNATURE
1	Glenn Lewis Phillips	SK Kagawad		
2	Eliza Alberto			
3	Polor Juan	Co Worker BP	0917-3748299	
4	Eliseo Coloca		522-3476	
5	Russell David	Sk Chairman	530-3016	
6	Carlos Fernando	Daup Palad	536-1233	
7	Maricris Remulta	Pres NHA		
8	Juliet Delfin		530-3113	
9	Silvestra Davin	PRO	530-3016	
10	Arthuro Marcilla			
11	Mercy Santos			
12	Antonio Tangon	Team ESTERO	524-1725	
13	Lucio de Guzman Jr.	Team ESTERO	0916-5055970	
14	Jesus Mora	Team ESTERO	524-1725	
15	Benjamin Evangelista	BEM	0916-5055970	
16	Art Gaylican	Barangay Captain	0920-2818955	
17				
18				
19				
20				
21				
22				
23				
24				
25				

HULING HIRIT

>Puede bang ilibing ang mga buto ng manok, baboy, etc...?

<Siempre! Bakit ang patay dinedebone bago ilibing?!

>Eh, kung wala kang time or maid?

< Wala kang time o wala kang interes? If interested one will find time or even make time.

>Hindi ba mabaho?

> Hindi! Ang inang lupa ayaw ng mabaho, mabaho ba simenteryo? Dumpsite - OO!

>Kawawa naman scavengers' mababawasan kita.

< On the contrary mas madadagdagan pa nga kita nila kasi di magkahalo basura. . Makakapag - kompost garden pa sila.

> It's easier said than done.

> No it's easier done than said! Gawin mo na kasi dali

Oo nga naman gawin mo na!!!

MGA GINTONG ARAL

BASURA

ZERO WASTE

*MW = G (Mixed Waste = Garbage)
Pagpinaghalo – Problema

=D SW = R (Segregated Waste =
Resources)

Pag di pinaghalo – makikinabang

*Grabeng Waldas
Hakot – Tambak, lipat kalat
P8 Billion Annual Budget for Basura
ng Metro Manila, Lubog na sa
Basura, Baon pa sa “UTANG”

=D Laking Tipid

Magbukod, magkompost, mag
recycle kikita pa sa makokompost at
mabebenta

*Marumi, Sakit, Gastos, Langaw,
Ipis, Daga, Deathlihood

=D Malinis, Iwas sakit

Bawas Basura, dagdag kita,
Livelihood

*Dahilan / Problema
“Eh, Kasi...”

=D Paraan / Solusyon

“Anong pwedeng gawin?”

*Pantay – pantay
Hindi Lider
Do not re-elect

=D Political will

Leader

Re-elect

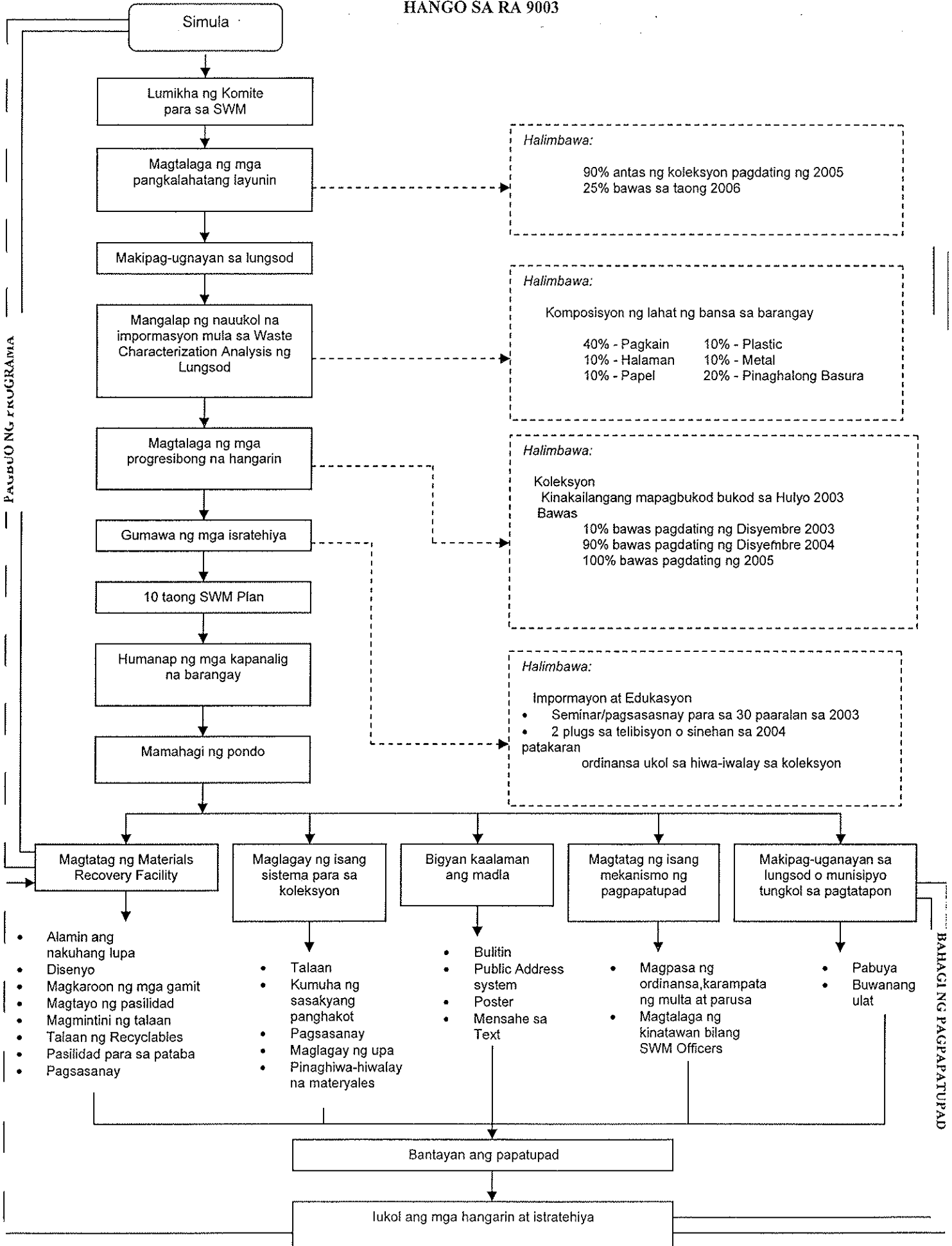
*Nasadlak sa Basura
Paradise lost
Earth abuse

=D Sobrang Ganda

Paradise regained

Earth Rehabilitation

SOLID WASTE MANAGEMENT SA HANAY NG BARANGGAY
HANGO SA RA 9003



KARAGDAGANG DETALYE SA PAMAMARAAN NG PAMAMAHALA NG BASURA O SOLID WASTE MANAGEMENT (SWM) PARA SA MGA BARANGAY (RA 9003)

Miyembro ng Komite ng Barangay Para sa Tagapangulo ng SWM

- a) Isang kagawad
- b) Tagapangulo ng sanguniang kabataan
- k) Pangulo ng asosasyon ng may-ari ng bahay
- d) Puniong-guro ng paaralang pampribado o pulitiko o ang kanilang kinatawan
- e) 1 pangulo ng Parent-Teacher Association o kinatawan
- f) 1 kinatawan ng organisasyon ng mga relihiyon o simbahan
- g) 1 kinatawan ng kumunidad ng negosyo
- h) 1 kinatawan ng pangkalikasang NGO
- i) Pangulo ng asosasyon ng mga nagtitinda sa palengke
- j) 1 kinatawan ng may-ari ng junkshop

Gawain ng Komite ng SWM

- a) Bumuo ng programang SWM na naayon sa plano ng munisipyo sa lungsod
- b) Pagbubukod at pangongolekta ng mga nabubulok at nareresiklong na basura
- c) Magtayo ng Materials Recovey Facility
- d) Maglaan ng pondo sa barangay, humanap ng mapagkukunan ng pondo
- e) Bumuo ng mangungunang grupo
- f) Magpasa ng buwanang ulat sa lungsod o sa munisipyo

Pagreresiklo

- Ilista ang mga uri ng mga materyales na muling magagamit na nasa hanay ng mga hinahangad na bawasan
- Gumawa ng programa at plano ng pagpapatupad na ipapakita ng mga hakbang kung saan ang mga layunin ay maisasakatuparan

Pagbabawas sa pinanggalingan ng Basura

- Pumili ng stratehiya sa pagbabawas ng basura mula sa pinanggalingan at ang hakbang sa pagpapatupad ng mga stratehiya
- Pumili ng nararapat na teknolohiya sa pagbabawas ng basura
- Ilista ang mga uri ng basura na dapat bawasan

Composting

- Ilista ang mga uri ang mga materyales na gagawing pataba sa ilalim ng plano ng lungsod/ munisipyo ukol sa SWM
- Gumawa ng programa at plano ng pagpapatupad na nagpapakita ng mga hakbang upang maisakatuparan ang mga layunin

Koleksiyon at paglilipat ng Basura

- a) Tiyakin ng barangay na isandaang porsiyento ang koleksiyon ng basura, sa iba't ibang uri, sa mga nasasakupang kabahaya, komersyal, industriya at agrikulturang lugar
- b) Pumili ng natatagning stratehiya at Gawain sa ilalim ng mga barangay na binibigyang pansin ang mga sumusunod na malasakit:
 - i) Probisyon ng mga maayos na disenyo ng mga lalagyan sa mga piling lugar ng koleksiyon para sa pansamantalang pag-iimbak ng panapon habang naghihintay sa paglilipat sa huling luagr ng taunan.
 - ii) Paghiwa-hiwalay ng iba't-ibang klase ng panapon para sa muling paggamit, pwedeng iresikolo at nabubulok.
 - iii) Pagbibiyaha at paglilipat ng mga panapon mula sa pinanggalingan hanggang sa huling lugar ng tapunan.
 - iv) Paglalabas at pagpapatupad ng mga ordinansa para maayos na maitupad ang sistema ng koleksiyon sa mga barangay
 - v) Paghahanda ng mga sinanay na mabuti ng mga opisyal at manggaga para mamahala sa pagtatapon.
- k) Pinakamababang Batayan
 - i) Ang tauhan ay dapat nakasuot ng kagamitang pangproteksiyon at iba pang kasuotan.
 - ii) Pagsasanay na ibinigay ng DOH
 - iii) Iwasan ang pagkasira ng mga lalagyan ng panapon o ang pagkakatatag ng panapon sa loob ng pinagkokolektahan ng basura.
 - iv) Ang mga ginagamit sa pangkolekta at pagbibiyaha ng solid waste ay dapat ayusin, patakbuhan at panatilihin sa tamang kondisyon para mabawasan ang panganib sa buhay at kaligtasan.
 - v) Ang mga kagamitan ay dapat panatilihin sa tamang kondisyon at panatilihing malinis para maiwasan ang pagkalat at pag-akit sa mga nagdadala ng sakit at ang paglikha ng mga peste.
 - vi) Gumamit ng panghiwalay o kung hindi ang sasakyan ay dapat may compartment sa paghihiwalay ng basura habang inililipat. Ang compartment ay dapat may takip.
 - vii) Ang sasakyan ay dapat binou nang naayon sa sukat, kondisyon at kapasidad ng kalsada para matiyak ang kaligtasan at maayos na koleksiyon at pagbibiyaha ng solid waste.
 - viii) Dapat ang sasakyan ay may numero, pangalan at telepono ng ahensyang kumukuha ng solid waste.

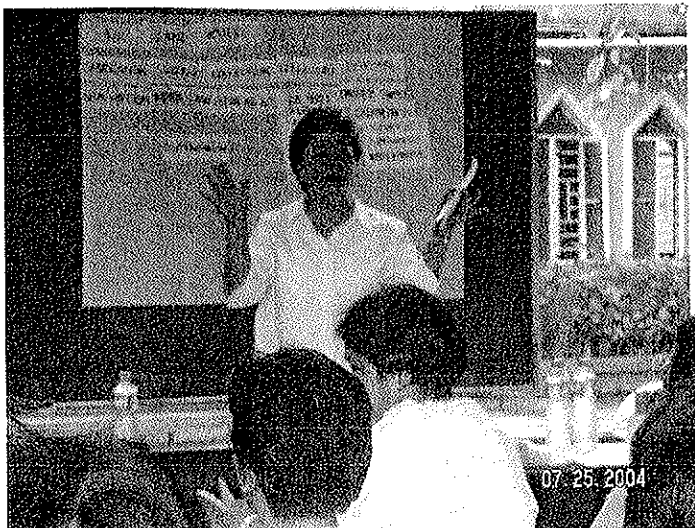
Attachment-E



Barangay Chairman Arthur Gaylican briefing the participants of the discussion for this event



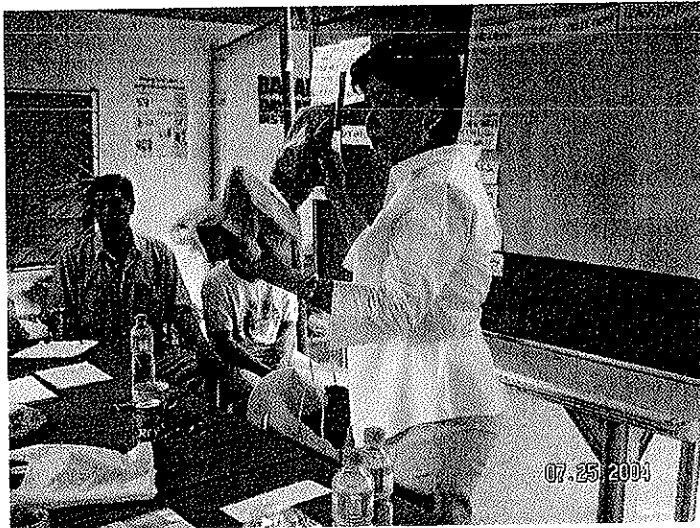
The participants from different Homeowners Association in the Barangay, and the BEM-ESTERO Team



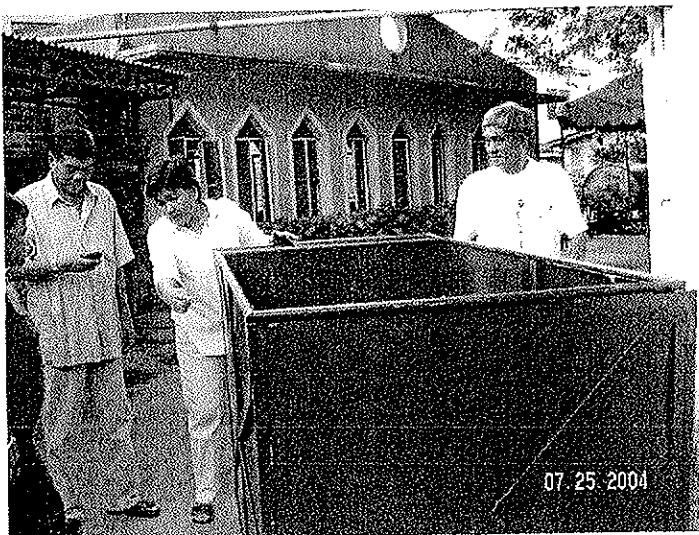
Ms. Elsie Encarnacion lecturing



The participants from different Homeowners Association in the Barangay



Ms. Elsie Encarnacion asking the participants to identify the type of recyclables that she will be showing



Ms. Elsie Encarnacion checking on the Barangay's own pushcart

Activity Records of August, 2004

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

Meeting Notes

Purpose: Follow-up of Barangay Palanan's Project Proposals for the four Focal Points

Date and Time: August 5, 2004; 8:00 a.m.-10:00 a.m.

Venue: Barangay Palanan Hall Conference Room, Makati City

Attendance: Mr. Jesus Averilla (JA)
Mr. Joselito Manos (JM)
Ms. Bridgette Bautista (BB)
Mr. Alfie Inigo (AI)
Mr. Ryan Amante (RAM)
Mr. Roel Arevalo (RAR)
Mr. Emmanuel Alivio (EA)
Mr. Renieboy Mocoy (RM)
Ms. Gilda Garte (GG)
Ms. Sonia Mariño (SM)

1. Arrival at the Barangay Palanan Hall

- The Experimental Research Study Team Members JA, JM, and BB were able to arrive at the Barangay Hall at 9:00 a.m.
- RAR was called upon by a Barangay Staff to meet us. JM mentioned immediately the purpose of the visit and requested for the existing Programs of the Barangay being implemented for Solid Waste Management, Pollution Control, and Beautification and Greening.
- RAR gave us a list of City Ordinances (please see attachment) that they are implementing in their Barangay and mentioned the actual system being practiced by the Barangay Citizens (list is with JM).

2. Meeting at the Conference Room with the BEM-ESTERO Team

- JA informed the BEM-ESTERO Team of the upcoming Information, Education, and Communication (IEC) Workshop on the third and fourth week of August. No fixed schedule as of the moment because Dr. Felixberto Roquia, Jr., who will lead the facilitation of which, is still out of the country.
- JM explained to the BEM-ESTERO Team that the Experimental Research Study Team will need their Project/Program Proposals for each Focal Point to be implemented in their Barangay with probable schedules ranging within August and December (Time Table of Activities). JM added that the Time Table they

will come up with will be the basis of assessment if the planned activities were accomplished successfully or not. JM cited the pushcart that the Barangay 46 has accomplished, as an example, which may be included in the Programs they will list down.

- RAR mentioned they are currently lining the bins distributed in their Barangay with plastics to prevent leakage and untidiness.
- JM instructed RAR to list the mentioned practice down as one of their Programs; RAR may indicate it as an activity that started on the second week of August. JM emphasized that all the practices being implemented and wished to be implemented in their Barangay related to the four Focal Points should be written down or documented because this will serve as our guide. These Programs, when completed, will be signed by the BEM-ESTERO Team and Barangay Chairman, to be then submitted to Japan. JM acknowledged the advantage of Barangay Palanan to Barangays 46 and 195 of having existing Ordinances where they can derive their Programs from.
- RAR mentioned that painting of gutters and removal of sidewalk obstructions are on-going.
- JM instructed the BEM-ESTERO Team to list the said activities as one of their on-going Programs, where they may identify it under Beautification and Greening, and the plastic-lining of garbage bins may be put under the Solid Waste Management Programs, and so on. JM added that they may simply list the Programs in bulleted form and he will take responsible of putting these into table form. JM emphasized the ideas should be coming from them because they know their Barangay better and the Experimental Research Study Team will only assist them, not dominate them. JM added that when the Time Table is completed, this may be posted on the Barangay Hall for visibility and easy monitoring.
- RAR assured the Experimental Research Study Team that their Team will meet later and submit their work on Tuesday.
- According to RM, one part of the estero is becoming a mini dumpsite where the Barangay Chairman is tough and dominates the area.
- GG added that an outpost was supposed to stand near the said are, yet until now, no outpost was put up.
- JM suggested the BEM-ESTERO Team to brainstorm after the Experimental Research Study Team leave since they were altogether at the moment, and include everything they have raised in the meeting.
- JA reminded the BEM-ESTERO Team about the upcoming IEC Workshop with Dr. Felixberto Roquia, Jr. and briefed them that they would learn the proper approaches in disseminating information.

- JM reminded the BEM-ESTERO Team that burning of garbage falls under the Pollution Control.
- RM added that several factories discharges oil in the estero, one of which is the Lord and Lady Taxi.
- AI added that their Barangay cannot do anything about eliminating or suing the Taxi Company because its location is out of their territory.
- Further, JA informed the BEM-ESTERO Team that the Experimental Research Study Team was planning to have common Programs for all three Model Barangays, but later realized that it would not be appropriate due each area's uniqueness.
- JM added that Makati has greater advantage because funds are being provided by the City Government, which makes it easy implement, unlike in the other areas, they lack this.
- RAR informed the Experimental Research Study Team that the Garbage Collector Crew leaves the ticket at their Barangay Hall to have it signed after they have completed the collection. If the crew fails to do so, the Barangay will not sign their ticket. GG added that there are assigned persons in certain points of collection to monitor the completion of the Garbage Collector Crew's tasks.

3. The Meeting was adjourned at 10:11 a.m.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

Meeting Notes

Purpose: Follow-up of Barangay 46's Project Proposals for the four Focal Points

Date and Time: August 5, 2004; 10:00 a.m.-12:00 noon

Venue: Barangay 46 Hall, Pasay City

Attendance: Mr. Jesus Averilla (JA)
Mr. Joselito Manos (JMA)
Ms. Bridgette Bautista (BB)
Barangay Chairman Arthur Gaylican (AG)
Mr. Benjamin Evangelista (BE)
Ms. Alma Managuit (AM)
Ms. Eufemia Villanueva (EV)
Mr. Antonio Tangon (AT)
Mr. Jesus Mora (JMO)
Mr. Lucio de Guzman (LD)
Ms. Natividad Tan (NT)

1. Arrival at the Barangay 46 Hall

- The Experimental Research Study Team Members JA, JM, and BB were able to arrive at the Barangay Hall 10:25 a.m.

2. Meeting at the Barangay Chairman's Office with the BEM-ESTERO Team

- AG welcomed the Experimental Research Study Team with a proud update that a big improvement occurred after the Waste Segregation and RA 9003 Lecture last July 26, 2004.
- JMA started by explaining the purpose of the visit to the group; the Barangay's Programs for each Focal Point, as well as its schedules of implementation. JMA emphasized that he only needs the list of these Programs and he will take responsible of arranging it into table form. JMA informed the BEM-ESTERO Team that they can look back at the SWOT Analysis they made, from there, they can derive solutions to the threats they have identified, as well as the reasons of these threats. JMA added that the Programs they will identify shall be listed in bulleted form under each Focal Point.
- According to AG, together with the BEM-ESTERO Team and Barangay Officials, they met with the Homeowners' Associations to discuss the four Focal Points.

- JMA told the group that reaching out to the Associations can be considered as a Program under the Information, Education, and Communication.
- AG added that majority of the residents are currently segregating except for those Associations they have not yet tapped. They also have coordinated with the Homeowners Associations' appointed Coordinators to monitor their constituents. Also, with the 167 structures standing along the estero, AG declared that 80% are aware and implementing segregation. For an orderly process, they coordinated with the Homeowners' Associations to take responsible of the weighing of gathered dry recyclables before going to the Barangay to have these sold. AG added that they have relayed to the Associations the supporting laws for violators; whenever they speak with the Associations, they also tackle matters not related to the Project for this gives them the opportunity to communicate with their citizens.
- JA informed the BEM-ESTERO Team of the upcoming Information, Education, and Communication (IEC) Workshop on the third and fourth week of August. No fixed schedule as of the moment because Dr. Felixberto Roquia, Jr., who will lead the facilitation of which, is still out of the country. JA asked if they want to hold this Workshop with the Palanan Group at the Barangay Palanan Hall.
- AG suggested holding the Workshop at their respective Barangays so the residents would see the involvement of both parties, and for the comfort and convenience of the BEM-ESTERO Team. AG also wished to invite the President of the NHA (National Housing Authority) Homeowners' Association so their group would be able to understand further and become knowledgeable of the on-going Project.
- JMA noted BB to print the pictures of the previous activities for the next visit to let the residents see what their fellow residents are involved with. JMA instructed BE to complete the list of their Programs.
- AG reported that, of all Focal Points, IEC is the only being acted upon. For the Beautification and Greening, it can be planned when to start the painting of walls. For the Pollution Control, they can set curfew for the operations of the sound systems. AG asked if they can be financially supported by JICA in the beautification activities like painting of walls and planting.
- JMA told the BEM-ESTERO Team that the Programs should be their ideas for they know their Barangay better and the Experimental Research Study Team will only assist.
- JA commented that aside from the Programs, budget is definitely important for the activities cannot push through if there is nothing to spend.
- According to JMA, a Time Table should be plotted to serve as a guide and a basis for the analysis of the results (e.g. reasons why some of the tasks were not accomplished). JMA also clarified that the updates the BEM-ESTERO Team and Barangay Chairman are giving are already implementation; these should be documented first as the plan or time table.

- AG clarified about the pushcart they have provided was not from the Barangay's budget; AG added if they could hope for JICA's financial support.
- JMA instructed to include the timeframe in the Programs the BEM-ESTERO Team will complete, so the Experimental Research Study Team can visit and document their activities. JMA emphasized that the four Focal Points will never change, the Programs the BEM-ESTERO Team will complete are to be decided by their Team.
- BE reconfirmed their assignment, the Programs and its Time Frame.
- JMA informed the group that from the Programs the BEM-ESTERO Team will submit it may serve as the Government's basis for further actions to be taken. For example, if after the Experimental Research has instilled to the Model Barangays the proper waste management, but garbage still exists in the estero and there are still some throwing in the estero, the Government may decide to cover the estero. Or, if the Experimental Research succeeded in cleaning up the estero, but the area is still being flooded, the estero might have high embedded silts, and the Government may decide to dredge it.
- AM pointed out their Team's hardships in implementing the Experimental Research, which resulted to the decrease of number of residents throwing in the estero, still, there are garbage in the estero, definitely, coming from Makati City; this now makes their efforts worthless.
- AT explained that as a Model Barangay, they are only to implement the Experimental Research in their area. They need not to focus on outside concerns; these may be considered as factors to be noted by the Experimental Research Study Team. Being one of the three of the Model Barangays, they should be exerting certain efforts as a model to other barangays.
- JMA added that you must prove to other barangays that these practices and programs are effective in your area, and then they will imitate your efforts.
- AG mentioned about Mr. Jose Pascua, a Team ESTERO Member who usually do not attend the recent meetings due to personal reasons. AG assured the Experimental Research Study Team that he will first speak with Mr. Jose Pascua personally to know his issues. From there, AG and the rest of the BEM-ESTERO Team will decide what further action shall be taken.
- AG assured the Experimental Research Study Team to call them up whenever they have accomplished their list of Programs.
- JMA asked BE for another copy of survey form the BEM-ESTERO Team created to be used in the census of their Barangay. These are to be reproduced in the Project Office today and to be picked up by BE the next morning.
- AG shared the strategy they used in order for the residents to obey what they have imparted in their respective Homeowners' Associations, such as telling the

residents that the parts of their houses crossing over the estero will be cut off if they will not obey. Moreover, they instructed the residents whenever they witnessed somebody throwing in the estero they may not approach him/her immediately, instead, they have to make sure who threw and tell the Barangay; after two weeks, the violator will receive *sarpina*. AG added that they clarified to the residents, together with the BEM-ESTERO Team that they protected the houses in their Barangay, especially those along the estero, from getting destroyed.

- AG reported that the BEM-ESTERO Team agreed among them to gather their allowances to serve as their seed money for buying the residents' recovered recyclables. AG added that they decided to sell monthly bulks for bigger profit.
- AT reported that their group already found contacts and junk buyers.
- JA advised the BEM-ESTERO Team to include the actions made in the Program they will be submitting.

3. The Meeting was adjourned at 11:21 a.m.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

Meeting Notes

Purpose: Follow-up of Barangay 195's Project Proposals for the four Focal Points

Date and Time: August 5, 2004; 1:00 p.m.-3:00 p.m.

Venue: Barangay 195 Hall, City of Manila

Attendance: Mr. Jesus Averilla (JA)
Mr. Joselito Manos (JM)
Ms. Bridgette Bautista (BB)
Barangay Chairman Nestor Ereño (NE)
Mr. Francisco Cirera (FC)
Ms. Flordeliza Isip (FI)
Ms. Arlene Bautista (AB)
Ms. Analiza Lao (AL)
Ms. Jean Rosas (JR)
Mr. Joseph Bayna (JB)
Mr. Severino Reyes (SR)
Ms. Rosalinda Antonio (RA)

1. Arrival at the Barangay 195 Hall

- The Experimental Research Study Team Members JA, JM, and BB were able to arrive at the Barangay Hall 2:14 p.m.

2. Meeting at the Barangay Hall with the BEM-ESTERO Team

- JM explained the purpose of the Experimental Research Study Team's visit, to identify Programs for each Focal Point, with time frame.
- NE pointed out that having a time frame can never happen because they do things step-by-step and they cannot insert other activities.
- JM explained that under each Focal Point, the BEM-ESTERO Team should identify different Programs which correspond to its following needs. JM added that the Experimental Research Study Team will only assist their Team, but the ideas should be coming from them. JM instructed the BEM-ESTERO Team to list all the Programs they can think of and submit it to him, and he will take responsible for putting the Programs in table form.
- FC understood the point and agreed to identify the Programs which will serve as their guide in working as well.

- NE proudly interjected that their Barangay has accomplished the planting of ornamental plants.
- JM advised the group that painting of walls and sidewalks should have schedules. JM emphasized that by December of this year, the Experimental Research Study Team together with the BEM-ESTERO Team will review the results of the Program List the BEM-ESTERO Team have submitted, after which, brainstorming and analysis will be done to determine what failed and succeeded in the implementation. JM added that after the completion of the Programs, they can post it on the Barangay Hall so everybody can be easily aware.
- NE reported that in their Barangay, estero dredging is scheduled twice a year. The first dredging was conducted and they are only waiting for the second to come.
- JM advised NE to include that in the list of Programs.
- FC asserted the necessity of having a guide like the Time Table being tasked to them (FC left afterwards due to an appointment).
- JM drafted on a scratch paper the ideal table of what he was explaining to the participants.
- NE reported about them advising the tricycle drivers to prevent smoke belching, and the posters they have posted beforehand.
- JM assured the BEM-ESTERO Team on the financial support the JICA will be giving. Also, for the IEC Programs, like in printing their IEC materials, the Experimental Research Study Team would assist.
- JA informed the BEM-ESTERO Team of the upcoming Information, Education, and Communication (IEC) Workshop on the third and fourth week of August. No fixed schedule as of the moment because Dr. Felixberto Roquia, Jr., who will lead the facilitation of which, is still out of the country.
- JM added that Dr. Roquia will be facilitating together with some colleagues. JM also advised the BEM-ESTERO Team to tap the Associations in their Barangay to join the IEC Workshop.
- JM informed the group that the Programs they will be submitting would serve as the Government's basis for further actions.
- NE raised the issue on the garbage coming from upstream and nearby barangays.
- JM shared the same issue raised earlier in Pasay. JM explained that they must give focus on their Barangay and the implementation they are tasked to do for their Barangay. Factors as such shall be left in the hands of the Experimental Research Study Team to be noted in the analysis of accomplishments of Programs. Being one of the three Model Barangays, they should focus on

proving that the Research is effective in their area, after which, they can certainly pass the experiences onto nearby barangays.

- JM emphasized that the Programs should be their own ideas for they know their Barangay better, and the Experimental Research Study Team will only assist and monitor.
- NE reported that segregation was already taught to the residents, and door-to-door collection is being implemented, wherein they have assigned a collector for the task. NE added that they noticed the increased number of concerned and aware residents regarding waste management. Finally, NE informed that they also assigned street sweepers to regularly clean the surroundings.
- FI concluded that their ideas shall complete the Program.
- JM agreed with FI and added that the identified Programs are not necessary to be scheduled or done daily. Schedules to be put should be ranges only because, probably, some can't be observed accordingly; like in painting of walls and sidewalks during rainy season.
- JA commented that in the Beautification and Greening, the probable daily activity would be the nourishment of plants.
- JM shared to the group that several Barangay Chairpersons are envious of the three chosen Model Barangays and kept on asking why they aren't chosen, or requesting if they could still be added to the three. JM pointed out that it would be difficult to manage and monitor if the Research will be implemented to many, which is why the Experimental Research Study Team selected the pilots. Then these selected pilots will transmit their learning and experiences to nearby barangays, and this makes them Models, therefore, brainstorm and define Programs to be included in the Time Table. After which, the BEM-ESTERO Team will affix their signatures to be inserted in the report and be sent to Japan.

3. The Meeting was adjourned at 3:15 p.m.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Experimental Research for the Study on Drainage Improvement In the Core Area of Metropolitan Manila

Information, Education and Communication (IEC) Workshop

August 19, 2004
9:00 a.m. – 4:00 p.m.
Barangay 195 Hall, City of Manila

PROCEEDINGS

I. INTRODUCTION

Three Barangay Units, Barangays 46, Pasay City, Palanan, Makati City, and 195 City of Manila, were selected for the Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila as typical and/or representative barangays in the Core Area of Metropolitan Manila (DICAMM) for the development of a model for Barangay Institutional System. The selection was based on certain conditions such as the character of the people, and types of problems in the areas.

Of the four Focal Points (Solid Waste Management, Beautification and Greening, Pollution Control, and Information, Education, and Communication) introduced in the Barangay, Information, Education, and Communication was Barangay 195's BEM-ESTERO (Barangay Environmental Manager-Environmental Strategic Task for Estero Renewal Organizing) Team's choice as their priority task. Therefore, the Experimental Research Study Team immediately scheduled such Workshop to teach the BEM-ESTERO Team designing their effective IEC Materials. They will be provided with drawing materials such as illustration boards, and colored pens. Their accomplished work will be reproduced and be posted all over their vicinity for their citizens to perceive and understand, and later, put into action.

II. PROFILE OF THE RESPONDENTS

The Information, Education and Communication (IEC) Workshop at the Barangay 195 Hall, City of Manila, were organized by the JICA Study Team and DPWH. The Workshop was headed by Dr. Felixberto Roquia, Jr. and was assisted by Mr. Jesus Averilla (Head/Env'l/Environment/Solid Waste Management-Counterpart Team) and Barangay Coordinator Leonardo Sanchez (Social Issue/Public Participation I-Counterpart Team) for Barangay 195, City of Manila, Ms. Bridgette Bautista, and Ms. Eileen Medina.

The participants were all present, the BEM Francisco Cirera, the 7 Team ESTERO Members and Barangay 195 Chairman Nestor Ereño.

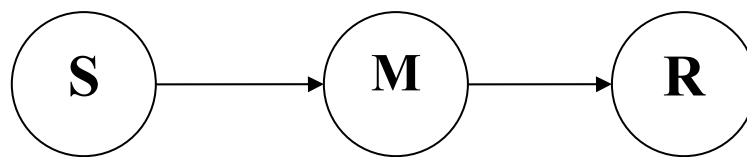
III. PRELIMINARIES

The workshop formally started at 9:00 a.m. by Barangay Chairman Nestor Ereño in welcoming the participants. Afterwards, an inspiring prayer was led by BEM Francisco Cirera. Followed shortly, Dr. Felixberto Roquia, Jr. began with his explanation on Information, Education and Communication (IEC).

IV. INFORMATION, EDUCATION AND COMMUNICATION

In the workshop, Dr. Felixberto Roquia, Jr. explained that Information is *tungkol sa mga balita, bagong kaalaman at mga bagay-bagay na dapat malaman ng bawat mamamayan ng Barangay*. Education is *pagturo ng kaalaman tungkol sa mga impormasyon na pinalaganap o pinaabot sa mamamayan*. Communication is *mga pamamaraan upang ipaabot ang impormasyon at kaalaman sa mamayan*.

The Process of Communication was explained next. Dr. Felixberto Roquia, Jr. drew a diagram (below) explaining the flow of communication from the source of the message to its receiver.



As he explained, JICA-DPWH represents the S or Source of the message while the M was the message. The source will send message and will be received by the R or the Receiver which represents them, the BEM-ESTERO Team.

Dr. Felixberto Roquia, Jr. added that since the BEM-ESTERO Team has acquired the proper knowledge through attending the workshops and seminars; they will be the one to send the knowledge and information to the residents of their Barangay. He also cited some media on how to let the people receive their message like posters and news posted on walls (Balitang dingding). Since the BEM-ESTERO Team knows very well their neighborhood; they know what catches their attention; based on their experience, they will be able to come up with an effective IEC material.

The BEM and Team ESTERO will create an effective IEC Material to disseminate information to their Barangay.

The first activity that the BEM and Team ESTERO did was to decide on what will be their Barangay Motto or Slogan. It should be able to catch attention and make the people feel curious about what was in the Barangay.

V. BEM-ESTERO TEAM'S OWN IEC MATERIAL DESIGN

In creating the IEC material, the BEM-ESTERO Team were given 30 minutes to create their own design. Before they started to design their own poster, Dr. Felixberto Roquia, Jr. advised them to focus their IEC material's theme with the questions, *"paano mahihikayat ang tao na pagandahin ang kapaligiran?"* or (how will you persuade the people to beautify your surroundings?), and *anong paraan ang gagamitin* (what approach will you use?)?

Furthermore, Dr. Felixberto Roquia, Jr. told the participants that their IEC should be able to catch the attention of the residents of Barangay 195. And since they were living in the same Barangay, he added that they also know the weaknesses and strengths of their neighbors and they can use that as their bases to make an effective IEC material.

The participants were given materials to use in creating their own design for their poster; Illustration board and color pens. At first they were given 30 minutes to make their design in a scratch paper. Then, the snack was served.

Barangay Chairman Ereño asked Dr. Felixberto Roquia, Jr. about the money to pay for the man who will draw their poster, but BEM Francisco Cirera took the responsibility on that. Barangay Chairman, again, asked Dr. Felixbert Roquia, Jr. if there will be funds for the printing of the IEC Materials. Dr. Felixberto Roquia, Jr. stated that, he thinks, that there is allotment for IEC.

Later, Dr. Felixberto Roquia, Jr. and the BEM-ESTERO Team agreed that their finished poster will be submitted on Saturday (August 28, 2004), in which, Dr. Felixberto Roquia, Jr. will go to their Barangay on the agreed date and claim their work. The IEC material they designed will be reproduced and be posted in every store and in every 5th house per street.

VI. CLOSING PROGRAM

The workshop formally ended at 11:30 a.m. with prayer and a closing remark by the BEM Francisco Cirera.

Experimental Research for the Study on Drainage Improvement In the Core Area of Metropolitan Manila

Information, Education and Communication (IEC) Workshop

August 23, 2004
9:00 a.m. – 4:00 p.m.
Barangay 46 Hall, Pasay City

PROCEEDINGS

I. INTRODUCTION

Three Barangay Units, Barangays 46, Pasay City, Palanan, Makati City, and 195 City of Manila, were selected for the Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila as typical and/or representative barangays in the Core Area of Metropolitan Manila (DICAMM) for the development of a model for Barangay Institutional System. The selection was based on certain conditions such as the character of the people, and types of problems in the areas.

Of the four Focal Points (Solid Waste Management, Beautification and Greening, Pollution Control, and Information, Education, and Communication) introduced in the Barangay, Information, Education, and Communication was Barangay 46's BEM-ESTERO (Barangay Environmental Manager-Environmental Strategic Task for Estero Renewal Organizing) Team's choice as their priority task. Therefore, the Experimental Research Study Team immediately scheduled such Workshop to teach the BEM-ESTERO Team designing their effective IEC Materials. They were provided with drawing materials such as illustration boards, and colored pens. Their accomplished work will be reproduced and be posted all over their vicinity for their citizens to perceive and understand, and later, put into action.

II. PROFILE OF PARTICIPANTS

The Experimental Research Study Team was in attendance in the Workshop, Dr. Felixberto Roquia Jr. (Public Participation II-JICA Study Team), Over-all Coordinator Mr. Jesus O. Averilla (Head/Env'l/Environment/Solid Waste Management-Counterpart Team), Barangay Coordinator for Barangay 46, Pasay City Engr. Joselito B. Manoos (Public Participation-Counterpart Team), Barangay Coordinator for Barangay Palanan, Makati City Engr. Manuel Leaño (Solid Waste Analyst), Ms. Bridgette Bautista, and Ms. Eileen Medina.

Six Team ESTERO Members and their BEM were present, as well as the Barangay Chairman, and the representatives from the different Homeowners Association of the Barangay.

III. PRELIMINARIES

The Workshop started at 10:20 a.m. with the Opening Remarks by Barangay Chairman Arturo Gaylican. He welcomed the participants as well as the Experimental Research Study Team. A prayer led by Team ESTERO Member Jesus Mora came next. Then, each participant including the Experimental

Research Study Team Members introduced themselves individually. Afterwards, the Workshop began, facilitated by Dr. Felixberto Roquia, Jr.

IV. INFORMATION, EDUCATION AND COMMUNICATION

Dr. Felixberto Roquia, Jr. started the lecture by explaining that Information is *tungkol sa mga balita, bagong kaalaman at mga bagay-bagay na dapat malaman ng bawat mamamayan ng Barangay* (about the updates, new facts, and other things to be known by the citizens); Education is *pagturo ng kaalaman tungkol sa mga impormasyon na pinalaganap o pinaabot sa mamamayan* (teaching and instilling to the community or the citizens the information being disseminated); and Communication is *mga pamamaraan upang ipaabot ang impormasyon at kaalaman sa mamamayan* (the medium or media to be used in imparting the information and facts to the citizens).

In Information, Dr. Felixberto Roquia, Jr. added that the people should know "*ang kaugayan ng naninirahan sa Barangay at ang pananagutan sa Barangay*" (the correlation of the residents with their responsibilities to their Barangay); in Education, "*ang pagtuturo tungkol sa impormasyon*" (the information are being taught); and in Communication, "*kailangan na-uunawaan*" (the information taught should be understood).

Since the BEM-ESTERO Team knows their neighbors very well, they can come up with an effective IEC Material. Based on their experiences and observation, they are very much aware of the weaknesses and strengths of their neighborhood.

According to Dr. Felixberto Roquia, Jr., being the BEM-ESTERO Team, they obtain much knowledge by attending the workshops the JICA-DPWH Team has provided which made them the sender of the information or knowledge to their community. They will use different media to enhance the awareness of the residents of their Barangay among of which are posters, *balitang dingding, kuwentuhan o sulat*.

V. MOTTO FORMULATION

The participants were given time to come up with their Motto or Slogan. They started at 10:45 a.m., and followed by drafting the *Balitang Dingding*.

The BEM – ESTERO were given an illustration board and colored pens for them to use in creating their IEC Material. It was agreed upon that the size of the *Balitang Dingding* should be A3, which comprises the members of the BEM-ESTERO Team and the related Ordinances of the Barangay.

The finished IEC Material will be submitted on Saturday, August 28, 2004, to be collected by Dr. Felixberto Roquia, Jr. The BEM-ESTERO Team will be assisted by their Barangay Coordinator Engr. Lito Manoos in making their IEC Materials.

VI. CLOSING PROGRAM

The Closing Remarks was delivered by Barangay Chairman Arturo Gaylican and BEM Benjamin Evangelista. The Workshop ended at 2:00 p.m.

Experimental Research for the Study on Drainage Improvement In the Core Area of Metropolitan Manila

Information, Education and Communication (IEC) Workshop

August 24, 2004

9:00 am – 4:00 pm

Barangay Palanan Hall, Makati City

PROCEEDINGS

I. INTRODUCTION

Three Barangay Units, Barangays 46, Pasay City, Palanan, Makati City, and 195 City of Manila, were selected for the Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila as typical and/or representative barangays in the Core Area of Metropolitan Manila (DICAMM) for the development of a model for Barangay Institutional System. The selection was based on certain conditions such as the character of the people, and types of problems in the areas.

Of the four Focal Points (Solid Waste Management, Beautification and Greening, Pollution Control, and Information, Education, and Communication) introduced in the Barangay, Information, Education, and Communication was Barangay Palanan's BEM-ESTERO (Barangay Environmental Manager-Environmental Strategic Task for Estero Renewal Organizing) Team's choice as their priority task. Therefore, the Experimental Research Study Team immediately scheduled such Workshop to teach the BEM-ESTERO Team designing their effective IEC Materials. They were provided with drawing materials such as illustration boards, and colored pens. Though Barangay Palanan is way ahead of the other two Barangays in practicing proper solid waste management, they were still tasked to produce their ideal, yet effective IEC Material. Their accomplished work will be reproduced and be posted all over their vicinity to further inform their citizens of the on-going Programs and Project in their area.

II. PROFILES OF THE PARTICIPANTS

The Experimental Research Study Team was in attendance in the Workshop, Dr. Felixberto Roquia Jr. (Public Participation II-JICA Study Team), Over-all Coordinator Mr. Jesus O. Averilla (Head/Env'l/Environment/Solid Waste Management-Counterpart Team), Barangay Coordinator for Barangay Palanan, Makati City, Engr. Manuel Leaño (Solid Waste Analyst), Barangay Coordinator for Barangay 195, City of Manila, Engr. Leonardo Sanchez (Social Issue/Public Participation I-Counterpart Team), and Ms. Eileen Medina.

The six Team ESTERO Members were with their BEM in attendance for the IEC Workshop.

III. PRELIMINARIES

The IEC Workshop started at 9:35 a.m. with the welcoming of the participants by Mr. Jesus Averilla, followed by a prayer led by Team ESTERO Ma. Lourdes Cambosa. Shortly, Dr. Felixberto Roquia, Jr. started the discussion.

IV. INFORMATION, EDUCATION AND COMUNICATION

Dr. Felixberto Roquia, Jr. explained that Information is *tungkol sa mga balita, bagong kaalaman at mga bagay-bagay na dapat malaman ng bawat mamamayan ng Barangay* (about the updates, new facts, and other things to be known by the citizens); Education is *pagturo ng kaalaman tungkol sa mga impormasyon na pinalaganap o pinaabot sa mamamayan* (teaching and instilling to the community or the citizens the information being disseminated); and Communication is *mga pamamaraan upang ipaabot ang impormasyon at kaalaman sa mamamayan* (the medium or media to be used in imparting the information and facts to the citizens).

Dr. Felixberto Roquia, Jr. added that the BEM-ESTERO Team will serve as the sender of the information and knowledge because they are much well-informed than the rest of the residents in their Barangay from attending the seminars and workshops conducted by the JICA-DPWH Team. Since they know much of their area's weaknesses and strengths, it will be easy for them to create an effective IEC Material, which will be based from their experiences and observations. These will be reproduced and posted all over their area to be read, understood, and implemented by the residents of their Barangay; these may be in Posters or *Balitang Dingding, kuwentohan at sulat*).

V. MOTTO FORMULATION AND DESIGNING OF IEC MATERIALS

Before the BEM-ESTERO Team start with their IEC Material, they were asked to compose their Barangay motto or slogan. Each member were asked compose their own within 30 minutes.

Afterwards, Dr. Felixberto Roquia, Jr. instructed them creating their *Balitang Dingding*, which includes the names of the organization working on the project and the related Barangay Ordinances, and the BEM-ESTERO Team started drafting.

As agreed by the BEM-ESTERO Team and the Experimental Research Study Team, the finished IEC Material will be collected by Dr. Felixberto Roquia, Jr. on Saturday, August 28, 2004; this will be reproduced into several copies and be posted in every store and 10th house in each street.

VI. CLOSING PROGRAM

The Closing Remarks was delivered by BEM Roel Arevalo, and the workshop ended at 11:30 a.m.

Activity Records of September, 2004

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

Meeting Notes

Purpose: Updating of Barangay status

Date and Time: September 8, 2004; 9:40 a.m.

Venue: Barangay 46 Hall, Pasay City

Attendance:

Mr. Jesus Averilla	(JA)
Mr. Joselito Manoos	(JMA)
Ms. Bridgette Bautista	(BB)
Mr. Benjamin Evangelista	(BE)
Ms. Alma Managuit	(AM)
Ms. Natividad Tan	(NT)
Ms. Eufemia Villanueva	(EV)
Mr. Antonio Tangon	(AT)
Mr. Jesus Mora	(JMO)
BC Arthur Gaylican	(AG)

The following matters were discussed:

1. Effects of August 25 and 26, 2004 Storm to Barangay 46
 - According to the BEM-ESTERO Team, no adverse effects took place during the two stormy days. The water and garbage in the creek only flowed rapidly, but it did not overflow.
 - According to AG, the only blockage in the creek were the 2 or 3 houses encroaching on the creek, still, it did not cause any problem.
2. Maintenance of Cleanliness and Its Monitoring
 - AG suggested that in order to maintain cleanliness, religious monitoring should be conducted not only to the pilot projects, but also to the other barangays along the estero.
 - JM emphasized that the Experimental Research Study Team will be frequenting the Pilot Barangays from September to March in order to monitor the progress in the Barangays.
3. Relocation Issues
 - JM clarified that, originally, SWM and Relocation are not of JICA's responsibilities, it's the Philippines', but now, JICA is willing to take part by

initiating the establishment of Committees on Barangay Environmental Management and on Relocation.

- JM also assured the BEM-ESTERO Team that the status and/or results of the activities will be indicated in the Feasibility Study, which will be the basis of a well-planned relocation; wherein, the Pilot Barangays will serve as proofs to other Barangays having or maintaining proper Solid Waste Management.

4. Other Matters

- JA emphasized that in IEC, the assigned BEM-ESTERO Member to head for this focal point shall lead or facilitate in explaining to the residents about the status, plans, and outputs of the on-going Project.
- AG asserted that their group will write a letter of complaint to the City of Makati due to the existence of a pigpen along the estero within Makati's area, because affects the worsening condition of the same estero crossing their district.

With no other matters to discuss, the meeting was adjourned at 10:45 a.m.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

Meeting Notes

Purpose: Updating of Barangay status

Date and Time: September 8, 2004; 11:55 a.m.

Venue: Barangay Palanan Hall, Makati City

Attendance:

Mr. Jesus Averilla	(JA)
Mr. Joselito Manoos	(JM)
Ms. Bridgette Bautista	(BB)
Mr. Emmanuel Alivio, Jr.	(EA)
Ms. Gilda Garte	(GG)
Mr. Renieboy Mocoy	(RM)
Mr. Roel Arevalo	(RA)
Ms. Sonia Mariño	(SM)

The BEM-ESTERO Team was complete in attendance long before the Experimental Research Study Team arrived at the Barangay Hall. By the time the Study Team arrived, most of the BEM-ESTERO Team have already gone to attend to some errands, only five were able to come back to meet with the Study Team. The following matters were discussed:

1. IEC Materials - JA and JM elaborated to the BEM-ESTERO Team the contents and locations of the IEC Materials to posted in their area. It was emphasized that the materials should contain the brief explanation or background of the on-going Experimental Research, updates on the status of the Research, and reminders regarding correct implementations in waste disposal, area beautification, and pollution control.
2. Effects of August 25 and 26, 2004 Storm to Barangay Palanan - According to the BEM-ESTERO Team, their area has never been badly affected by heavy rains and flooding.

With no other matters to discuss, the meeting was adjourned at 12:20 p.m.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

Meeting Notes

Purpose: Updating of Barangay status

Date and Time: September 9, 2004; 8:55 a.m.

Venue: Barangay 195 Hall, City of Manila

Attendance:

Mr. Jesus Averilla	(JA)
Ms. Bridgette Bautista	(BB)
Ms. Flordeliza Isip	(FI)
Ms. Arlene Bautista	(AB)
Ms. Rosalinda Antonio	(RA)
Ms. Jean Rosas	(JR)
Mr. Severino Reyes	(SR)
Mr. Joseph Bayna	(JB)
Ms. Analiza Lao	(AL)
Mr. Francisco Cirera	(FC)
BC Nestor Ereño	(NE)

The following matters were discussed:

1. Effects of August 25 and 26, 2004 Storm to Barangay 195

- According to the BEM-ESTERO Team, the water and garbage in the creek only flowed rapidly, but it did not overflow.
- Only one house was affected by the storm due to its low location, but the rest of Barangay 195 was not badly affected.
- R. Papa Street - one of main streets to be accessed going to Barangay 195 - other streets outside Barangay were impassable. Going to and out of Barangay 195 became a difficulty during those days.
- According to NE, the next morning right after the storm, FC initiated the clean-up in their Barangay by removing the scattered detached tree branches and checking up on the drainages of blockages.

2. Reporting by the BEM-ESTERO Team

- Solid Waste Management System - According to the Team, at this point, none of their fellow-residents, especially those along the estero, are throwing in the water because of their Barangay Door-to-Door Garbage Collection.

- Loitering Dogs - According to NE, the loitering dogs are still one of their problems because not all dog-owners are being responsible from keeping their pets loose. Their resolution was to personally request from the irresponsible owners to keep their pets from wandering around.
- IEC Materials - The BEM-ESTERO Team were proud to report and show the Study Team around their Barangay where they have distributed their posters (see attached photos).

3. Relocation Issues

- JA mentioned that an example of a Relocation Site is in Laguna because of factory proliferation in the province, which can probably provide employment for many.
- FC pointed out that the most important matter in resettlement is the source of livelihood. He shared about an incident in Norzagaray, Bulacan, where the houses did not have electricity, water, and toilet, which made the relocated informal settlers, come back to squatting.
- NE requested JA to include in the Resettlement Plan the Livelihood Programs and not only rely on the existing factories in the vicinity (if any in the relocation area).

4. Other Matters

- Funds for Pushcarts - NE followed up on the funding for the additional pushcarts to be used in the Barangay's door-to-door garbage collection. JA clarified to the BEM-ESTERO Team, especially to NE, that JICA did not say that they will provide the pilots some pushcarts and other similar paraphernalia, but they will only consider and justify the necessity because it is mainly not supported in the budget.

With no other matters to discuss, the meeting was adjourned at 10:53 a.m.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

BEM-ESTERO Presentation General Rehearsal

Purpose: Rehearsal of the three BEM-ESTERO Teams for their presentation in the 2nd Barangay Cluster Workshop on October 22, 2004 at Traders Hotel

Date and Time: October 16, 2004; 9:00 a.m.-12:00 noon

Venue: Barangay Palanan Hall Conference Room, Makati City

Attendance: (Please see attached Attendance Sheet)

1. Arrival at the Barangay Palanan Hall

- Dr. Felixberto Roquia, Jr. was able arrive at 8:00 a.m., while Mr. Jesus Averilla and Ms. Bridgette Bautista, together with the Barangay 195 BEM-ESTERO Team, arrived at 8:15 a.m.
- The Barangay 46 BEM-ESTERO Team was able to arrive at 8:45 a.m. and followed by the Barangay Palanan's in a short while.
- At 9:10 a.m., three of the JICA Study Team arrived, Mr. Hajime Tanaka (Team Leader), Mr. Kenji Morita (Database), and Ms. Sonoe Yamada (Public Participation I).

2. Briefing of the day's activity

- While waiting for the rest of the participants, Dr. Felixberto Roquia, Jr. had through of the script (*please see* attachment) with the Barangay 195 BEM-ESTERO Team.
- As the participants were complete, the rehearsal officially started at 9:00 a.m. where the participants read their scripts altogether.
- After several rounds of reading, the BEM-ESTERO Team practiced their blocking.
- After rehearsing, Dr. Felixberto Roquia, Jr. gave the participants few advices on handling their reports, like, simply stating particular points regarding the progress in their Barangay or explaining the picture that will appear. Dr. Roquia instructed to include the records of the garbage collected by the pushcarts in Barangays 46 and 195.

Activity Records of October, 2004

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

BEM-ESTERO Presentation General Rehearsal

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3. Other Matters

- Dr. Felixberto Roquia, Jr. assured the BEM-ESTERO Teams that they will be provided of transportation going to the hotel; schedules shall be finalized later and to be announced during the final rehearsals in their respective Barangays.
- The final rehearsal schedules for each Barangay:
 - October 19, 2004; 8:00 a.m.: Barangay 46, Pasay City
 - October 19, 2004; 1:00 p.m.: Barangay 195, City of Manila
 - October 20, 2004; 1:00 p.m.: Barangay Palanan, Makati City

4. Closing Remarks by the JICA Study Team Leader, Mr. Hajime Tanaka

- Mr. Hajime Tanaka explained to the BEM-ESTERO Teams about the inclusion of all the activities they are doing, as well as their plans for their Barangays, in the Master Plan.
- Mr. Hajime Tanaka also encouraged the BEM-ESTERO Teams to enhance the involvement of their Barangays to the Project, to prepare a good presentation for the upcoming 2nd Barangay Cluster Workshop, and to help in the completion and improvement of their Barangay Environmental Management Plan (BEMP).

5. The rehearsal officially ended at 11:25 a.m.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

BEM-ESTERO Presentation Final Rehearsal

Purpose: Rehearsal of the BEM-ESTERO Team for their presentation in the 2nd Barangay Cluster Workshop on October 22, 2004 at Traders Hotel

Date and Time: October 19, 2004; 8:00 a.m.-10:00 a.m.

Venue: Barangay 46 Hall, Pasay City

Attendance:

Dr. Felixberto Roquia, Jr.	(FR)
Ms. Bridgette Bautista	(BB)
Barangay Chairman Arthur Gaylican	(AG)
BEM Benjamin Evangelista	(BE)
Ms. Alma Managuit	(AM)
Ms. Natividad Tan	(NT)
Ms. Eufemia Villanueva	(EV)
Mr. Sebastian Aguilar	(SA)
Mr. Jesus Mora	(JM)
Mr. Antonio Tangon	(AT)

The rehearsal officially started at 9:10 a.m.

1. Program Briefing

- FR started by briefing the BEM-ESTERO Team regarding the 2nd Barangay Cluster Workshop Program flow for them to visualize the event; from the registration until the Closing, especially the chronology of their presentation with the other two Pilot Barangays.

2. Vehicle arrangement going to and from Traders Hotel on October 22, 2004

- As promised, the Barangay will be provided with transportation service for the upcoming Workshop. Barangays 46 and Palanan BEM-ESTERO Teams will ride together in one van. They will be picked up at 7:30 a.m. at the Bailey bridge along Casino Street, Palanan, Makati City, after dropping off the BEM-ESTERO Team of Barangay 195, City of Manila at Traders Hotel. After the day's activity, they will be brought back to their respective Barangays.

3. Run-through and final flow of presentation

- FR joined the reading by taking the parts of Barangays 195 and Palanan. After a few rounds of script-reading, FR elaborated the order of presentation listed on their script which they have to follow during the presentation, as well as the important subjects to be mentioned:

I. BEM gives short remark about the BEM-ESTERO experience

- The Barangay Chairman shall give his comments on the organization of BEM-ESTERO (choosing of BEM and ESTERO Members)
- Introduce BEM

II. BEM introduces the Team ESTERO Members

- BEM will introduce himself
- The BEM will call all the ESTERO Members to line up in front

III. Team ESTERO Members introduce themselves one by one

IV. Presentation of BEMP according to Focal Points

- BEM will share their experiences (Workshops attended: Training Workshop, Profiling, SWOT, IEC, and SWM)
 - BEM will call the person in-charge to discuss their Programs for IEC
 - The person-in-charge will discuss the Programs for SWM
 - The person-in-charge will discuss the Programs for Beautification and Greening
 - The person-in-charge will discuss the Programs for Pollution Control
- Afterwards, FR advised the reporters to list down the topics they wished to discuss and use it as their guide.
- AM suggested that it would be much effective if they will hold up letters spelling out BEM-ESTERO for the other participants to easily understand what they are presenting.

4. Other Matters

- FR reminded the group to wear their BEM-ESTERO shirts and identification cards during the presentation. They may bring it with them and wear their semi-formals first, or they can simply wear the shirt throughout the day.

With no other matters to discuss, the rehearsal officially ended at 11:25 a.m.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

BEM-ESTERO Presentation Final Rehearsal

Purpose: Rehearsal of the BEM-ESTERO Team for their presentation in the 2nd Barangay Cluster Workshop on October 22, 2004 at Traders Hotel

Date and Time: October 19, 2004; 1:00 p.m.-3:00 p.m.

Venue: Barangay 195 Hall, City of Manila

Attendance:	Dr. Felixberto Roquia, Jr.	(FR)
	Mr. Jesus Averilla	(JA)
	Mr. Joselito Manoos	(JM)
	Ms. Bridgette Bautista	(BB)
	Barangay Chairman Nestor Ereño	(NE)
	BEM Francisco Cirera	(FC)
	Ms. Jean Rosas	(JR)
	Ms. Rosalinda Antonio	(RA)
	Mr. Joseph Bayna	(JB)
	Mr. Severino Reyes	(SR)
	Ms. Pacita Paras	(PR)
	Ms. Arlene Bautista	(AB)
	Ms. Analiza Lao	(AL)

The rehearsal officially started at 1:20 p.m.

1. Adjustments

- FR started by relaying to the BEM-ESTERO Team of Barangay 195 the few adjustments made during the rehearsals at Barangay 46 such as including their group in spelling the BEM-ESTERO; because originally, Barangays Palanan and 46 only have parts on this.

2. Vehicle arrangement going to and from Traders Hotel on October 22, 2004

- As promised, the Barangay will be provided with transportation service for the upcoming Workshop. Barangay 195 will be picked up at 6:30 a.m. at their Barangay Hall and to be brought to the Traders hotel immediately because afterwards, the vehicle will be used to fetch the groups from Barangays 46 and Palanan. After the day's activity, they will be brought back to their respective Barangays.

3. Run-through and final flow of presentation

- FR and BB joined the reading by taking the parts of Barangays 46 and Palanan, respectively. After several rounds of reading, FR elaborated the order of

presentation listed on their script which they have to follow during the presentation, as well as the important subjects to be mentioned:

I. BEM gives short remark about the BEM-ESTERO experience

- The Barangay Chairman shall give his comments on the organization of BEM-ESTERO (choosing of BEM and ESTERO Members)
- Introduce BEM

II. BEM introduces the Team ESTERO Members

- BEM will introduce himself
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IV. Presentation of BEMP according to Focal Points

- BEM will share their experiences (Workshops attended: Training Workshop, Profiling, SWOT, IEC, and SWM)
- BEM will call the person in-charge to discuss their Programs for IEC
- The person-in-charge will discuss the Programs for SWM
- The person-in-charge will discuss the Programs for Beautification and Greening
- The person-in-charge will discuss the Programs for Pollution Control

- Afterwards, FR advised the reporters to list down the topics they wished to discuss and use it as their guide.

4. Other Matters

- FR reminded the group to wear their BEM-ESTERO shirts and identification cards during the presentation. They may bring it with them and wear their semi-formals first, or they can simply wear the shirt throughout the day.

With no other matters to discuss, the rehearsal officially ended at 2:50 p.m.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

BEM-ESTERO Presentation Final Rehearsal

Purpose: Rehearsal of the BEM-ESTERO Team for their presentation in the 2nd Barangay Cluster Workshop on October 22, 2004 at Traders Hotel

Date and Time: October 20, 2004; 1:00 p.m.-3:00 p.m.

Venue: Barangay Palanan Hall, Makati City

Attendance:	Dr. Felixberto Roquia, Jr.	(FR)
	Mr. Manuel Leaña	(ML)
	Ms. Bridgette Bautista	(BB)
	BEM Roel Arevalo	(RAR)
	Mr. Renieboy Mocoy	(RM)
	Ms. Gilda Garte	(GG)
	Ms. Ma. Lourdes Cambosa	(LC)
	Mr. Emmanuel Alivio	(EB)
	Mr. Ryan Amante	(RAM)
	Mr. Alfie Iñigo	(AI)

The rehearsal officially started at 1:51 p.m.

1. Program briefing and few adjustments

- FR started by explaining the Program and emphasizing on the Pilot Barangays' Presentation:
 - Mr. Jesus Averilla will first discuss all about the Experimental Research,
 - Mr. Joselito Manoos will come next to give an overview of the Experimental Research,
 - Barangay 195 BEM-ESTERO will next present their BEMP, followed by
 - Barangay Palanan BEM-ESTERO, then lastly by
 - Barangay 46.

Each Barangay is allotted 15 minutes present.

- FR relayed to the BEM-ESTERO Team of Barangay Palanan the few adjustments made during the earlier rehearsals at Barangays 46 and 195.

2. Vehicle arrangement going to and from Traders Hotel on October 22, 2004

- As promised, the Barangay will be provided with transportation service for the upcoming Workshop. Barangays Palanan and 46 BEM-ESTERO Teams will ride together in one van. They will be picked up at 7:30 a.m. at the Bailey bridge along Casino Street, Palanan, Makati City, after dropping off the BEM-

ESTERO Team of Barangay 195, City of Manila at Traders Hotel. After the day's activity, they will be brought back to their respective Barangays.

3. Run-through and final flow of presentation

- FR joined the reading by taking the parts of Barangays 46 and 195. After several rounds of reading, FR elaborated the order of presentation listed on their script which they have to follow during the presentation, as well as the important subjects to be mentioned:

I. BEM gives short remark about the BEM-ESTERO experience

- The Barangay Chairman shall give his comments on the organization of BEM-

ESTERO (choosing of BEM and ESTERO Members)

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II. BEM introduces the Team ESTERO Members

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 - The person-in-charge will discuss the Programs for Beautification and Greening
 - The person-in-charge will discuss the Programs for Pollution Control
- Afterwards, FR advised the reporters to list down the topics they wished to discuss and use it as their guide.

4. Other Matters

- FR reminded the group to wear their BEM-ESTERO shirts and identification cards during the presentation. They may bring it with them and wear their semi-formals first, or they can simply wear the shirt throughout the day.

With no other matters to discuss, the rehearsal officially ended at 2:18 p.m.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

Site Visit

Purpose: Check the status of Barangay 195 and to propose Tokyo Containers

Date and Time: October 27, 2004; 12:30 p.m.-2:30 p.m.

Venue: Barangay 195, City of Manila

Attendance: Mr. Akinori Sato (AS)
Ms. Bridgette Bautista (BB)

AS and BB arrived at the Barangay at 12:30 p.m. and went around immediately.

- AS, assisted by BB, went around the Barangay to check on its progress with regards to the Programs the Barangay has agreed to achieve.
- AS and BB were accompanied by the BEM-ESTERO Team in going around the Barangay, along J. Trinidad Street (the Barangay Collection Route) where we caught the residents busy with their horn-making livelihood for the approaching holidays.
- Along Narra Street, a vacant lot beside the Barangay Health Center is being rented by a Surplus Trading business. AS, BB and the BEM-ESTERO Team went in to look around and checked its operations. According to the owner/manager, these surpluses are from Japan that he sells to different spare parts shops in Quezon City and Manila. The shop also entertains walk-in sellers of metals. In this manner, AS was delighted with the shop's contribution in minimization of waste in the Barangay.
- In the same Trading Center, AS introduced to the BEM-ESTERO, with some Trading Center personnel, the Tokyo Container that will be provided by the Experimental Research. One unit will be provided for the moment and the use of it will undergo observation to determine if having containers in the Barangay will be more effective in waste reduction and proper management. Barangay Chairman Nestor Ereño was delighted with the idea and is looking forward to this privilege.

The inspection ended at 2:30 p.m.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

Site Visit

Purpose: Check the status of Barangay Palanan and to propose Tokyo Containers

Date and Time: October 28, 2004; 2:10 p.m.-2:53 p.m.

Venue: Barangay Palanan, Makati City

Attendance: Mr. Akinori Sato (AS)
Ms. Bridgette Bautista (BB)

AS and BB arrived at the Barangay Hall at 2:10 p.m. to fetch BEM Roel Arevalo to accompany us in going around.

The Barangay is too broad to walk around to, so we went on riding the car. BEM Roel Arevalo showed us their accomplishments on Beautification and Greening such as the distributed plastic garbage bins on the corners of the main roads in the Barangay, implementation of one-side parking in all streets, and the repainted waiting sheds and electric posts.

BEM Roel Arevalo explained to AS that their activities in the Barangay are dependent on the City Government, including those mentioned above. AS was, somewhat, disappointed with the Barangay's status due to its dependency on the City Government most of the time. Being a Pilot Barangay of the Experimental Research, the BEM-ESTERO Team should come up with plans and results on their own, especially relating it with the purpose of the Experimental Research.

The inspection ended at 2:53 p.m., AS and BB left for Barangay 46 after dropping off BEM Roel Arevalo back to the Barangay Hall.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

Site Visit

Purpose: Check the status of Barangay 46 and to propose Tokyo Containers

Date and Time: October 28, 2004; 3:04 p.m.-4:30 p.m.

Venue: Barangay 46, Pasay City

Attendance: Mr. Akinori Sato (AS)
Ms. Bridgette Bautista (BB)

AS and BB arrived at the Barangay at 3:04 p.m. They walked from Buendia going in the Barangay passing along the road following Estero de Tripa de Gallina.

AS was delighted with the progress of the Barangay, especially seeing the children cleaning the litters off the road. The BEM-ESTERO Team showed their MRF to AS where only few recyclables were left because they just have sold it a few days ago.

Afterwards, AS, BB, and the BEM-ESTERO Team went inside the Office of the Barangay Chairman to discuss further. AS introduced to the BEM-ESTERO, with some Trading Center personnel, the Tokyo Container that will be provided by the Experimental Research. One unit will be provided for the moment and the use of it will undergo observation to determine if having containers in the Barangay will be more effective in waste reduction and proper management. Barangay Chairman Arthur Gaylican expressed his dislike with the idea, for the reason that the container would make the residents and passers-by dependent on the container by lazily shooting in the litters and garbage in it. This will eliminate their sense of responsibility in reducing waste.

As AS and were about to leave, we caught an estero cleaner/recyclable collector working. He was walking in the water and picking up plastics and other reable materials, especially those that would block the flow of the water.

The inspection and discussion ended at 2:53 p.m., AS and BB left for Barangay 46 after dropping off BEM Roel Arevalo back to the Barangay Hall.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

Activity Records of November, 2004

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

Surprise Site Visit

Purpose: Inspection on the Barangay 195's actual actions during the day

Date and Time: November 4, 2004

Venue: Barangay 195, City of Manila

Attendance: Ms. Elsie I. Encarnacion
Ms. Bridgette E. Bautista

1. Cleanliness situation of the Barangay

Disappointment arisen upon seeing from afar the whirling scenario fronting the Barangay Hall (Narra Street), where the tricycles and other vehicles messily crowded the entire street, a car being repaired along the parking space, residents playing and hanging around, and the litters scattered at the street.

As we went walking along J. Trinidad Street, great dismay occurred due to worse presence of these eye-sores, as if nothing has been taught and agreed on the seminars given by the DICAMM-Experimental Research Project (please see attached photos).

Ms. Elsie Encarnacion reminded the BEM-ESTERO Team to strictly implement what they have learned in the seminars they have attended. She also emphasized that teaching the children the proper waste disposal shall instill in them this particular practice in their system, which would result to a better waste management in the future.

2. Pushcart and containers

A small pushcart was regularly used by the Barangay for their collection, which the wheels later broke down. This was lent to them by a resident for free. The Barangay has a spare, a bigger one, but it is also out of order since before they started the implementation of the Barangay Collection.

A plastic garbage container has been provided by the Barangay's City Government for their use. Due to increasing waste generation, this container is not capable to hold the entire Barangay's garbage; 5-6 additional containers will be needed.

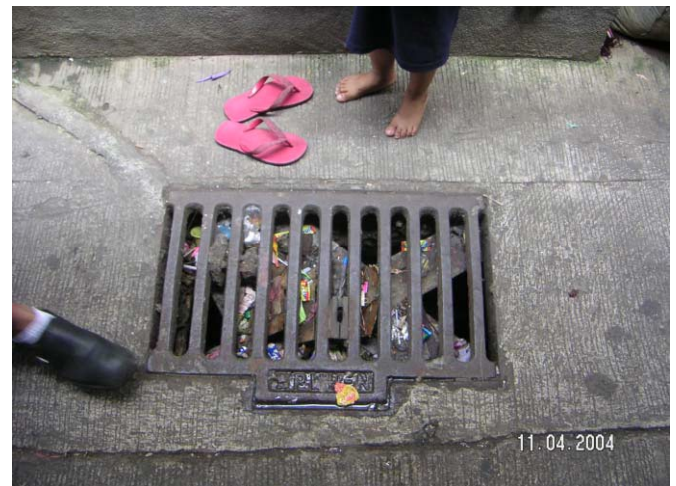
Ms. Elsie Encarnacion assured Barangay Chairman Nestor Ereño that the DICAMM-Experimental Research Project will be providing for the repair expenses and the needed paraphernalia to fulfill the implementation of the Project. According

to Barangay Chairman Nestor Ereño, they had the pushcart estimated for repair, which will cost P2,000.00, but additional pushcart is not necessary.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

PHOTOGRAPHS TAKEN DURING A SURPRISE VISIT AT BARANGAY 195



Food wrappers and other types of litters being thrown, especially by children, in the drainages along J. Trinidad Street

PHOTOGRAPHS TAKEN DURING A SURPRISE VISIT AT BARANGAY 195



Animal droppings (or human waste maybe) along J. Trinidad Street



Food wrappers scattered along J. Trinidad Street



Litters and dilapidated wood house parts along Narra Street

PHOTOGRAPHS TAKEN DURING A SURPRISE VISIT AT BARANGAY 195



Disorganized parking space along Narra Street



A part of Narra Street was being used as a car repair area

PHOTOGRAPHS TAKEN DURING A SURPRISE VISIT AT BARANGAY 195



Plastic Garbage Container provided by the City Government for Barangay use. According to Barangay Chairman Nestor Ereño and BEM-ESTERO Team, this type is much convenient in transporting the garbage to the Truck due to its right size and weight, and wheels.



Pushcart being used for Barangay Collection along J. Trinidad Street; borrowed from a resident in the Barangay



Broken pushcart to be repaired by the DICAMM-Experimental Research Project

Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

Surprise Site Visit

Purpose: Inspection on the Barangay 46's actual actions during the day

Date and Time: November 4, 2004

Venue: Barangay 46, Pasay City

Attendance: Ms. Elsie I. Encarnacion
Ms. Bridgette E. Bautista

1. Cleanliness situation of the Barangay and MRF operation

In contrary to the earlier visit, Ms. Elsie Encarnacion was delighted with the improvements shown by Barangay 46; not much crowded and the only litters on the ground were fallen leaves and flowers.

Barangay Chairman Arthur Gaylican reported to Ms. Encarnacion the Barangay's other activities and its solid waste management system including their MRF operations. The BEM-ESTERO gave us a copy of their previous records of transactions. Due to disorganized recording, Ms. Encarnacion taught the Team to record their buying transactions separately from the selling by dividing their logbook.

As Ms. Encarnacion reviewed the record, she noticed several unnecessary expenses (stationeries). She suggested to simply request these materials from Ms. Bridgette Bautista if the need arises. This is to help the Barangay save more seed money.

2. Pushcart and containers

The Barangay regularly uses a steel pushcart that collects exclusively from the households along the estero, until the wheels broke down. According to Barangay Chairman Arthur Gaylican, he already handed a letter of request of repair to Engr. Joselito Manoos. Aside from the repair of the existing pushcart, the Barangay will still need two additional pushcarts of the same size (1 meter x 2 meters).

According to Barangay Chairman Gaylican, the use of wheeled garbage containers is not necessary in their Barangay because the pushcarts are enough to directly transport the collected garbage to the Truck.

Ms. Elsie Encarnacion assured the Barangay Chairman that the DICAMM-Experimental Research Project will be providing for the repair expenses and the needed paraphernalia to fulfill the implementation of the Project.

Prepared by:

Bridgette Lorraine E. Bautista
JICA Study Team Staff

PHOTOGRAPHS TAKEN DURING A SURPRISE VISIT AT BARANGAY 46



Steel pushcart needs wheel replacement; this was recently used in the Barangay Collection regularly until the wheels broke down



Wooden pushcart needs replacement

0.3

EVALUATION OF EXPERIMENT

**RESULTS OF THE MONITORING AND EVALUATION OF THE KNOWLEDGE,
ATTITUDE, AND PRACTICE OF THE BARANGAY ENVIRONMENTAL
MANAGEMENT ORGANIZING EXPERIMENTAL STUDY**

JULY - DECEMBER 2004

RESPONDENTS PROFILE

Barangay 195, Manila City, Barangay 46, Pasay City, Barangay Palanan, Makati City

1. Age

Age	Gender			
	Male		Female	
	No.	%	No.	%
15 - 20	1	4.16	2	8.3
21 - 30	1	4.16		
31 - 40	4	16.6	7	29.16
41 - 50	1	4.16	1	4.16
51 - 60	3	12.5	1	4.16
61 - 70	3	12.5		
TOTAL	13	54.03	11	45.83

Over half (54.03) of the respondents are females while almost half (45.83%) are male. A Majority is in the productive age of 31 to 60 of age.

2. Educational Attainment

Education	Number	%
Elementary	5	20.83
High School	10	41.66
College	9	37.6
Vocational	-	-
TOTAL	24	100

Many (41.66%) of the respondents have gone to High School and College (37.6%). A few are Elementary graduates.

I. KNOWLEDGE

There were five questions asked of the participants regarding their knowledge about the BEM-ESTERO

Questions:

1. What is the meaning of BEM- ESTERO?
2. What are the duties of the BEM?
3. What are the duties of the ESTERO members?
4. What is the importance of the BEM- ESTERO in the Barangay?
5. What are the focal points of the BEM-ESTERO

Total Number of Respondents 24

Q	Barangay 195, Manila		Barangay 46, Pasay City		Barangay Palanan, Makati City	
	W/ ans.	No ans.	W/ ans.	No ans.	W/ ans.	No ans.
1	8		8		8	
2	8		6	2	8	
3	8		6	2	8	
4	8		6	2	8	
5	8		6	2	8	

All of the participants except two (2) from Barangay 46, answered the five (5) questions. (See attached summary of answers ANNEX O.1). The answers they gave indicated their full knowledge of the experimental study which they have learned from the workshop.

II. ATTITUDE

1. **The formation of BEM-ESTERO Experimental Study will not contribute to the welfare of the Barangay.**

Respondent	LS	S	WM	HS	LHS	Total
Barangay 195	3	0	0	1	4	7
Barangay 46	4	0	0	3	1	8
Barangay Palanan	0	0	0	2	6	8
Total	7	0	0	6	11	24
Percentage	29.2%	0%	0%	25%	45.8%	100%

Legend

LS – Lubos na Sumasang-ayon (*Strongly Agree*)

S – Sumasang-ayon (*Agree*)

WM – Walang Masabi (*No Comment*)

HS – Hindi Sumasang-ayon (*Disagree*)

S – Sumasang-ayon (*Agree*)

LHS – Lubos na Hindi Sumasang-ayon (*Strongly Disagree*)

Almost half (45.8%) strongly disagree with the statement, while some (29.2%) agreed.

2. **The BEM-ESTERO, in order to help in the Barangay, should have the same understanding, united and supportive of the Barangay Administration.**

Respondent	LS	S	WM	HS	LHS	Total
Barangay 195	7	0	0	0	1	8
Barangay 46	7	1	0	0	0	8
Barangay Palanan	8	0	0	0	0	8
Total	22	1	0	0	1	24
Percentage	91.6%	4.2%	0%	0%	4.2%	100%

Legend

LS – Lubos na Sumasang-ayon (*Strongly Agree*)
 S – Sumasang-ayon (*Agree*)
 WM – Walang Masabi (*No Comment*)
 HS – Hindi Sumasang-ayon (*Disagree*)
 S – Sumasang-ayon (*Agree*)
 LHS – Lubos na Hindi Sumasang-ayon (*Strongly Disagree*)

Almost all (91.1%) agreed with the statement

3. **Creation of Barangay Profile is not significant for distinguishing the real situation of the Barangay.**

Respondent	LS	S	WM	HS	LHS	Total
Barangay 195	3	0	0	3	2	8
Barangay 46	4	1	0	2	1	8
Barangay Palanan	0	0	0	6	2	8
Total	7	1	0	11	5	24
Percentage	29.2%	4.2%	0%	45.8%	20.8%	100%

Legend

LS – Lubos na Sumasang-ayon (*Strongly Agree*)
 S – Sumasang-ayon (*Agree*)
 WM – Walang Masabi (*No Comment*)
 HS – Hindi Sumasang-ayon (*Disagree*)
 S – Sumasang-ayon (*Agree*)
 LHS – Lubos na Hindi Sumasang-ayon (*Strongly Disagree*)

Almost-half disagree with the statement with a few strongly disagreeing.

4. **S.W.O.T. Analysis is of great help in identifying the strengths and weaknesses of the Barangay.**

Respondent	LS	S	WM	HS	LHS	Total
Barangay 195	8	0	0	0	0	8
Barangay 46	6	0	2	0	0	8
Barangay Palanan	2	6	0	0	0	8
Total	16	6	2	0	0	24
Percentage	66.7%	25%	8.3%	0%	0%	100%

Legend

LS – Lubos na Sumasang-ayon (*Strongly Agree*)
 S – Sumasang-ayon (*Agree*)
 WM – Walang Masabi (*No Comment*)
 HS – Hindi Sumasang-ayon (*Disagree*)
 S – Sumasang-ayon (*Agree*)
 LHS – Lubos na Hindi Sumasang-ayon (*Strongly Disagree*)

A great majority (66.7%) strongly agree with the statement while only some agreeing.

5. **Preparation of Barangay Environmental Management Plan is a necessity for each Barangay.**

Respondent	LS	S	WM	HS	LHS	Total
Barangay 195	7	1	0	0	0	8
Barangay 46	8	0	0	0	0	8
Barangay Palanan	2	6	0	0	0	8
Total	17	7	0	0	0	24
Percentage	70.8%	29.2%	0%	0%	0%	100%

Legend

LS – Lubos na Sumasang-ayon (*Strongly Agree*)
 S – Sumasang-ayon (*Agree*)
 WM – Walang Masabi (*No Comment*)
 HS – Hindi Sumasang-ayon (*Disagree*)
 S – Sumasang-ayon (*Agree*)
 LHS – Lubos na Hindi Sumasang-ayon (*Strongly Disagree*)

A great majority or 70.8% strongly agree with the statement.

Almost all of the BEM-ESTERO members display a positive attitude towards the process they experienced in the training and implementation of the BEM-ESTERO experimental project. Very influential to this, was the manner on how the project was implemented particularly the different concepts and skills they learned in context of their environment and experiences. Although few have ambivalent attitudes the total impact of the BEM-ESTERO activities to the Barangay has made a difference in their lives and particularly their environment.

III. PRACTICE

This section of the evaluation focuses on the behavior of the participants **Before and After practices** as related to the Barangay Environment Management Plan focal points.

1. BARANGAY 195, MANILA CITY

A. Solid Waste

1. How do you dispose your garbage?

Respo-ndent	Before BEM-ESTERO	After/During BEM-ESTERO
1	<ul style="list-style-type: none"> • Throw garbage anywhere 	<ul style="list-style-type: none"> • Put all non-recyclables in the plastic bag
2	<ul style="list-style-type: none"> • Throw garbage into the estero. • Throw litters on streets 	<ul style="list-style-type: none"> • Put all garbage in the plastic bags and brought to the truck
3	<ul style="list-style-type: none"> • Unconcerned • Uninformed • Do not know how to clean the surroundings 	<ul style="list-style-type: none"> • Informed about SWM • Refrained from throwing in the estero • Having appropriate schedule of garbage disposal • Clean Barangay
4	<ul style="list-style-type: none"> • Throw everything in the river 	<ul style="list-style-type: none"> • We now throw our garbage in the truck according to schedule
5	<ul style="list-style-type: none"> • Unconcerned • Throw in the estero • Do not know how to clean the surroundings 	<ul style="list-style-type: none"> • Throwing in the estero was lessened • Residents became concerned
6	<ul style="list-style-type: none"> • Throw garbage in the river and anywhere else 	<ul style="list-style-type: none"> • Income generation from garbage • Implementation of door-to-door garbage collection • Nobody throws garbage in the estero • The Barangay became educated of proper waste disposal
7	<ul style="list-style-type: none"> • Unconcerned • Throw in the estero • Do not know how to clean the surroundings 	<ul style="list-style-type: none"> • Throwing in the estero was lessened • Residents became concerned
8	<ul style="list-style-type: none"> • Throw everything in the river 	<ul style="list-style-type: none"> • We now throw our garbage in the truck

B. Information, Education and Communication

1. What information, education and communication strategies about the environment were you able to accomplish?

Respondent	Before BEM-ESTERO	After/During BEM-ESTERO
1	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Households are instructed to bring out their garbage before the truck arrives
2	<ul style="list-style-type: none"> • Unconcerned of the effects of improper waste disposal 	<ul style="list-style-type: none"> • Became educated of proper waste disposal to prevent all sorts of diseases through posters and brochures
3	<ul style="list-style-type: none"> • Unconcerned/Uneducated • No unity 	<ul style="list-style-type: none"> • Knowledgeable of barangay happenings • Educated about proper behavior as related to the environment
4	<ul style="list-style-type: none"> • Everyone does not care 	<ul style="list-style-type: none"> • Residents became for watchful on activities related to intervene garbage
5	<ul style="list-style-type: none"> • Unconcerned and uncooperative 	<ul style="list-style-type: none"> • Residents became more concerned about their environment. • Residents became knowledgeable about their barangay • The surroundings became clean
6	<ul style="list-style-type: none"> • Lack of correct information or education or communication 	<ul style="list-style-type: none"> • Information regarding the environmental management • Supervision of the on-going BEM-ESTERO Project • Regular dissemination of Project matters to the residents
7	<ul style="list-style-type: none"> • Unconcerned and uncooperative 	<ul style="list-style-type: none"> • Became concerned • Knowledgeable about barangay activities • The surroundings became clean
8	<ul style="list-style-type: none"> • Everyone does not care 	<ul style="list-style-type: none"> • More concern for the environment

C. Pollution Control

1. What pollution controls have you implemented?

Respondent	Before BEM-ESTERO	After/During BEM-ESTERO
1	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> None
2	<ul style="list-style-type: none"> Residents care less of pollution, they throw everything anywhere 	<ul style="list-style-type: none"> Segregation of biodegradable and non-biodegradable waste
3	<ul style="list-style-type: none"> Vehicle owners park indifferently 	<ul style="list-style-type: none"> Implementation of the laws on pollution The burning of garbage was reduced
4	<ul style="list-style-type: none"> Pans and other were being burned on streets 	<ul style="list-style-type: none"> Prohibition of anybody to burn wires or any other objects that might cause harm to the health.
5	<ul style="list-style-type: none"> The surroundings always stink 	<ul style="list-style-type: none"> Absence of unpleasant odor in the surroundings
6	<ul style="list-style-type: none"> No pollution control done 	<ul style="list-style-type: none"> Prohibition of burning on streets
7		<ul style="list-style-type: none"> Absence of unpleasant odor in the surroundings
8	<ul style="list-style-type: none"> Pans and other were being burned on streets 	<ul style="list-style-type: none"> Pleasant environment

D. Beautification and Greening

Respondent	Before BEM-ESTERO	After/During BEM-ESTERO
1	<ul style="list-style-type: none"> Planting of plants 	<ul style="list-style-type: none"> Beautify and nurture the plants, as well as tidying its pots
2	<ul style="list-style-type: none"> It was painted beforehand, but there was no poster 	<ul style="list-style-type: none"> Continuous beautification of the environment Putting on of posters about the environment
3	<ul style="list-style-type: none"> No posters 	<ul style="list-style-type: none"> Have posters Beautification enhancement of streets and plants
4	<ul style="list-style-type: none"> The area has been beautiful and clean even before but was not sustained 	<ul style="list-style-type: none"> The beauty of our Barangay was enhanced
5	<ul style="list-style-type: none"> Few streetlights Few plants around the Barangay 	<ul style="list-style-type: none"> Additional lights and plants
6	<ul style="list-style-type: none"> Cleaning the surroundings 	<ul style="list-style-type: none"> Cleanliness was improved and continuous encouragement to the Barangay to plant additional flowering plants
7	<ul style="list-style-type: none"> Few streetlights Few plants around the Barangay 	<ul style="list-style-type: none"> There were additional lights and plants
8	<ul style="list-style-type: none"> The area has been beautiful and clean even before 	<ul style="list-style-type: none"> The beauty of our Barangay is enhanced

2. BARANGAY 46, PASAY CITY

A. Solid Waste

1. How do you dispose your garbage?

Respo-ndent	Before BEM-ESTERO	After/During BEM-ESTERO
1	<ul style="list-style-type: none"> • Throw garbage in the river 	<ul style="list-style-type: none"> • Garbage is gathered by the Barangay Pushcart
2	<ul style="list-style-type: none"> • Pile the garbage without segregation 	<ul style="list-style-type: none"> • Wait for the Barangay Garbage Collector to gather the biodegradable and bring the recyclables to the MRF, which is segregated and sold by the Barangay associations
3	<ul style="list-style-type: none"> • Mix biodegradable and non-biodegradable wastes altogether without segregation 	<ul style="list-style-type: none"> • Segregate the biodegradable wastes in a plastic • Segregate the non-biodegradable wastes and brought to the MRF to be sold per kilogram
4	<ul style="list-style-type: none"> • Garbage is thrown into the river, on the streets, in the truck, sometimes in the pushcart 	<ul style="list-style-type: none"> • The biodegradable wastes go to pushcart, the non-biodegradable wastes and recyclables are brought to the MRF
5	<ul style="list-style-type: none"> • Put all together and throw in the river 	<ul style="list-style-type: none"> • Segregate wastes, the biodegradable and non-biodegradable wastes like bottles, empty cans, and plastics
6	<ul style="list-style-type: none"> • Mixed garbage in a single container 	<ul style="list-style-type: none"> • Waste materials are segregated
7	<ul style="list-style-type: none"> • We put it in a plastic and throw it in the pushcart 	
8	<ul style="list-style-type: none"> • We put it in a plastic and throw it in the pushcart 	

B. Information, Education and Communication

1. What information, education and communication on environment were you able to accomplish?

Respondent	Before BEM-ESTERO	After/During BEM-ESTERO
1		<ul style="list-style-type: none"> • Meetings were organized with the Leaders of all organizations in the Barangay • Visits to homeowners and taught them how to properly manage their garbage
2	<ul style="list-style-type: none"> • Contact the associations for a scheduled meeting on cleanliness and noise 	<ul style="list-style-type: none"> • The residents are now aware that the BEM-ESTERO is supported by JICA, making it more credible
3	<ul style="list-style-type: none"> • The Barangay Administration notifies the residents on cleanliness, but there is no actual action 	<ul style="list-style-type: none"> • People became aware of cleanliness in the surroundings, importance of pollution control and implementation • It enlightened the residents of the fact that this project is significant in making the barangay a better place to live in
4		<ul style="list-style-type: none"> • Posted wall news provided the community people appropriate information
5	<ul style="list-style-type: none"> • Lack of unity among the people on what should be done for cleanliness 	<ul style="list-style-type: none"> • With the help of the BEM-ESTERO, the people learned to give importance and properly manage garbage
6	<ul style="list-style-type: none"> • Lack of information, and evident or heard actions 	<ul style="list-style-type: none"> • Information dissemination with the help of DPWH, JICA, MMDA
7		
8		

C. Pollution Control

1. What pollution controls have you implemented?

Respondent	Before BEM-ESTERO	After/During BEM-ESTERO
1	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Implementation of the City Ordinances on Pollution Control
2	<ul style="list-style-type: none"> The throwing of burned garbage in to the river 	<ul style="list-style-type: none"> Burning garbage is prohibited, all the Barangay Garbage are collected
3	<ul style="list-style-type: none"> Vehicles with dirty mufflers are instructed to have it cleaned and we give warning if it makes noise 	<ul style="list-style-type: none"> Violators are penalized Permits are required for any machine operations to prevent possible problems
4	<ul style="list-style-type: none"> Clean Air Act and Noise Pollution not implemented 	<ul style="list-style-type: none"> Implementation of Clean Air Act and Noise Pollution
5	<ul style="list-style-type: none"> Burning of garbage on the streets 	<ul style="list-style-type: none"> Burning of garbage and rubber are prohibited in the streets
6	<ul style="list-style-type: none"> Unconcerned, ignorant of the law 	<ul style="list-style-type: none"> Watch for people burning any kinds of garbage and tuning in disturbing loud music
7		<ul style="list-style-type: none"> Our Barangay is beautiful and orderly
8		<ul style="list-style-type: none"> Pleasant environment

D. Beautification and Greening

Respondent	Before BEM-ESTERO	After/During BEM-ESTERO
1	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Cleaning the surroundings
2	<ul style="list-style-type: none"> Plants were already there improper parking Regular repainting of wall 	<ul style="list-style-type: none"> Additional planting Volunteer ladies are scheduled to clean
3	<ul style="list-style-type: none"> Personal planting Painting of wall 	<ul style="list-style-type: none"> Informed that everybody should put plants in each house, and paint and beautify the Barangay
4		<ul style="list-style-type: none"> Formation of Ladies Auxiliary Brigade, associate of the BEM-ESTERO in the implementation of cleanliness and order in the Barangay
5	<ul style="list-style-type: none"> Dirty streets 	<ul style="list-style-type: none"> Learned to clean their front yards
6	<ul style="list-style-type: none"> Pay less attention to the beautification of the environment 	<ul style="list-style-type: none"> Coordination on the beautification of the surrounding and painting of walls
7		
8		

3. BARANGAY PALANAN, MAKATI CITY

A. Solid Waste

1. How do you dispose your garbage?

Respo-ndent	Before BEM-ESTERO	After/During BEM-ESTERO
1	<ul style="list-style-type: none"> Bring out the garbage even if the truck has not yet arrived 	<ul style="list-style-type: none"> Now, garbage are brought out only whenever the truck has arrived
2	<ul style="list-style-type: none"> Garbage is thrown in the river and scattered everywhere 	<ul style="list-style-type: none"> Garbage is prevented from being thrown in the river, we wait for the garbage truck instead People sweep litters to prevent scattering
3	<ul style="list-style-type: none"> Sometimes garbage is thrown on the streets or in the river if there is no container in sight Bring out the garbage even if the truck has not yet arrived 	<ul style="list-style-type: none"> Refrained from throwing garbage on streets and in the river, instead, they throw it in the garbage containers Segregated garbage are being brought out only whenever the truck is there (biodegradable and non-biodegradable)
4	<ul style="list-style-type: none"> Garbage thrown in to the river and on the streets No discipline in throwing of garbage 	<ul style="list-style-type: none"> Discipline in throwing of garbage was inculcated on the residents
5	<ul style="list-style-type: none"> Bring out the garbage any time 	<ul style="list-style-type: none"> Garbage are brought out only on schedule
6	<ul style="list-style-type: none"> Garbage are thrown into the river and scattered everywhere 	<ul style="list-style-type: none"> Garbage is thrown when the garbage truck arrives People clean the litters in-front of their houses
7	<ul style="list-style-type: none"> People throw litter into the estero if there is no container in sight People bring out garbage anytime 	<ul style="list-style-type: none"> Refrained from throwing garbage on streets and in the river, instead, they throw it in the garbage containers Garbage are being brought out segregated (biodegradable and non-biodegradable)
8	<ul style="list-style-type: none"> Thrown in to the river and on the streets No discipline in throwing of garbage 	<ul style="list-style-type: none"> Discipline in throwing of garbage was inculcated

B. Information, Education and Communication

1. What information, education and communication on environment were you able to accomplish?

Respondent	Before BEM-ESTERO	After/During BEM-ESTERO
1	<ul style="list-style-type: none"> • Inform the residents about the meetings in the Barangay 	<ul style="list-style-type: none"> • We doubled the efforts in informing the residents about the activities in the Barangay
2	<ul style="list-style-type: none"> • The Barangay holds meetings to inform the residents and posted information on walls 	<ul style="list-style-type: none"> • People are informed personally, which makes them understand easier all about order in the environment
3	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Give out leaflets & handouts to the people • Put posters on houses regarding proper waste disposal and its importance
4	<ul style="list-style-type: none"> • Ignores and lets it be 	<ul style="list-style-type: none"> • Monitoring Communication dissemination
5	<ul style="list-style-type: none"> • Inform the residents about the meetings in the Barangay 	<ul style="list-style-type: none"> • Intensive effort in informing the residents about the activities in the Barangay
6	<ul style="list-style-type: none"> • The Barangay holds meetings to inform the residents and posted information on walls 	<ul style="list-style-type: none"> • People are informed individually, which makes them understand easier all about order in the environment
7	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Give out leaflets to the people • Display posters on houses regarding proper waste disposal and its importance
8	<ul style="list-style-type: none"> • Ignores and lets it be 	<ul style="list-style-type: none"> • Monitoring Communication dissemination

C. Pollution Control

1. What pollution controls have you implemented?

Respo-ndent	Before BEM-ESTERO	After/During BEM-ESTERO
1	<ul style="list-style-type: none"> Prohibiting garbage burning alongside of the streets 	<ul style="list-style-type: none"> We became more strict in prohibiting painting of vehicles alongside of the streets
2	<ul style="list-style-type: none"> Prohibit burning of waste on sidewalks 	<ul style="list-style-type: none"> Cleaner surroundings
3	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Warned the people that garbage burning is not allowed
4	<ul style="list-style-type: none"> Garbage thrown on streets are being burned 	<ul style="list-style-type: none"> People refrained from polluting the environment
5	<ul style="list-style-type: none"> Prohibiting garbage burning alongside of the streets 	<ul style="list-style-type: none"> Activities causing pollution in the community has been banned.
6	<ul style="list-style-type: none"> Prohibit burning on sidewalks 	<ul style="list-style-type: none"> Cleaner surroundings
7	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Imposition of the Clean Air Act
8	<ul style="list-style-type: none"> Garbage thrown on streets are being burned 	<ul style="list-style-type: none"> People police their community on violators of the Clean Air Act

D. Beautification and Greening

Respo-ndent	Before BEM-ESTERO	After/During BEM-ESTERO
1	<ul style="list-style-type: none"> Sidewalks and the estero are dirty 	<ul style="list-style-type: none"> Sidewalks are clean, side walks are painted, and potted plant are placed
2	<ul style="list-style-type: none"> Others have planted ornamental plants 	<ul style="list-style-type: none"> Daily cleaning
3	<ul style="list-style-type: none"> We already have Projects on Beautification 	<ul style="list-style-type: none"> Continued the existing Projects and hired additional cleaners
4	<ul style="list-style-type: none"> Unconcerned towards one another 	<ul style="list-style-type: none"> Sidewalks and the estero are clean
5	<ul style="list-style-type: none"> Sidewalks and the estero are dirty 	<ul style="list-style-type: none"> Sidewalks are planted with flowering plants
6	<ul style="list-style-type: none"> Growing ornamental plants 	<ul style="list-style-type: none"> Organized cleaning of the community
7	<ul style="list-style-type: none"> Projects on Beautification not implemented 	<ul style="list-style-type: none"> Implementation of beautification Projects
8	<ul style="list-style-type: none"> Unconcerned towards one another 	<ul style="list-style-type: none"> Sidewalks and the estero are clean

IV. FUTURE PLANS

1. BARANGAY 195, MANILA CITY

Respondent	Answer
1	To extend project.
2	Hopefully, the activities for the environment will be uninterrupted and more information be learned from one another
3	To continue what we have learned and do what should be done from the start
4	To continue what we have learned for the benefit of our Barangay and for me to be more active in supervising
5	To continue what we have learned and started
6	To continue what have been started
7	To continue what we have learned and started
8	To continue what we have learned for the benefit of our Barangay and for me to be more active in supervising

2. BARANGAY 46, PASAY CITY

Respondent	Answer
1	To continue what has been started as BEM-ESTERO.
2	To continue the project because it has benefited the Barangay a lot
3	To continue what we started in the project
4	If we are relocated we will continue and transmit our knowledge from the Experimental Study of JICA to Imus, Cavite in order for us to establish a Barangay that will be a better place for us and our children in our future Barangay
5	To continue the beautification we have started in the Barangay
6	To gain broader knowledge and to accomplish being a Model Barangay by sharing our knowledge to nearby Barangays
7	To sustain the BEM-ESTERO in our Barangay and to teach the other residents the benefit of the project.
8	To encouraged others to coordinate with BEM-ESTERO in our Barangay so they will realize value of a clean and livable environment.

3. BARANGAY PALANAN, MAKATI CITY

Respondent	Answer
1	We will continue and teach other Barangays to preserve the estero because Barangay Palanan is a Model in entire Makati
2	To continue what we have started regarding cleanliness and order in the Barangay
3	I hope for this Project to be implemented and to continue the activities of the BEM-ESTERO to other Barangays in order to nurture the environment
4	I wish for all the plans of JICA to push through so it would provide the residents in the stinky area better place to live in
5	We will continue and teach other Barangays to preserve the estero because Barangay Palanan is a Model in entire Makati
6	To continue what we have started regarding cleanliness and order in the Barangay
7	I hope for this Project to be implemented and to continue the activities of the BEM-ESTERO to other Barangays in order to nurture the environment
8	I wish for all the plans of JICA to push through so it would provide the residents in the stinky area better place to live in

ANNEX O.1

SUMMARY OF ANSWERS FOR EXPERIMENT

**MONITORING AND EVALUATION OF THE KNOWLEDGE, ATTITUDE,
PRACTICE OF THE BARANGAY ENVIRONMENTAL MANAGEMENT PLAN
EXPERIMENTAL STUDY**

**Summary of Answers
Barangay 195, City of Manila
December 8, 2004**

I. KNOWLEDGE

1. Ano ang ibig sabuhin ng BEM-ESTERO?
(*What does BEM-ESTERO mean?*)

Respondent	Answer
1	Barangay Environmental Management
2	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
3	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
4	Barangay Estero Member and Barangay Environmental Management
5	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
6	Barangay Environmental Management, Study Implementation
7	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
8	Barangay Estero Member and Barangay Environmental Management

2. Ano ang gawain ng BEM? (*What are the roles of the BEM?*)

Respondent	Answer
1	To teach proper management of garbage
2	To supervise the Team ESTERO Members and to safeguard the environment
3	The Manager of the Team ESTERO who supervises its Members
4	Nurtures the estero and the environment
5	To supervise the Team ESTERO Members and to safeguard the environment
6	To teach the residents about cleanliness and correct waste segregation
7	To supervise the Team ESTERO Members and to safeguard the environment
8	Nurtures the estero and the environment

3. Ano ang gawain ng ESTERO members?
(What are the roles of the ESTERO Members?)

Respondent	Answer
1	To clean in the Barangay
2	To nurture the environment and the estero to prevent waste disposal in the surroundings
3	To teach and support our fellow-residents and to do the tasks assigned to each of us
4	Each member reminds their neighbors to only throw their garbage in the Leonel Truck, not in the estero
5	To nurture the environment and the estero to prevent waste disposal in the surroundings
6	Observe our fellow-residents' participation in the Project
7	To nurture the environment and the estero to prevent waste disposal in the surroundings
8	Each member reminds their neighbors to only throw their garbage in the Leonel Truck, not in the estero

4. Ano ang kahalagahan ng BEM-ESTERO sa Barangay?
(What is the importance of BEM-ESTERO in the Barangay?)

Respondent	Answer
1	To help attain cleanliness in the Barangay
2	Cooperation of one another to prevent scattering of garbage in the surroundings for the beautification of the entire community
3	Cooperation of one another to prevent waste disposal in the estero and anywhere else
4	The BEM-ESTERO supervises their fellow-residents in attaining cleanliness
5	Cooperation of one another to prevent scattering of garbage in the surroundings for the beautification of the environment
6	It helped in the Barangay residents' awareness regarding cleanliness and order in the environment
7	Cooperation of one another to prevent scattering of garbage in the surroundings for the beautification of the environment
8	The BEM-ESTERO supervises their fellow-residents in attaining cleanliness

5. Ano ang mga focal points ng BEM-ESTERO?
(What are the focal points of the BEM-ESTERO?)

Respondent	Answer
1	To reduce mounds of garbage
2	IEC, Solid Waste, Pollution Control, Beautification and Greening
3	IEC, Solid Waste, Pollution Control, Beautification and Greening
4	To watch over violators who throw garbage on inappropriate areas and who burn wires, Clean and Green, Drainage and Pollution
5	IEC, Solid Waste, Pollution Control, Beautification and Greening
6	Pollution, Beautification Clean and Green, IEC
7	IEC, Solid Waste, Pollution Control, Beautification and Greening
8	To watch over violators who throw garbage on inappropriate areas and who burn wires, Clean and Green, Drainage and Pollution

Summary of Answers
Barangay Palanan, Makati City
December 9, 2004

I. KNOWLEDGE

1. Ano ang ibig sabuhin ng BEM-ESTERO?
(What does BEM-ESTERO mean?)

Respondent	Answer
1	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
2	Barangay Environmental Management
3	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
4	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
5	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
6	Barangay Environmental Management
7	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
8	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing

2. Ano ang gawain ng BEM? *(What are the roles of the BEM?)*

Respondent	Answer
1	A Leader who plans the cleanliness of the estero
2	To help and to develop knowledge on the importance of Barangay Environmental Management
3	Plan activities in relation to environment: <ul style="list-style-type: none"> ➤ Systematic waste disposal ➤ Beautification of the surroundings ➤ Broadcasting of information to the people ➤ Prevent any sorts of pollution
4	Establish cleanliness and beauty to our environment
5	A Leader who plans the cleanliness of the estero
6	To help and to develop knowledge on the importance of Barangay Environmental Management
7	Plan activities in relation to environment: <ul style="list-style-type: none"> ➤ Systematic waste disposal ➤ Beautification of the surroundings ➤ Broadcasting of information to the people ➤ Prevent any sorts of pollution
8	Establish cleanliness and beauty to our environment

3. Ano ang gawain ng ESTERO members?
(What are the roles of the ESTERO Members?)

Respondent	Answer
1	Follow the plans of the BEM and watch for violators throwing garbage in the river
2	Coordinate with the people affected by this
3	The Core Group who monitors the activities or plans formulated by the BEM
4	Monitor the cleanliness of the estero, if there are no garbage thrown
5	Follow the plans of the BEM and watch for violators throwing garbage in the river
6	Coordinate with the people affected by this
7	The Core Group who monitors the activities or plans formulated by the BEM
8	Monitor the cleanliness of the estero, if there are no garbage thrown

4. Ano ang kahalagahan ng BEM-ESTERO sa Barangay?
(What is the importance of BEM-ESTERO in the Barangay?)

Respondent	Answer
1	Accomplished the cleanliness in the Barangay and taught us how to implement the laws as the BEM
2	A model initiating the order and cleanliness in the entire Barangay, not only in the estero
3	Guide or monitor in the Barangay for the systematic compliance of RA 9003 and also gives information to the people
4	It aided in the cleanliness of the surroundings
5	Accomplished the cleanliness in the Barangay and taught us how to implement the laws as the BEM
6	A model initiating the order and cleanliness in the entire Barangay, not only in the estero
7	Guide or monitor in the Barangay for the systematic compliance of RA 9003 and also gives information to the people
8	It aided in the cleanliness of the surroundings

5. Ano ang mga focal points ng BEM-ESTERO?
(What are the focal points of the BEM-ESTERO?)

Respondent	Answer
1	IEC, Solid Waste, Pollution Control, Clean and Green, Beautification
2	Clean and Green Beautification, Pollution Control, Solid Waste
3	Solid Waste, IEC, Beautification and Greening, Pollution Control
4	Solid Waste, IEC, Pollution Control, Beautification and Greening
5	IEC, Solid Waste, Pollution Control, Clean and Green, Beautification
6	Clean and Green Beautification, Pollution Control, Solid Waste
7	Solid Waste, IEC, Beautification and Greening, Pollution Control
8	Solid Waste, IEC, Pollution Control, Beautification and Greening

Summary of Answers
Barangay 46, Pasay City
December 9, 2004

I. KNOWLEDGE

1. Ano ang ibig sabuhin ng BEM-ESTERO?
(What does BEM-ESTERO mean?)

Respondent	Answer
1	Barangay Environment Management Estero, Renewal, Stragic, Task For Estero, Renewal, Organization
2	Mas nakakabuti sa Barangay dahil nakatulong sa kalinisan
3	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
4	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
5	Barangay Environmental Management Environmental Strategic Task Estero Renewal Organization
6	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
7	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing
8	Barangay Environmental Management Environmental Strategic Task for Estero Renewal Organizing

2. Ano ang gawain ng BEM? *(What are the roles of the BEM?)*

Respondent	Answer
1	To monitor the activities of the Team ESTERO
2	To invite the residents to attend dialogues of the Barangay
3	Manages the members of the Estero Working Force and the Leader of the Barangay Estero Members
4	Manages the responsibilities of the ESTERO Team
5	Manages the cleanliness or clean-up of the canal, river and surroundings
6	Manages the problems, welfare of the Barangay, examines the problems of the estero canal
7	*no answer*
8	*no answer*

3. Ano ang gawain ng ESTERO members?
(What are the roles of the ESTERO Members?)

Respondent	Answer
1	To monitor and implement proper treatment on garbage, environment and river
2	Supervise the residents' participation by making rounds for cleanliness
3	The ESTERO Members have individual responsibilities like the four focal points: IEC, Clean and Green-Pollution
4	The ESTERO Members are the ones working on and implementing the Project in the Barangay
5	Assists and manages in guarding violators who throws garbage in the river and canal
6	Coordinate with the BEM's plans regarding the problems caused by flooding in the Barangay
7	*no answer*
8	*no answer*

4. Ano ang kahalagahan ng BEM-ESTERO sa Barangay?
(What is the importance of BEM-ESTERO in the Barangay?)

Respondent	Answer
1	Taught how to properly manage the garbage, river and the environment
2	It helped a lot on the cleanliness of the Barangay; the residents were disciplined; waste disposal in the estero was reduced, the Barangay Garbage Collector collects it
3	Gave information to the people about garbage, recycling of biodegradable and non-biodegradable, prohibiting garbage disposal in the estero or river, and teaching the residents about cleanliness in the surroundings and information on pollution
4	Since the formation of the BEM-ESTERO, the residents became systematic with their garbage and was reduced, and the people learned all these because of JICA, DPWH, and MMDA's assistance
5	Very important because the environment and beauty of our Baragnay was nurtured
6	Gave information on RA 9003 Waste Segregation
7	n.a.
8	n.a.

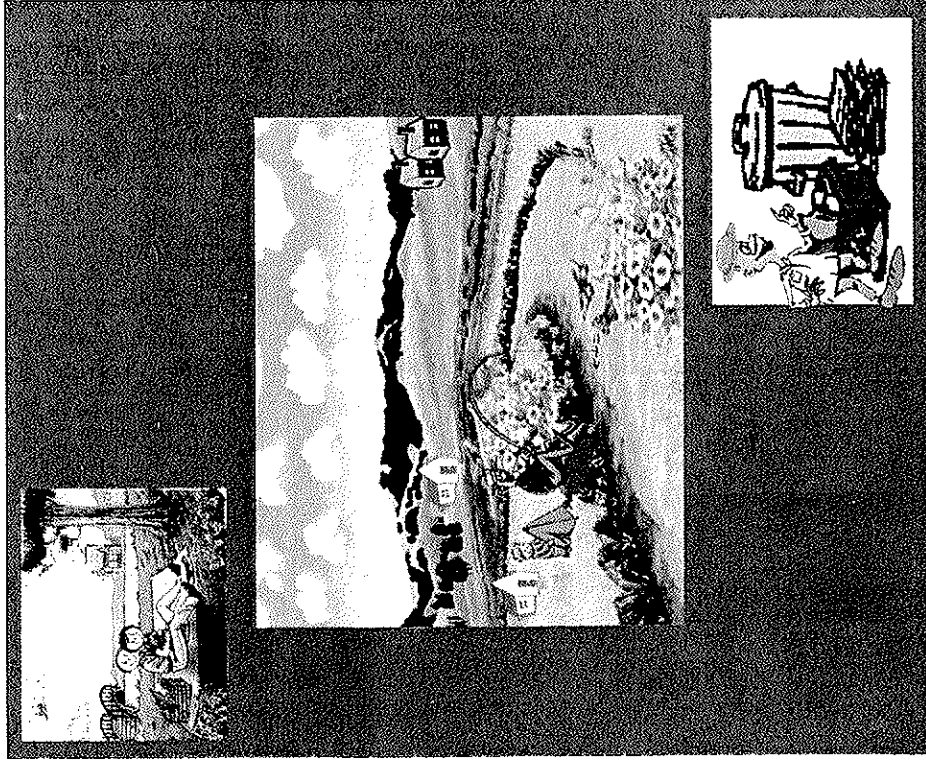
5. Ano ang mga focal points ng BEM-ESTERO?
(What are the focal points of the BEM-ESTERO?)

Respondent	Answer
1	IEC, Solid Waste Management, Clean and Green, Pollution Control
2	Rounds in the Barangay for cleanliness
3	IEC, Waste Management, Beautification and Greening, Pollution
4	IEC, Solid Waste Management: the proper waste disposal or segregation, Beautification and Greening, Pollution Control
5	Device more strategies for the progress of the motivation we have begun
6	IEC: dialogues with the homeowners associations and posting of wall news; Solid Waste Management: RA 9003, difference of non-biodegradable at biodegradable and operating an MRF; Clean and Green Beautification: <i>“Tapat ko, Linis ko” Campaign</i> and painting of wall; Pollution Control: laws and negative effects on health and environment
7	n.a
8	n.a

ANNEX O.2

PAMPHLET FOR BARANGAY SOLID WASTE MANAGEMENT

*Pangangasiwa
ng Kapaligiran*



sa Barangay

2005

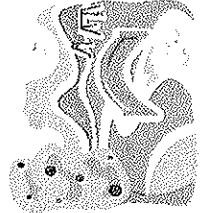
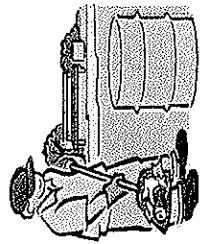
PANGANGASIWA NG KAPALIGIRAN SA BARANGAY



Sa karaniwang kahulugan, ang kapaligiran ay ang abot-paligid ng isang tao sa kaniyang pamayanan o barangay.

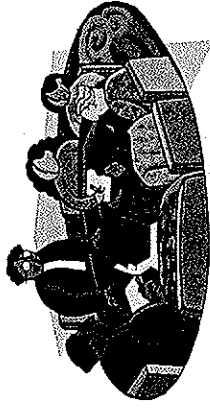
May kinalaman ang mga pang-araw-araw na gawain ng tao sa kalagayan ng kapaligiran na mayroon ding kaugnayan sa buhay ng mga nakatira dito. Nagbubunga rin ito ng polusyon sa hangin, polusyon sa tubig at polusyon sa lupa na nagdudulot ng sakit sa tao at ng ikasasagwa ng isang lugar.

Ang babasahing ito ay may layuning makapagbigay ng pag-uunawa at ilang pamamaraan sa pagpapanatili ng kalinisan at kalagayang kayaaya sa barangay.



MGA HAKBANG SA TAMANG PANGANGASIWA NG KAPALIGIRAN

Magpulong ang Konseho ng Barangay at pag-usapan ang kapaligiran.

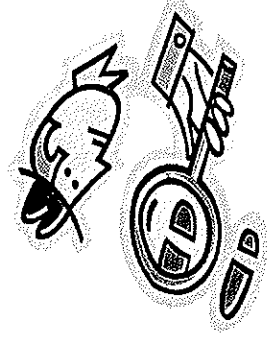


Magkaroon ng pangkalahatang pag-uunawa sa kalagayan ng kapaligiran ng Barangay.

Ø Ano ang mga kaaya-ayang nakikita sa kapaligiran?

Ø Ano ang mga problema sa kapaligiran?

- Magpasiya na gumawa ng mga hakbang upang lutasin ang mga problema.
- Gumawa ng praktikal na programa o listahan ng mga dapat gawin ng pamayanan.
- Ipaalam ang programa sa pamayanan at hikayatín ang partisipasyon ng bawat isa.
- Pag-usapan ang resulta ng programa.
- Baguhin ang ilang bagay sa programa kung kinakailangan.

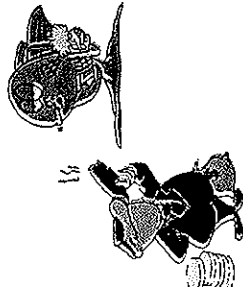


MGA DAPAT GAWIN O IWASAN

1

Panatiliing presko ang hangin!

- ✦ Huwag sunugin ang basura.
- ✦ Itigil o iwasan ang paninigarilyo sa pampublikong lugar o sa mataong lugar.
- ✦ Sundin ang mga alituntunin ukol sa Anti-Smoke Belching ng mga sasakyan.



2

Ibalik ang yaman ng ilog!

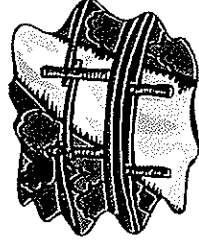
- ✦ Huwag itápon sa estero ang sumusunod:
 - basura
 - langis
 - mga sirang muwebles.
- ✦ Gamitin ang tamang palikuran, huwag sa daluyan ng tubig.



3

Iwasan ang pagbaha!

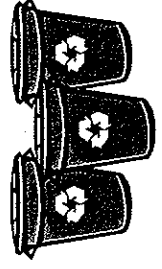
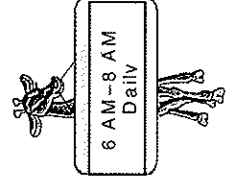
- ✦ Panatiliing malinis at hindi barado ang tubig daluyan (canal at street drainage) para maiwasan ang pagbaha.



4

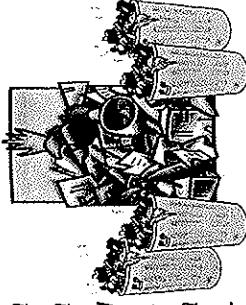
Gawing "Pook Kalinisan" ang Barangay!

- ✦ Huwag magkalat.
- ✦ Ilagay sa supot o tamang lalagyanan ang pinagbukod-bukod na basura at ilabas lamang ito sa tamang oras ng pagkokolekta.
- ✦ Walisin at alisin ang kalat sa kalye, bangketa, kanal at estero.
- ✦ Bantayan ang alagang hayop para maiwasan ang pagdumi nito sa kalye at bangketa.



ANO ANG SOLID WASTE O BASURA?

Ang **SOLID WASTE** o **BASURA** ay ang lahat ng kailangan nang itapon na hindi kanais-nais mula sa mga kabahayan, establisimentong komersiyal, mga nawalis sa kalsada, tira ng kontruksyon, agrikultura, at iba pang di-mapanganib at di-nakakalasang basura.

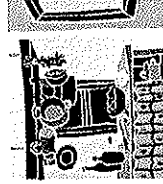
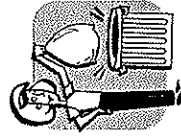


ECOLOGICAL SOLID WASTE MANAGEMENT (Tamang Pangangasiwa ng Basura)

Ang **ECOLOGICAL SOLID WASTE MANAGEMENT** ay ang maayos na pangangasiwa sa mga gawaing susuporta sa pagbubukod-bukod ng basura sa mga kabahayan, hiwalay na pangongolekta, tamang imbakan ng basura, paglipat, pagproseso, pagpapasunod, at pagtapon ng basura na at lahat ng iba pang gawain ukol sa tamang pangangasiwa ng basura na siyang hindi nagdudulot ng panganib sa kalikasan.

Ang tamang pangangasiwa ng basura ay dapat na nagsisimula sa mga kabahayan.

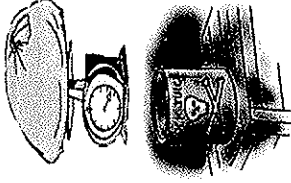
Ang pangangasiwa ng mga kagamitang hindi na mapapakinabangan sa kabahayan ay karaniwang inilalabas ng mga katulong o ng mga may-bahay. Gayun pa man, sapat dapat ang kaniyang kaalaman ukol sa tamang pangangasiwa ng basura.



ANG 3 Rs NG ECOLOGICAL SOLID WASTE MANAGEMENT (TAMANG PANGANGASIWA NG BASURA)

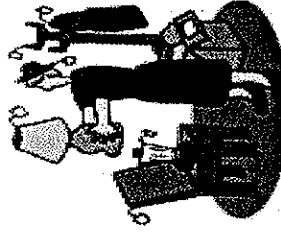
REDUCE

- ▲ Iwasan ang paggamit ng di kailangan o sobrang pambalot.
- ▲ Iwasan ang paggamit ng mga bagay na maaring magdulot ng mapanganib na basura.



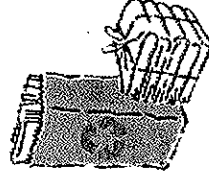
REUSE

- ▲ Gamitin muli ang mga bagay na may silbi pa o maari pang pakinabangan.
- ▲ Pangalagaan ang mga gamit at sikaping ayusin ang mga sirang gamit.
- ▲ Gamitin muli ang mga supot, containers at iba pang bagay na maaari pang magamit.
- ▲ Manghiram, umupa o makibahagi ng mga bagay na hindi naman malimit gamitin.
- ▲ Ipagbili o ipamigay ang mga lumang gamit sa halip na itapon.



RECYCLE

- ▲ Piliin ang mga bagay na pwedeng i-recycle upang mai-recycle o magamit sa ibang paraan.
- ▲ Pumiil ng mga bagay na gawa sa recyclable materials.
- ▲ Magkompost o gawing palaba sa mga lupa, panis na pagkain at iba pang nabubulok na basura. Huwag sunugin.

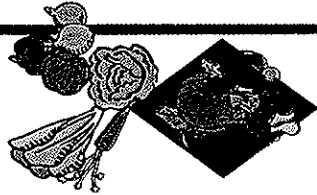


URI NG BASURA SA LOOB NG BAHAY

Nabubulok na Basura

Basurang mula sa kusina

- tira o panis na pagkain
- balat ng prutas o gulay
- mga bufo ng prutas at gulay



Basurang mula sa bakuran

- dahon
- sanga
- damo (weeds)
- bulaklak
- ugat
- dumi ng hayop

Basurang mula sa hayop

Di-nabubulok na Basura

Bakal
Bote
Goma
Papel/Karton

Tela
Tuyong balat (leather)/balahibo (feathers)
Hard shells
Plastik

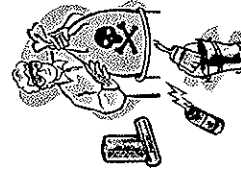
Hindi Maaaring I-recycle/Residual

Sanitary Napkins
Diapers
Gamit/Sirang basahan

Seramiko
Tetrapak
Pinagbalatan ng kendi

Mapanganib na Basura/Hazardous

Pintura
Thinner
Bateria
Lata ng Ispray
Lumang gulong
Sirang gamit na de-koryente tulad ng radyo, stereo, tv, kalan, ref, at washing ma chine



MGA PAMAMARAAN SA TAMANG PANGANGASIWA NG BASURA

1. Paghiwa-hiwalayin na ang mga basura sa pinagmulan pa lamang. Nararapat na alam ng bawat miyembro ng pamilya kung saan ilalagay ang mga basurang nabubulok, di-nabubulok, recyclable at mapanganib. Ito ang segregation at source.



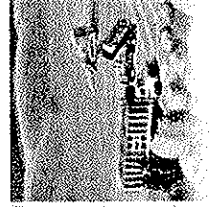
2. Ilabas lamang ang mga basura sa takdang oras. Tiyakin na ang sistema ng pangongolekta ng basura ay door to door.



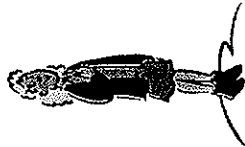
3. Dalhin ang mga basurang maaring i-recycle sa Materials Recovery Facility (MRF) na matatagpuan sa bayan o barangay kung saan ang mga ito ay mapaghihiwalay at maliigpit ng maayos. Ang mga basurang nabubulok ay maaring ibaan sa bakuran ng bahay. Ang mga mapanganib na basura ay dadalhin sa tamang lugar gaya ng waste treatment at disposal centers.



4. Ang basurang hindi maaaring ma-recycle at makompost ay kailangang dalhin sa isang disposal facility o sanitary landfill.



ANG ULIRANG TAGA-BARANGAY AY



Pinupulot ang nakikitang kalat sa daan .

Niilinis ang tapat at kapaligiran ng tirahan.

Nagtatalaga ng lalagyan ng kanyang basura sa bahay.

Pinagbubukod ang basurang nabubulok at hindi nabubulok at nilalabas lang ito sa oras ng pagkolekta.

Hindi nagtatapon ng basura sa mga daluyan ng tubig gaya ng estero at kanal kundi, ginagamit ng tama ang mga lalagyan ng basura.

Hindi sinusunog ang basura, sapagkat ang usok nito ay nakasasama sa kalusugan.

Hindi naninigarilyo dahil ito ay ikakasama ng kalusugan at gayun din sa kalusugan ng ibang nakakalanghap ng usok nito, lalo na ang mga bata at matatanda.

Hindi nagtatambak ng mga sirang gamit sa bangketa.

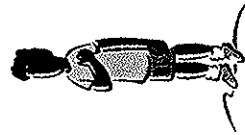
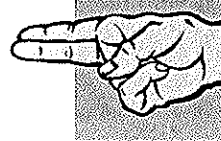
Hindi dumudura at sumisinga sa kalye at sa iba pang pampublikong lugar.

Pinupuri at pinasasalamatan ang sinumang gumagawa ng mabuti. Sinisita ang sinumang hindi gumagawa ng mabuti.

Magalang at ipinagmamalaki ang kanyang barangay.

Iginagalang at sinusuportahan ang pamahala ng barangay.

Mabait na kapitbahay na laging iniisip na anumang gagawin niya ay maaaring makaapekto sa kapitbahay o ka-barangay.



Experimental Research for the Study on Drainage Improvement in the Core Area of Metropolitan Manila

Brgy. 46, Pasay City Council

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 Hon. Benjamin S. Evangelista - Kagawad
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 Sonia O. Manfio



Experimental Research for the Study on
Drainage Improvement in the Core Area of
Metropolitan Manila
DPWH - JICA - MMDA