



MARIANO MARCOS STATE UNIVERSITY

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431: seasoned for excellence and leadership

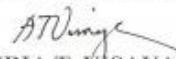
BOARD OF REGENTS

EXCERPTS FROM THE MINUTES OF THE 85th REGULAR MEETING OF THE MMSU BOARD OF REGENTS HELD ON 22 JUNE 2009 AT THE CHED CENTRAL OFFICE, UP-DILIMAN, QUEZON CITY

Board Resolution No. 1029, s. 2009

Resolve, as it is hereby resolved, to approve the MMSU Integrated Waste Management Program which is a component of the University program as model for renewable energy.

CERTIFIED TRUE AND CORRECT:


ALEGRIA T. VISAYA
Board Secretary

ATTESTED BY:


MIRIAM E. PASCUA
University President and Vice Chairman

cc : VPs
Chief, LACAD
COA



MARIANO MARCOS STATE UNIVERSITY

Batac City, 29016 Ilocos Norte, Philippines

Tel/Fax: +63 (077) 792

at 31, awarded for excellence and leadership



OFFICE OF THE PRESIDENT

9 February 2009

SPECIAL ORDER NO. 09-008

TO : Dr. Floramante Pastor, R & D Directorate
Dr. Antonio Fariñas, CAF
Ms. Estrella Domingo, CAS
College Waste Management Coordinators

SUBJECT : University Waste Management Committee

With Dr. Floramante Pastor as chairperson and with the College Waste Management Committee Coordinators as *adhoc* members, you are hereby assigned to constitute the University Waste Management Committee. The Committee is expected to make this University compliant to environment-friendly policies and to initiate programs, projects and activities that will make MMSU a model institution in proper waste management.

Please submit a plan for the efficient discharge of the Committee functions on or before February 27, 2008. Likewise, please submit monthly accomplishment reports to inform us of the extent of implementation of such programs, projects and activities.

For utmost cooperation.


MIRIAM E. PASCUA
President

Cc: VPs
Deans: CAF, CAS

College of Agriculture and Forestry-Batac (792-2660); CAF-Dingras (784-7083); CAF-Science High School-Batac (792-3538); College of Aquatic Sciences and Applied Technology-Currimao (793-6916); College of Arts and Sciences-Batac (792-3848); College of Business Economics and Accountancy-Batac (792-3307); College of Engineering-Batac (792-2633); College of Health Sciences-Batac (792-3882); College of Industrial Technology-Laoag City (771-4241); CIT-Paoay (793-2060); College of Teacher Education-Laoag City (771-4143); CTE-Laboratory Elementary School, Laoag City (771-5534); CTE-Laboratory High School, Laoag City (770-5162); Graduate School-Laoag City (771-3960); Liaison Office-Manila (02 415-7569)

POLLUTION CONTROL UNIT

Dr. SHIRLEY C. AGRUPIS
President
This University

Thru: ENGR. ROMEO Y. DOLDULAO
Director, EPPSDU
ENGR. AMI RUTH R. COCSON
Vice President, Administration and Finance

13 August 2020

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AUG 13 2020

MADAM:

This is in relation to the issued function of the PCU office which includes the waste management of the university. In this regard, may I request that the "MMSU Integrated Waste Management Program" approved by the Board of Regents in 2009 (see attached approval) be re-implemented with the consideration of some revisions or amendments. The following table matrix shows some of the major revisions:

PARTICULAR COMPONENT	OLD PROGRAM	REVISED/NEW PROGRAM
1. Title	MMSU Integrated Waste Management Program	MMSU Integrated Waste and Pollution (W&P) Management Program
2. Objectives	Does not include pollution and other types of wastes, it only includes solid wastes	More holistic coverage since it covers pollution and all types of wastes (hazardous, solid, water, etc)
3. Organizational structure	Does not include focal persons	With Focal Persons per waste or pollution category
4. Functions		Included the functions of Focal Persons
5. Framework (Figure 2)	MMSU Integrated Waste Management Framework – focused only on solid wastes	MMSU Integrated Pollution and Waste Management Framework – more holistic, it covers pollution and other types of wastes

The revised program is hereby attached for your perusal and approval. I believed that such program will serve as guide in addressing our pollution and waste problem in the university.

Very respectfully yours,

FLORAMANTE C. PASTOR
Chief, and Univ. PCO



MMSU INTEGRATED WASTE AND POLLUTION (W&P) MANAGEMENT PROGRAM

I. RATIONALE

Waste of the University continues to be a problem if appropriate waste management technologies and practices are inadequate. Practices which include poorly controlled open dumps, burning, roadside dumping and tossing everywhere, can spoil scenic and aesthetic resources, can contaminate or pollute soil and water resources, and can produce potential health hazards. It is quite sad to note that these practices are still existing and prevalent in the University. Most people may not be aware that these practices can cause environmental problems. Worst, people may not be aware that wastes disposal is a tremendous waste of resources, more so if what is dumped could be recycled, reused or recovered. The environmentally correct concept on waste management is to consider wastes as resources that could be reused, recycled and processed. It may not be too soon that we could recycle and reuse all wastes but it is apparent that the increasing costs of raw materials of different products, energy, transportation, etc, will push us to find appropriate and feasible technologies of recycling and reusing more resources. Moving toward this objective is moving toward an environmental view that there is no such thing as wastes. Wastes could be minimized or could not exist at all because wastes are considered as resources to be used again. This should be the ultimate guiding principle of the University towards zero waste movement which redound to address pollution problem.

However, attaining the goal of zero waste movement and better pollution control could only be realized if there are appropriate management strategies to be developed, environmentally correct practices to be instituted, and be shown as economically feasible, environmentally viable and socially acceptable, hence, this program.

II. LEGAL JUSTIFICATION

At the national level, there are a number of different legal instruments that explicitly mandates government agencies to create a sound waste management program. The following are some of the relevant laws:

1. **PD 1152 or the Environmental Code of the Philippines** which **aims** at ensuring environmental protection, biodiversity conservation and pollution control;
2. **PD 984** or the Pollution Control Law of 1976 which provide for the national policy to prevent, abate and control pollution of water, air and land for the more effective utilization of the resources of the country.
3. **PD 1586** or the Philippine Environmental Impact Statement System (PEISS) of 1978, establishing an environmental impact statement system including other environmental management related measures and for other purposes;
4. **RA 6969** or the Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990, an act to control toxic substances and hazardous and nuclear wastes, providing penalties for violations thereof, and for other purposes;

5. **RA 8749** or the Clean Air Act of 1999, an act providing for a comprehensive air pollution control policy and for other purposes;
6. **RA 9003** or the Ecological Solid Waste Management Act of 2001, an act providing for an ecological solid waste management program, creating the necessary institutional mechanisms and incentives, declaring certain **acts** prohibited and providing penalties, appropriating funds therefor, and for other purposes; and
7. **RA 9275** or the Clean Water Act of 2004, an act providing for a comprehensive water quality management and for other purposes.

Pursuant to the provisions of all the above laws, institutions like the university shall be responsible for the implementation and enforcement of the provisions within its area of jurisdiction.

III. Objectives

Main objectives

To develop an implementable and doable integrated waste and pollution management program of the University consistent with the provisions of existing waste management and environmental laws.

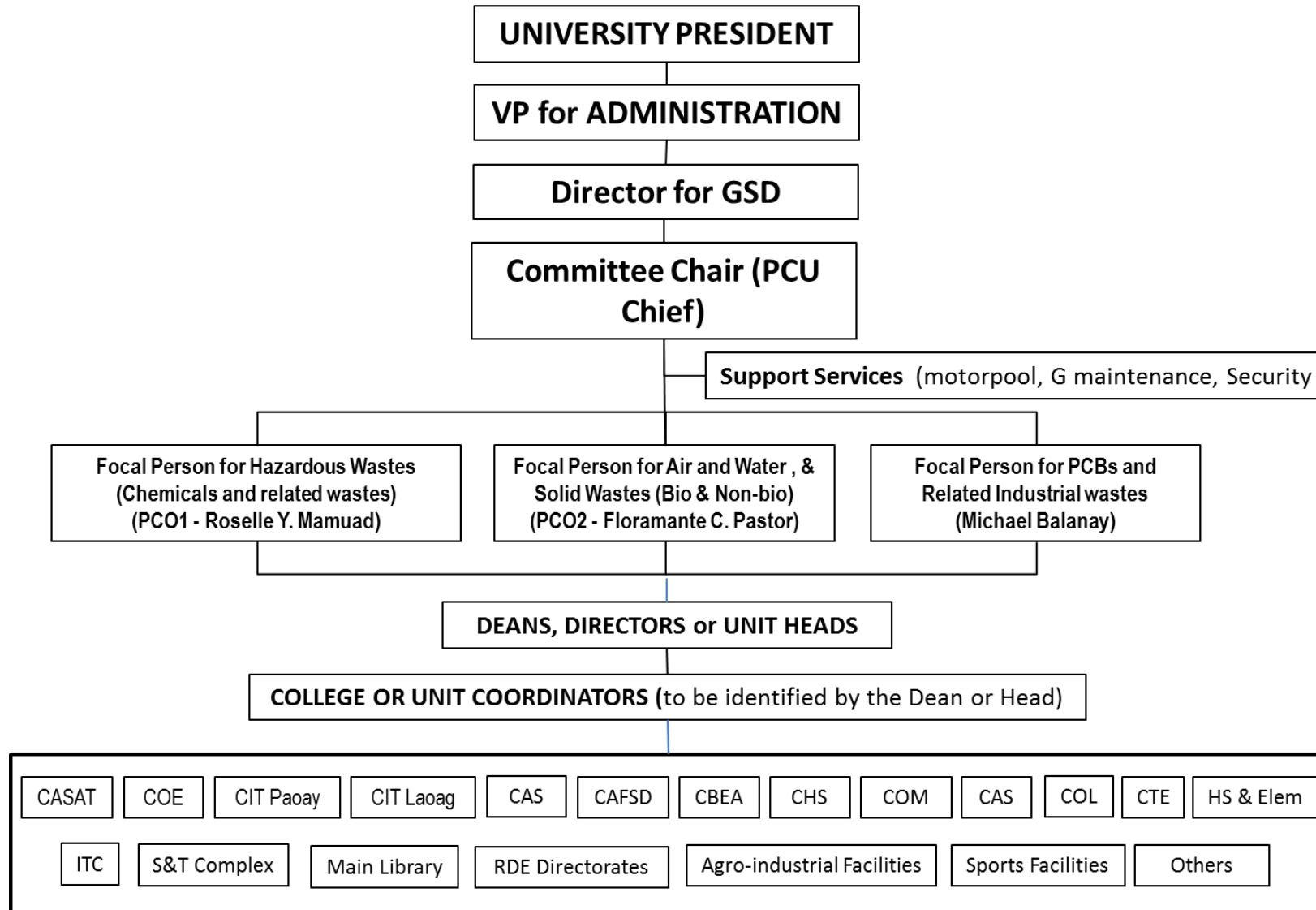
Specific objectives

1. To promote W&P management and awareness and participations of all constituents (personnel and students);
2. To identify and involve W&P management coordinators per unit;
3. To develop W&P management strategies to be implemented;
4. To identify and involve entities/unit responsible for each waste flow or waste management strategy
5. Promulgate appropriate rules, guidelines and policies concerning the implementation of the integrated W&P management program

IV. Committee Organizational Structure

The MMSU Integrated Waste & Pollution Management Program (MMSU – IWPMP) shall be formed by a Committee, hereafter referred to as the University Waste and Pollution Management Committee under the General Services Directorate (GSD). With the Chairperson (PCU chief), the Pollution Control Officers, and two other designated members, the Committee shall be further composed of deans/directors/heads, unit/college coordinators, and support services, who will be recommended by the Committee to the President for their designation (Please see attached proposed organizational structure (Figure 1).

PROPOSED ORGANIZATIONAL STRUCTURE OF THE IWPMP COMMITTEE



V. Powers and Functions of the Committee

- a. Prepare the University IWPMP framework and plans which will be recommended to the President for approval;
- b. Review and monitor the implementation of the IWPMP;
- d. Develop a mechanism for the imposition of sanctions for the violations on W&P management rules and regulations;
- e. Formulate the necessary information, education, and communication (IEC) and promotion campaign strategies;
- f. Encourage all constituents to reduce, segregate wastes and patronize products that are recyclable and biodegradable in nature;
- g. Propose and adopt regulations requiring the source separation and post separation collection, segregated collection, processing, marketing and sale of organic and recyclable material generated in each unit; and
- h. Study, review and propose the following:
 - Standards, criteria rules and guidelines for promulgation and implementation of an integrated waste management framework; and
 - Criteria and guidelines for siting, design, operation and maintenance of W&P management and storage facilities.

VI. Functions of the Committee Members

Committee Chair

1. Directly responsible to the president on matters concerning on the integrated waste management of the University. He shall be responsible in furnishing/providing the President monthly reports on the progress, performance, problems, and other matters pertaining to the operation and implementation of the integrated waste management of the University;
2. He shall directly coordinate with department heads, directors, and unit chiefs of the University with regards to the implementation of waste management policies, guidelines and strategies which could be promulgated;
3. He shall preside over meetings with the members and other meetings as may be convened for the purpose of efficient and effective implementation of the integrated waste management; and
4. He shall act as the overall overseer of the waste management affairs of the University.

Focal Persons/Members

1. Assist the Chairman in matters of operation, implementation and promulgation of rules and regulations regarding the IPWMP of the University;
2. Shall suggest policies, rules and regulations for the efficient management of W&P in the University
3. Shall serve as focal person for each of the three identified W&P categories such as Hazardous wastes (i.e., chemical and other related wastes); air and water pollution and solid wastes (biodegradable and non-biodegradable); and PCBs and related industrial wastes (i.e., electrical, electronic, and related wastes)

Deans, Directors, Unit Heads

1. Shall act as the overseer of the management coordinators in their respective area;
2. Shall be primarily responsible for the dissemination, implementation and enforcement of promulgated management policies within their respective jurisdictions;
3. Shall report to the Chairman or committee members on problems of implementation, operation of the IWPMP in their respective area;
4. Provides necessary support for the proper implementation of the IWPMP of the University;

Coordinators

These shall compose of the personnel (i.e., janitors, maintenance staff, chemical laboratory in-charge, or related personnel) who are directly involved and responsible in handling generated wastes and maintenance of clean environment in their respective areas. These shall have the following functions and responsibilities:

1. Shall be responsible in the proper implementation of the IPWMP consistent to rules, regulations and policies promulgated by the committee such as:
 - a. Collection of wastes to designated recovery bin
 - b. Segregation of wastes
 - c. Maintenance of clean environment in their area of responsibility
 - d. Proper storage (temporary) and labelling of generated hazardous wastes prior to collection
2. Notify responsible focal person on matters of collection and hauling of wastes
3. Assist the collection team in loading the collected wastes during hauling time.
4. Attend meetings as per convened by the Committee;
5. Reports to the unit head, security forces or the committee chairperson on violations of waste management rules and regulations

Support Services

a. Motorpool

Assign or provide hauling vehicle, or facility including driver and manpower to attend to the regular or periodic hauling of wastes from designated collection areas waste disposal or storage facilities (i.e., MRFs, PCB and Hazwastes storage facilities)

b. Security Unit

1. Help enforce the IPWMP rules/policies/regulations
2. Apprehend violators and report violations not consistent to environmental and waste rules/policies or regulations

c. Ground Maintenance

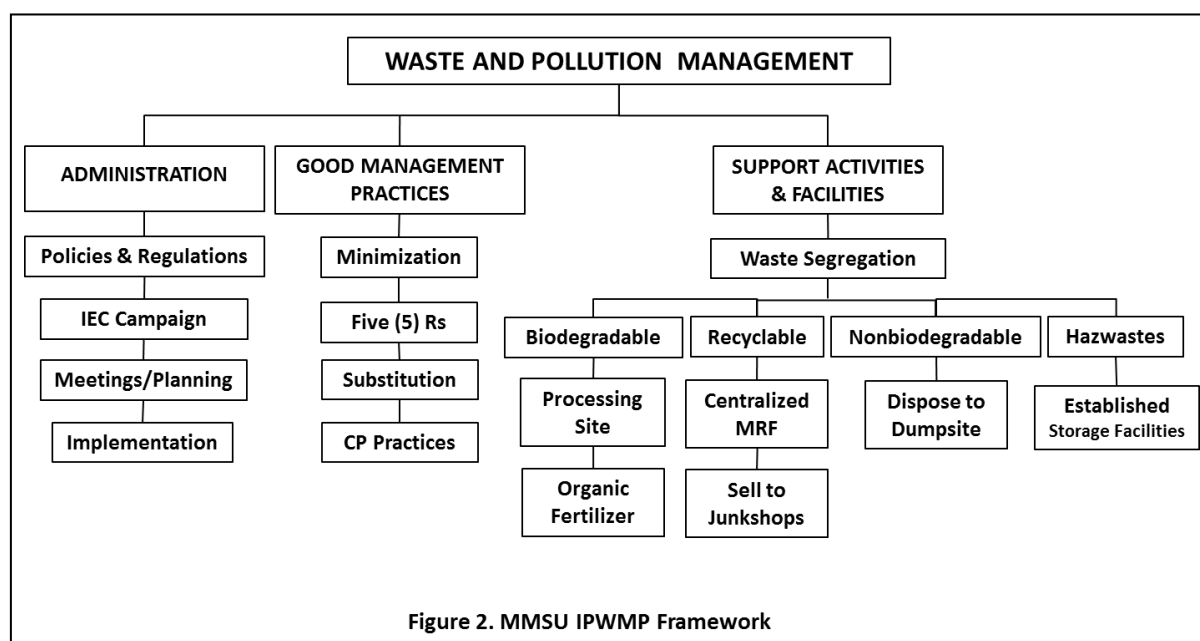
Assign or provide the necessary manpower in collecting/hauling the collected wastes from designated collection areas at designated time to disposal wastes area or established storage facilities

d. Student Organizations – with the discretion of the OFFICERS, they may designate themselves as the W&P management officers or they may create a committee with the involvement of other members of the organization who shall have the following functions and responsibilities:

1. To promote among their organizations good W&P management practices
2. To take the lead among their organizations in helping to implement W&M programs/projects initiated by the Committee;
3. To help monitor and enforce in their respective organizations the IPWPM rules and regulations/policies;
4. To develop schemes in the imposition of sanctions/penalties to students who are apprehended violating policies/rules;
5. To coordinate to the Committee on W&P management matters
6. To attend meetings as per convened by the Committee
7. To initiate W&P management projects/initiatives in their respective organizations (i.e., periodic operation linis, student contests, etc)
8. To identify needs/problems in their respective area of coverage and initiate necessary solutions if capable (i.e. provisions of waste trash cans), otherwise the problem will be reported to the Committee for appropriate action;
9. To conduct information, education and communication (IEC) campaign to their respective organization regarding this IPWPM.

VII. Integrated W&P Management Framework

Figure 2 shows the framework which serves as the implementation guide of the IPWMP. The framework consists of the three main components such as the Administration of IWPMP; Good Management Practices and Support Activities and Facilities. Discussions below parallel with that of the figure:



A. Administration

1. **Policies and Regulations.** The MMSU IPWMP shall promulgate, implement and enforce the basic policies provided by the Republic Act 9003 or the Ecological Solid Waste Management Act and other environmental laws such as RA 6969, PD 1586, PD 984, PD 1152, RA 8749 and RA 9275. If deemed necessary, Institutional or internal policies consistent to the policies of the acts shall also be identified, promulgated and institutionalized to further amplify the implementation of the University waste management program.

In compliance to the abovementioned laws, to improve environmental performance, and to have better public image, the following internal environmental policies are suggested for consideration:

- a. **All development projects (existing and proposed) with known or probable environmental impacts shall be subjected to the Philippine Environmental Impact Statement System (PEISS, PD 1586) wherein Environmental Impact Assessment (EIA) shall be conducted in order to secure Environmental Compliance Certificate (ECC).** The ECC shall serve as an assurance that the proposed project or undertaking will not cause significant negative environmental impacts; that the proponent has complied with all the requirements of the PEIS System and that the proponent is committed to implement its approved Environmental Management Plan in the Environmental Impact Statement System or Initial Environmental Examination documents (these are the type of documents as a result of the EIA process which are submitted to DENR for ECC application).
- b. **Establishment of Material Recovery Facility (MRF) to all campuses, units and colleges.** This serves as temporary storage for solid non-biodegradable wastes, and pick-up point during waste collection. This is in compliance with RA 9003 or the Ecological Solid Waste Management Act.

In support to that policy, all units or campuses must also develop a system of converting their biodegradable wastes into usable resource such as organic fertilizer. Batac campus and Dingras have their Organic fertilizer production facilities.

- c. **Establishment of centralized separate storage facilities for Polychlorinated Biphenyls (PCBs) (or transformers containing PCBs), and Hazardous or toxic wastes.** These serve as temporary storage for condemned PCBs and hazardous wastes collected from the different campuses or units. These wastes shall be kept or stored at least 1 year prior to their disposal through an accredited DENR Transport, Storage and Disposal (TSD) facility. These facilities are required to comply with the provisions of RA 6969 particularly EMC 2015-07 (guideline for storage of PCBs) and DAO 36-04 (guide for storage facility for hazardous wastes).
- d. **Registration as Hazardous waste generator** (wastewater discharge from agro-industrial facilities like piggery; and the operation of generator sets in different units and campuses). This is in compliance to RA 9275 or the Clean Water Act and RA 8749 or the Clean Air Act.
- e. **Waste segregation at source.** For more efficient and proper hauling/collection and disposal, all wastes shall be segregated at source and this should also be disposed accordingly (i.e. all biodegradable wastes shall be disposed to the organic fertilizer processing facility, refer to Figure 3; other campuses must have their own composting facility).

Concurrent with the above proposed policies are the following policies previously promulgated and approved for implementations. These policies could be re-implemented, revived, or re-promulgated:

- f. **Guidelines on waste management.** This was promulgated through the previous Waste management committee in 2005. The subject of these guidelines are the following:
 - Maximize utilization of supply and materials in the office
 - Employees must be required to minimize the generation of discarded office supplies by practicing efficient and effective office procedures and by observing proper housekeeping.
 - Segregation of waste in the different units and colleges. Individual collection containers for different types of waste must be provided in each offices, units/colleges properly labelled or color coded as to recyclable, biodegradable, and non-biodegradable. Schedule of collection is from Monday to Friday based on the scheme to be adopted.
 - Awareness campaign regarding the objectives/values of waste reduction and proper sorting and handling of wastes in coordination with student organizations, colleges, units of the university.
 - Students/employees must be disciplined to reduce waste
 - Each college/unit should be do some composting in their own backyard
 - Those units having waste that are unique (i.e. waste from piggery) or wastes that the only unit produces should design a waste management plan

to treat the wastes in coordination with the Chairperson of the University Waste Management Committee

- A coordinator in each units should be designated to look into the proper implementation of the program
- The University Waste Management Committee will hold quarterly and annual competition for units/colleges

- g. No burning policy of waste materials of the university.** This policy was promulgated and approved by the university in January 26, 2009 through the Security and Monitoring Service Directorate.

In 2009, the new reconstituted University Waste Management Committee again promulgated waste management policies with the desire to make the University a model eco-friendly school. These policies are some reiteration or revival of previous policies issued in 2005. The following are the policies:

- h. No burning.** Burning of wastes of all sorts shall not be allowed. It is the responsibility of every constituent to observe this policy.
- i. Waste segregation.** Waste shall be segregated at the very source. All constituents shall be required to dispose wastes at designated bins for biodegradable, non-biodegradable, and recyclable.
- j. No styrofoam/limited use of plastics.** Use of styrofoam for dishing/packing food in the Food Service Unit shall be strictly prohibited. Likewise, use of plastics, shall be limited or avoided if possible.
- k. Classroom cleanliness and orderliness.** It shall be the responsibility of the heads of units/colleges to provide trash cans in all classrooms. Likewise, it shall be the responsibility of every faculty to look into the cleanliness and orderliness of the classroom before dismissing class.
- l. No astray/tethering of animals.** There shall be neither astray nor tethered animals within peripheries of buildings and roadsides in order to avoid scattered wastes and destruction of school properties.
- m. Permit revocation.** Tricycle operators who do not abide by the University waste management and other policies shall be penalized through the revocation of their MMSU gate pass; and private individuals or student councils operating university-owned canteens as well as sidewalk vendors within the campus who violate the waste management regulations and other polices shall be banned from operating or shall be given appropriate penalties.

In February 11, 2016, another related policy was again promulgated relative to the use of styrofoam and plastics. The following is the policy:

- n. Implementation of the policy on the elimination of styrofoam and plastic as secondary packaging materials.** As alternative, it is encourage to use paper bags, cartons, and eco-bags or other reusable containers.

2. **Information, Education and Communication (IEC) Campaign.** The program shall promote awareness among the University constituents through lectures, print ads or flyers. The program shall also strengthen the integration of ecological waste management (i.e. biodegradable waste conversion into organic fertilizer) and resource conservation and recovery topics into the academic curricula of formal and non-formal education in order to promote environmental awareness and action among the studentry. This could be incorporated in the curricula of the NSTP students which are to be lectured or disseminated by the NSTP in charge.
3. **Meetings/Planning.** The committee shall meet at least once a month or as deemed necessary for the purpose of updating the operation and implementation status of the integrated waste management program. The Chairperson, or in his absence, the members, shall be the presiding officer. Planning shall also be done as the need arises.
4. **Implementation.** The program shall also strategize in turning plans into actions in order to accomplish the set objectives and goals. To ensure its effective implementation, the program is also subject to periodic revision in order to adapt to the continuous changing situations.

B. Good Management Practices

1. **Waste Minimization Strategies.** Where minimization of waste is possible, this should be observed. The program shall promote through brochures, flyers or lectures on possible wastes reduction strategies. There are materials that could be substituted to more environment-friendly yet biodegradable and recyclable materials.
2. **Practice of 5Rs (Recycle, Reuse, Reduce, Refuse, Recover).** For all possible and applicable activities, the 5Rs shall be observed or practiced which could redound to waste segregation, waste reduction and pollution control.
3. **Substitution.** The program shall also promote substitution from any pollutive source into more environment-friendly materials, products, process or activities, and technologies.
4. **Cleaner Production (CP) Practices.** The program shall also promote continuous application of an integrated preventive environmental strategy to processes, products, and services to increase overall efficiency, and reduce risks to humans and the environment. CP practices have its general purposes of waste or pollution reduction at source and promote recycling at site which could ultimately end to minimal wastes and pollution. CP practices could generally mean product and process changes. Specific CP practices are good housekeeping, input substitution, better process control, equipment modification, technology change, onsite recovery and reuse, production of a useful by-product, product modification and good work layout.

C. Support Activities and Facilities

1. **Waste Hauling and Segregation.** All wastes should be segregated as early as possible at source. This is a direct responsibility of the waste management coordinators (janitors) who are supervised by their immediate supervisors. All non-biodegradable wastes should be directly hauled and disposed to dump site facilities. Bio-degradable materials (animal and plant origins) collected from each unit will be hauled to the Organic fertilizer processing collection area (Figure 3), while recyclable materials will be hauled to the centralized material recovery facility (MRF). Recyclable materials should be collected first in bulk prior to its sale to minimize transport costs. A centralized recovery bin will also be established for this purpose.

Hazardous wastes shall be dealt separately. All generated Hazwastes in all units shall be kept or stored properly and temporarily in safe places (Hazwaste storage facility) prior to collection. Upon the request of the unit, the generated hazwastes shall be hauled and stored to the established storage facilities. The focal person for these wastes shall be responsible in supervising the collection and hauling with the help of the PCU unit and personnel from the support services.

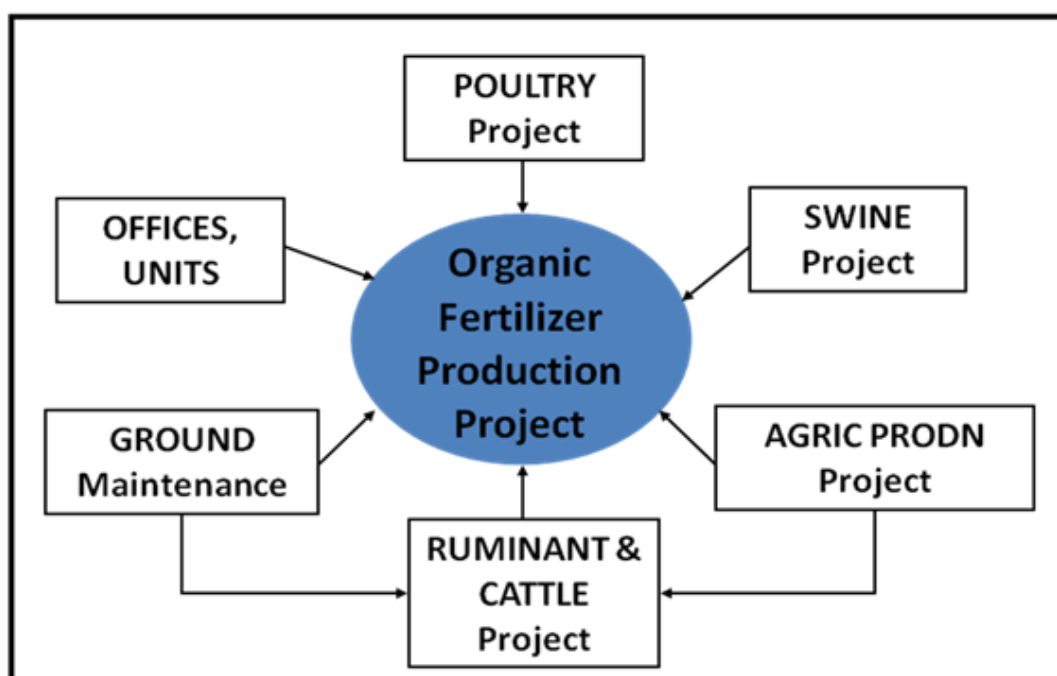


Figure 3. The System of biodegradable wastes

2. **Provision and Establishment of Recovery Bins per Unit or College.** Part of the program is also to identify appropriate strategic sites for the establishment of material recovery bins for each unit. Standardized bins will be design and established for this purpose. These bins serve as collection area for segregated wastes for each unit prior to their hauling and disposal to designated areas.

Concomitant with the MRF per unit should also be the provision of standard color-coded and properly labelled disposal bins to be distributed or placed in different strategic sites that serve as temporary disposal before it will be disposed in the established MRF.

3. **Establishment of Centralized Storage Facilities (i.e., MRF, PCB and Hazwastes storage facilities).** For better storage and handling of wastes, minimize environmental and human risks, and to be compliant with existing environmental laws, the university must have a centralized storage facilities for all types of especially hazardous wastes. These wastes shall be kept temporarily prior to proper disposal. These wastes shall be kept in these facilities not longer than a year and shall be disposed upon hiring an EMB accredited or recognized entity to haul and dispose such wastes.
4. **Purchase of hauling facility.** For more efficient and less bulky handling of generated solid wastes, a compactor truck must be purchased if possible.

V. Ecological Guiding Principles

The design of the MMSU-IPWMP wants to encourage mutualistic and commensalistic relationships among stakeholders in order to make maximum use of inputs, products and wastes materials. The idea of the program is conceptually appealing but its practical implementation represents a challenging tasks. However, if we look at the management system, it is a resemblance of the ecosystem concept which is composed of interdependent assemblages of component parts, and each part has a functional relationship with the other. This is one of the basic ecological principles that we could learn from.

Other ecological principles that we can learn from are the following:

- a) Waste is a resource
- b) One's man wastes could be another man's resource
- c) Waste disposal is a great waste of resource, more so if what is disposed could be recycled, reused and recovered
- d) The four laws of ecology formulated by ecologist Barry Commoner:
 - **Everything is connected to everything else** - humans and other species are connected/dependent on a number of other species. This principle is best exemplified by the concept of the ecosystem. In an ecosystem, all biotic and abiotic components interact with each other to ensure that the system is perpetuated.
 - **Everything must go somewhere** - no matter what you do, and no matter what you use, it has to go somewhere. For example, when you burn wood, it doesn't disappear, it turns into smoke which rises into the air, and ash, which falls back down to the earth. This is related to the second law of thermodynamics – energy can not be created nor destroyed.
 - **Nature knows best** - this principle is the most basic and in fact encompasses all the others. Humans have to understand nature and have to abide by the rules nature

dictates. In essence, one must not go against the natural processes if one would like to ensure a continuous and steady supply of resources.

- **There is no such thing as a free lunch** - Everything you do must have a reason behind it. This law basically means you have to do something in order to get something in return.