VOLUME 2:
THE ACHIEVEMENT OF SUPPORTING ACTIVITIES TO STRENGTHEN CAPACITY OF HWM ADMINISTRATION

Chapter 10

Updating HW Registration Data

10 UPDATING HW REGISTRATION DATA

The EMB and the JICA Study Team have established a computerized management system, known as a "HW management Database System," digitizing the registration data of HW generators, treaters, haulers and exporter/importers to strengthen the HWM administration in the Philippines.

10.1 Working Policy

(1) HW Generators

Upon completion of the Phase 1 study, the number of registered HW generators was 1,079, and of that, the data on 719 generators was not perfect but could be used for the former DB system. As of the end of January 2002, the EMB had given DENR ID numbers to 2,088 HW generators.

Tasks for updating the existing registration data were shared between the Study Team and the EMB. The Study Team was responsible for renewing the registration data on 1,252 generators in the study area of Region 3, 4 and NCR, out of the data on 2,088 generators nationwide for which the EMB had assigned ID numbers as of January 2002.

The following was confirmed between the EMB and the JICA Study Team concerning the data updating work.

- Registration data submitted by generators after completion of the Phase 1 Study are digitized as they are.
- Registration data on the HW generators that have submitted four or more quarterly reports within the past two years shall be updated by using the data in the reports.
- Registration data on the HW generators that have submitted less than four quarterly reports within the past two years shall be updated by information in the registration form mailed to and sent back from the generators.

(2) Registration of the Others

The JICA Study Team sent newly prepared registration forms to relevant entities and input data in the registration forms collected. The Study Team sent the forms to all the treaters, transporters, importers, and exporters because the information is indispensable for the HWM Database System and because there were not many companies listed.

10.2 Preparation of Registration Forms

The Study revised the registration form for HW generators. It also newly prepared the registration form for treaters, haulers and export/importers

10.3 Update of the Registration Data of HW Generators

Although the EMB has 2,088 HW generators registered as of the end of 2002, only registration data on 719 generators digitized during the Phase 1 Study could be used for the database. Only the ID number, name, and address of the generator are digitized for the generators registered after the Phase 1 Study.

There were 704 HW generators registered after the Phase 1 Study whose data, using the old registration form, had been kept on the registration form in the EMB Central Office. The number of HW generators located in the CALABARZON area and NCR who had submitted less than four quarterly reports within the past two years are 412. The JICA Study Team sent revised registration forms to these 412 HW generators and collected 236 by the end of February 2002, and 44 generators submitted registration data using the form revised by the EMB. The JICA Study Team has digitized all the above registration data.

On the other hand, 1,709 quarterly reports were submitted from January 2000 to the end of December 2001, and 136 HW generators submitted four or more reports within this period.

The JICA Study team updated the registration data of HW generators having submitted four or more quarterly reports by using these data. However, the old data on general information not described in the quarterly report were not updated.

10.4 Recommendation of Updating Data

- All the work concerning registration is conducted at the EMB central office. Because about 450 documents, such as transport permit applications, import/export permit applications and manifests etc., are sent to the central office monthly at present, the central office staff cannot handle the task of digitizing and/or updating the registration data. To utilize the HWMDBS effectively, the regional offices are expected to digitize and update as much of the registration data as possible to reduce the burden of the central office. Therefore, the central office will be requested to analyze and evaluate the data sent from the regional offices and defuse and execute an appropriate management system based on the results of the analysis.
- It is necessary to strengthen the capacity of regional EMB staff in evaluating the registration data submitted, training of HW generators in filling out the form, and so forth.

Chapter 11

HW Management Database System

11 HW MANAGEMENT DATABASE SYSTEM

11.1 Network Architecture

The EMB central office is connected to the Internet through an Internet service provider, and has 24-hour unlimited access via cable modem with 64k (full), Internet static IP addresses, e-mail service, domain name hosting, and the like. Although MIS has multiple static IP addresses, they have been using one through a single main Proxy Server, which intensively controls their whole network.

To avoid the above inconveniences, a new hub was set between the intranet of MIS and the cable modem so that each work group, small networks working within, can work independently without affecting the performance of other work groups.

11.2 HW Management Database System

The HWM DB System is designed to improve productivity of EMB services by digitally managing and analyzing the information on generators, treaters, transporters, importers and exporters and quarterly reports from generators.

The HWM DB System has the following features:

- The system increases the efficiency of hazardous waste management services by sharing information within the EMB through a network.
- Because there is no limit to the number of users and no restriction on the location of users, it is easy to extend the area covered by the database system. (Note: License fee for Microsoft products is required.)
- The system is based on an object oriented programming concept, which would reduce the work and cost for modifying or expanding the capability of the system in the future.
- The system is designed to be user-friendly; each tool is arranged so that the user can find it intuitively and little instructions are needed to operate the system.

The major function of the system is to manage the hazardous waste database: the database of the registration information and the database of the Quarterly Reports. The functions are designed to edit, search, update, delete, print and analyze the database.

The Study Team and the EMB discussed the information required for the Database System. The information was encoded by the regional offices and then transferred into the database in a Microsoft SQL Server format.

Figure 11.2.1 is the basic concept of the database based on the identification of the required information. Each of the blackened boxes is a table of the Database System with a normalized shape.

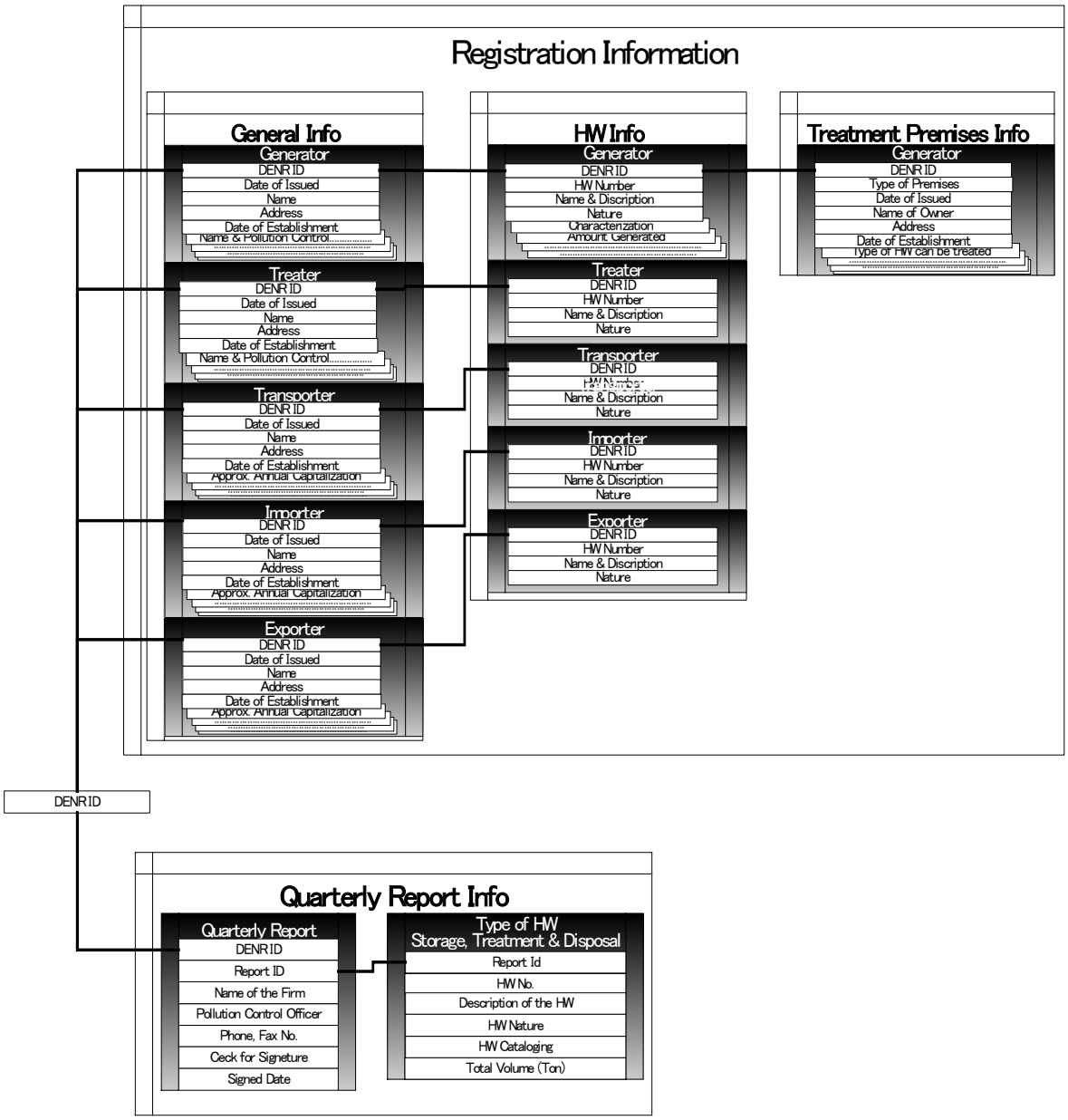

Figure 11.2.1 Structure of HW Management Database

11.3 Recommendation on the HWM DB System

- Inputted data contain unit errors, value errors, data type errors, and the like because of the mistakenly filled out registration forms; those errors are hazardous to the system's performance. Thus, the level of inner data security has loosened to prevent system calls from occurring (i.e. system down caused by illegal dataset). This condition, however, sacrifices the system's stability; therefore, it should be improved by enhancing data check security as the existing data improves.
- Every business application is designed to improve productivity of their business or service by automating some part of their business procedures. Therefore,

the application model or design reflects the real business procedures or business model just as the HWM DB System. The current business model of hazardous waste management carried out by the EMB should be changed as the surrounding environment changes. Therefore, the HWM DB System should be improved or adjusted as the business model changes.

- The database updated during the Study covers a part of the Philippines, so additional data construction is needed to enlarge the database to cover every region in the Philippines.
- As data construction progresses, it is necessary to acquire geographical information for more precise and comprehensive HW management. Obtaining both numerical or statistical and geographical information helps to identify the underlying conditions or problems, which makes it possible to provide more realistic and effective services. A Geographic Information System (GIS) provides comprehensive services integrating numerical information and geographical information. Integrating the HWM DB System into GIS is strongly recommended.

Chapter 12

Development of Technical Requirements for Hazardous Waste Management

12 Development of Technical Requirements for Hazardous Waste Management

12.1 Preparation of Technical Requirements

Based on RA6969 and DAO 92-29, the JICA Study Team has developed technical requirements that are necessary for actual implementation of HWM administration. During the JICA Study on Industrial Hazardous Waste Management (Phase 1), lack of detailed regulations for RA6969 and DAO 92-29 was identified as a large obstacle to enhance HWM administration. Especially no provision on technical requirements for TSD facilities and waste acceptance criteria for landfills is considered as one of the major factors preventing investment in TSD facility construction. Moreover, ambiguity of classification of HW in Table 1 of DAO 92-29 has been causing misunderstanding over HW regulated by DAO 92-29 between the competent authority and HW generators. To contribute to the solution of these issues, the JICA Study Team was tasked to prepare the following technical requirements:

- Definition of inert hazardous waste residues
- Classification of hazardous waste
- Requirements for authorized waste transporters
- Criteria for issuing Transport Permit
- Labelling requirements
- Classification of TSD facilities
- Technical requirements for TSD facilities

During the preparation of the technical requirements, there was a question about incinerators that DAO 92-29 recognizes as one of the TSD facilities whether incineration of HW is contrary to the *Ban on Incineration* provision in CAA. If incineration cannot be employed as treatment method of HW, unprecedented methods are necessary to treat organic HW. It is impractical to set technical requirements for treatment methods other than incineration for the treatment of organic HW even if state-of-the-art technology is employed. Even though the requirements are set, no economically feasible method to treat organic HW is available, and HW generators would face a great deal of difficulty to treat HW. In addition, the policy set in Section 24.2 d of DAO 92-29 (landfill of inert hazardous waste residues) could not be achieved. If CAA totally bans incineration of HW, it would contradict to the HWM policy.

The JICA Study Team presented its interpretation of the *Ban on Incineration* provision in CAA in November 2001 that Section 20 of CAA and Section 1 of Rule XXVIII of DAO 2000-81 do prohibit incineration of municipal, biomedical and hazardous waste that emits toxic and poisonous fumes but not all the incineration. The Supreme Court also presented the same interpretation in its ruling for the MMDA vs. Jancom case in January 2002, and the case was closed in May 2002. The Supreme Court's ruling states that "Section 20 does not absolutely prohibit incineration as a method of waste disposal; rather only those burning processes which

emit poisonous and toxic fumes" (G.R. 147465 (MMDA vs. Jancom) dated January 30, 2002). Therefore, the preparation of technical requirements for incinerators became worthwhile.

These technical requirements are going to be integrated into the Procedural Manual for HWM as described in Chapter 12.2. The EMB will authorize the Procedural Manual as DAO and implement it in the future, which enables the EMB to guide HWM stakeholders to conduct proper HWM by clarifying classification of HW, defining inert hazardous waste residues, and showing other standards of proper HWM. Implementation of these technical requirements would also encourage investment in TSD facility construction.

12.2 Preparation of the Procedural Manual for Hazardous Waste Management

12.2.1 Objectives of the Procedural Manual

Based on RA6969, DAO 92-29, and other relevant laws and regulations, the Procedural Manual is designed to serve as a primary reference for the DENR staff or personnel, existing and prospective waste generators, transporters, and treaters, environmental units of government agencies, local government officials, non-governmental or people's organization, and other stakeholders in the smooth implementation of proper hazardous waste management. It aims to clarify the definition of hazardous waste and provide technical standards and requirements for hazardous waste generators, transporters, and premises involved in the treatment, storage, recycle, reprocess, and disposal of hazardous wastes in the country.

12.2.2 Organization of the DAO29 Manual

The draft Procedural Manual has the following structure:

Preface

Introduction
- Hazardous waste management in the Philippines
- Legal framework of hazardous waste management
- Purpose of the Procedural Manual
- Overview of the Procedural Manual
- Definition of terms

Chapter 1 Policy
- 1-1 Import of recyclable hazardous waste
- 1-2 Landfill of inert hazardous waste residues
- 1-3 Financial responsibility of waste generators

Chapter 2 Classification of Hazardous Waste
- 2-1 Definition of hazardous wastes
- 2-2 Policy to classify hazardous waste
- 2-3 Revised Table 1

Chapter 13

Manual on Compliance Monitoring for Hazardous Waste Management

13 Manual on Compliance Monitoring for Hazardous Waste Management

13.1 Objectives of the Manual

This manual aims to help staffs of DENR regional offices and the EMB central office who are in charge of compliance monitoring related to RA6969 and DAO 92-29.

13.2 Objectives of Compliance Monitoring

Compliance monitoring is carried out to ensure proper management of hazardous waste by waste generators, transporters and treaters and monitor illegal dumping. When inappropriate practice is observed, the authority offers guidance on proper management of hazardous waste.

13.3 Definition of Proper Management of Hazardous Waste

Proper management of hazardous waste means that waste generators, transporters and treaters, which are stipulated in DAO 92-29, manage, store, transport, treat, and dispose hazardous waste in compliance with the responsibilities and the requirements based upon RA6969 and DAO 92-29.

13.4 Forms of Compliance Monitoring

Compliance monitoring takes four forms as follows: 1) check at offices, 2) on-site surveys of relevant parties, 3) on-site inspections of relevant parties, and 4) monitoring of illegal dumping.

13.4.1 Document Check at Offices

Document check at offices is carried out to confirm whether registration of and quarterly reporting from generators, transporters and treaters, manifests, transport permits, are properly conducted. When DENR/EMB finds out improper documentations or actions of generators, transporters and treaters, it instructs them on corrective actions, which would increase their awareness towards importance of regulatory compliance.

The work consists of a) document check and instruction at time of registration, b) periodical check of regulatory compliance after registration, and c) identification of non-registered generators and instructions to them.

13.4.2 On-site Survey

On-site survey should be obviously distinguished from inspections. On-site survey is conducted through visiting generators and TSD facilities to gather necessary information regarding creation and amendment of regulations and guidelines and policy making and to give pressures to a manager of the facility so that he or she feels they are being observed.

DENR regional offices should receive consent from relevant bodies prior to visits to their premises. Therefore, even if DENR/EMB finds improper actions at the premises by on-site survey, it cannot impose administrative sanction. It is not necessary for DENR staff who conduct the on-site survey to obtain authorization from Secretary of the Department in order to enter the premises.

13.4.3 On-site Inspection

On-site inspection is carried out to find out whether or not 1) submitted documents such as registration forms and quarterly reports reflect the reality, and 2) a generator, a transporter, or a treater complies with relevant laws and regulations. In addition, it includes observing corrective actions taken by the target body in response to the administrative guidance, and environmental impacts on the surrounding environment from storage, recycling and treatment of hazardous waste. When DENR/EMB finds out improper actions of generators, transporters and treaters, it instructs them on corrective actions, which would increase their awareness towards importance of regulatory compliance.

13.4.4 Monitoring of Illegal Dumping

Monitoring of illegal dumping of hazardous waste aims to discover and stop illegal dumping at earlier stage, identify those who conduced illegal dumping, and recover illegal dumping sites. After conducting regular patrols and those based on complaints, patrollers prepare records, summon relevant parties to identify the actual situation, and order the recovery of the illegal dumping site. With respect to cases that need to pass through Conference deliberation according to Section 10 of DAO 29 "Confiscation, Impoundment and Imposition of Administrative Fines", the set procedure shall be followed.

Chapter 14

Seminars and Workshops on Hazardous Waste Management

14 Seminars and Workshops on Hazardous Waste Management

14.1 Seminars and Workshops for DENR Regional Office Staff and EMB Central Office Staff

(1) Contents of the Seminars and Workshops

To enhance hazardous waste management administration, the following seminars and workshops were conducted:

Area	Topics	Participants	Date
Operation of HWM Database System	• Overview of HWM • Overview of Database System • Explanation of the Operation Manual • Hands-on Training	10 staffs from EMB Central Office, Region 3, 4-A, NCR	7-8 March, 2002
		3 staffs from Region 4-A	22 May
		3 staffs from NCR	24 May
		3 staffs from Region3	28 May
		3 staffs from MIS/EMB	5 September
		5 staffs from HWMS/EMB	6 September
		3 staffs from Region 7 and I from MIS/EMB	10 September
		3 staffs from Region 11 and 1 from MIS/EMB	12-13 September
HWM Administration	• Overview of JICA Study • Overview of RA6969 • Profile of HW Generators • Registration and Permitting Procedures for HW Generators, Transporters and Treaters • Monitoring Plan • Technical Requirements for TSD Facilities	33 staffs from Region6, 7, 8, 9	3 – 4 June
		35 staffs from Regions 10, 11, 12, 13, ARMM	6 – 7 June
		31 staffs from Regions 4, 5, Central Office	10 – 11 June
		32 staffs from Region 3, NCR, Central Office	13 – 14 June
		30 staffs from Region 1, CAR, Region 2	17 – 18 June

Area	Topics	Participants	Date
	• Classification of HW • Treatment Scheme of HW • Monitoring of HW Generators, Transporters, and Treaters • Framework of HWM Database • Plan on HW Generator Registrations Expansion	48 staffs from the DENR regional offices	September 16

(2) Results of the Seminars and Workshops

The workshops on the HWM database system were opportunities for EMB central Office and DENR regional offices where the computes for the database system have been installed to recognize importance of management of information on registration and understand the framework and operation methods of the database system, which made them possible to use the database system. In addition, staffs from the EMB Management Information Section have come to be able to develop the database network and installation of the database system.

Through the seminars on HWM administration, staffs from DENR regional offices understand the registration and permitting procedures regarding HW generators, transporters, and treaters, which is the basis for the decentralization of registration works from the EMB central office to the DENR regional offices. The EMB Central office and the DNER regional offices also deepened their understanding of identification of HW and technical requirements for TSD facilities; now they have the information about the basics of HWM.

14.2 Seminars for HWM Stakeholders

(1) Contents of the Seminars

The following two seminars were conducted to update HWM stakeholders with recent development of HWM administration and consult with them about the draft classification of HW and technical requirements for TSD facilities. The recent development includes adoption of new registration forms, the supreme court's ruling on the interpretation of the ban on incineration in CAA, issuance of Memorandum Circular on interpretation of the ban on incineration in CAA. The seminar aims to provide PCOs with working knowledge on RA6969 and its IRR, understand the requirements for HW generators and learn what and how to comply with the law and regulations.

Area	Topic	Participant	Date
Update of RA6969	• Preliminary Draft Classification of HW • Transport Permit • Registration and Permitting procedures and reporting requirements for HW stakeholders • CAA and Incineration • Technologies Employed at the MIF	101 participants from industries (PCOs)	21 June 2002
RA6969	• Draft Classification of HW • Technical Requirements for TSD Facilities • Leaching Methods and Characteristics of HW Residues • Overview of MIF • DENR's response to the Interpretation of the Ban on Incineration Close in CAA in the Supreme Court Ruling	116 participants from industries (PCOs), government organizations and academe	18 September 2002

(2) Results of the Seminars

By giving presentation, staffs of the EMB central office deepened their understanding of the classification of HW and technical requirements for TSD facilities. The participants were able to obtain the latest information on HWM administration such as new prescribed forms for registration and reporting and the interpretation of the *Ban on Incineration* close in CAA. The seminars initiated the discussion on enhancement of HWM in the Philippines with industry and academe.

Chapter 15

Recommendations

15 RECOMMENDATIONS

The JICA Study Team has been working on the feasibility study on the MIF construction project and development of technical requirements for RA6969 and DAO 92-29 and capacity building of the staffs of the EMB central office and the DENR regional offices. These activities are just a one step to enhance the HWM administration in the Philippines. The JICA Study Team expects the Philippine government (DENR/EMB) by itself will continue the efforts to enhance the HWM administration. The issues regarding HWM in the Philippines identified during the Study and challenges that DENR/EMB will face are summarized below.

15.1 Development of HW Treatment Facilities

- The policy on HWM in DAO 92-29 (Section 24, Chapter VII, Title III) provides that HW should be treated to be inert hazardous waste residues and disposed in landfills unless they can be recycled or reused. It is necessary to have facilities to treat organic HW to be inert HW residues and dispose of the residues in order to implement the policy. The JICA Study Team developed the basic design of the MIF and examined the feasibility of the MIF construction project with the involvement of the GOP. It is the GOP's responsibility to prepare necessary local counterpart funds and take procedures for the construction of the MIF such as approving ICC, obtaining ECC, and confirming social acceptability.
- The MIF is going to be located in CALABARZON, and its planned treatment capacity is about 40,000 ton/year, which can treat only a part of the HW generated in CALABARZON. It is necessary to develop measures and construct facilities to store HW both generated in other areas and generated in CALABARZON but cannot be treated by the MIF as proceeding with the MIF construction project.

15.2 Laws and Regulations

- The framework of the HWM has been established by the issuance of DAO 92-29, the implementing rules and regulations of RA6969. However, procedures and technical requirements necessary for implementing the HWM have not officially adopted, which is one of the factors that prevent private investments in construction of HW treatment facilities. Since DENR/EMB is preparing the Procedural Manual for HWM (DAO 92-29), the prompt authorization of the Procedural Manual is important.
- The Procedural Manual includes the HW judgement criteria and waste acceptance criteria for landfills. Official measurement and analysis methods for hazardous substances in the HW should be adopted in order to implement these criteria.
- Although the JICA Study Team has prepared materials that have supplemental explanation to the draft classification of HW and technical requirements for TSD

facilities, it is desirable if the government officials, industry, academe, NGO, and other interested parties collaborate to further detail the explanation. This kind of activity would increase public concern over HWM and provide useful information for the amendments and development of laws and regulations regarding HWM in the future.

15.3 Organization, Human Resources, and Administrative Operation

- Responsibility of implementing RA6969 and DAO 92-29 is given to the Secretary of DENR. Since the Secretary has a various responsibilities, it takes time to approve regulations and other administrative matters necessary for HWM administration. Section 9 of DAO 92-29 provides that the Secretary may, by notice, amend or revoke the delegated authorities previously granted under Section 8 (2) of these Rules and Regulations and appointment of an Environmental Protection Officer. It is recommended to appoint EMB Director as the Environmental Protection Officer so that administrative decisions are made in a timely manner.
- The authority regarding implementation of RA6969 and DAO 92-29 to the DENR regional offices is yet to be fully delegated, and the mechanisms to authorize orders and guidance regarding the law and the regulation have not been established between the EMB central office and the DENR regional offices. The delegation of the authority and the establishment of the mechanisms should be completed as soon as possible.

- In conjunction with the delegation of the authority and the establishment of the mechanisms, policy formation function of the Hazardous Waste Management Section of the EMB should be strengthened.

- The HWM database has been established during the Study; it is necessary to designate the Management Information Section of the EMB to be in charge of maintenance of the database in order to properly maintain the database. Access from the DENR regional offices to the host server at the EMB central office is constrained due to the limited number of telephone lines. To improve the accessibility, the telephone line dedicated to the HWM database access should be secured at each DENR regional office that is connected to the database system. In addition, because it is impossible for two or more DENR regional offices to simultaneously access the host server at the EMB central office, the schedule or rule on use of the HWM database among the DENR regional offices should be established.

- The input data to the HWM database should be accurate; it is necessary to ensure the complete examination of the documents submitted by the applicants upon the registration at the DENR regional offices and continuously conduct training on enhancing the DENR regional staffs' capability of the document examination.

- The EMB central office and the DENR regional offices should utilize the HWM database for preparation of the annual report on the hazardous waste management and policy formation.

- Each DENR regional office should prepare and implement the action plan on registration expansion as well as the monitoring plan every fiscal year.

15.4 Budget for HWM Administration

- Budget allocated to HWM administration at both the EMB central office and the DENR regional offices is insufficient. It is necessary to secure budget for the HWM database utilization, monitoring of HW generators, transporters, and treaters (vehicles and fuels), researches for policy formation, and training for the EMB and the DENR regional staffs.