Chapter 9

Summary of Strategy and Action Plan

9. Summary of Strategy and Action Plan

This chapter reflects the EU principles, strategic objectives and measures and the resulting actions to be taken by the Romanian government and private sector for improvement of hazardous waste management in Romania. These are based upon the strategies and actions presented in earlier chapters. The actions listed and suggested below are limited to those strongly related to hazardous waste management.

Hazardous waste management efficiency and quality are much dependent on actions taken outside the hazardous waste management and enabling factors including market conditions and policy reform progress. Besides, it should be noted such basic actions as maintaining EU harmonization programme or finalisation/adoption of the National Waste Management Strategy and Plan are not listed below, which however, must be taken by the Romanian government.

- Section 9.1 briefly describes why a hazardous waste management plan is necessary and the driving EU principles, strategy and legislation
- Section 9.2 summarises the strategic objectives and measures for hazardous wastes' management.
- Section 9.3 tabulates (Table 9.3.1) the list of suggested actions cross-referenced to *Objectives* listed in section 9.2
- Section 9.4 shows a summary outline of each of the proposed *Actions*.

9.1 Drivers (EU Principles, Strategy & Legislation)

9.1.1 Why A Hazardous Waste Management Plan Is Necessary and Important

Management of hazardous waste is of growing world-wide concern. Clearly and by definition, it is these wastes which have the greatest potential impact upon health and the natural environments. Hazardous wastes, as well as representing a wasted resource, may exhibit one or more of a range of properties (eg flammable, corrosive, toxic etc), and require very rigorous management from `cradle to grave'. The holders of such wastes will realise the potential liability costs associated with this rigorous management regime. Experience in other countries has shown that this can result in illicit trade, illegal dumping, and significant environmental contamination (eg soils, sewers and waste water treatment plants etc).

The need to adopt a more strategic approach to hazardous waste management has also been reinforced by the need to implement the EU Landfill Directive and the IPPC Directive, as well as the specific measures to remove the most dangerous chemicals from the environment. Furthermore in December 1999, the 5th Conference of Parties to the Basel Convention made a high level declaration on the environmentally sound management of hazardous wastes.

9.1.2 EU Principles, Strategy & Legislation

Waste management is a complex subject made up of many component parts. There is no perfect model which can be applied in every situation but the EU has firms principles upon which its approach to waste management is based. Those principles shown below are stipulated in the following documents:

- Community Strategy for Waste Management (EU Focus on Waste Management

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- Waste Framework Directives (75/44/EEC, 91/689/EEC)
- Regulation 259/93 COM (96) 399 – Communication from Commission on the review of the Community Strategy for Waste Management referred above

EU Principles on Waste Management

Waste Management Hierarchy

- Waste management strategies must aim primarily to prevent the generation of waste, and to reduce its harmfulness
- Shere this is not possible, waste materials should be reused, recycled or recovered, or used as source of energy
- As a final resort, waste should be disposed of safely.

Producer Responsibility and Polluter Pays

- Those who produce the waste or contaminate the environment should pay the full cost of their actions, and
- Economic operators, and particularly manufacturers of products, have to be involved in the objective to close the life cycle of substances, components and products from their production throughout the useful life until they become a waste

Precautionary principle - we should anticipate potential problems

Proximity principle - waste should be disposed of as closely as possible to where it is produced

Self-Sufficiency at EC, and if possible, at Member State level - Member States need to establish, in co-operation with other Member States an integrated and adequate network of waste disposal facilities

Best Available Techniques Not Entailing Excessive Cost (BATNEEC) - emissions to the environment from installations should be reduced as much as possible and in the most economically efficient way

In addition to these main principles the EUs waste management policies also seek to achieve a number of *other objectives*, which are listed below:

- Common definition of waste
- Encouragement of clean products
- Encouragement of economic instruments
- Regulations of shipment of wastes
- Environmental protection and the internal market

The principles of the EU's waste management strategy are achieved primarily by EC directives, regulations and decisions that create binding legal obligations. The EU's waste strategy also stresses the need for:

- Reduced waste movements and improved waste transport regulation
- New and better waste management tools such as:

- Regulatory and economic instruments
- Reliable and comparable statistics on waste
- Waste management plans
- Proper enforcement of legislation

9.2 Strategic Objectives and Measures

Tables 9.2.1 (Objectives and Measures of Hazardous Waste Management) and 9.2.2 (Objectives and Measures for Management of ***Certain*** Hazardous Waste) have been prepared using the proforma adopted by the MoWEP working with the EU German Twinning Group and JICA Study Team. This is suitable for direct adoption within the National Waste Management Strategy and Plan to be presented to the Government.

This table provides a summary overview of the strategies described in the earlier chapters 3 - 8. These strategies have been prepared considering

1) current Romanian economic conditions,
2) current Romanian hazardous waste management conditions,
3) current Romanian capacity in hazardous waste management, and
4) EU directives.

Low cost and economical systems yet with environmentally effective solutions as well as gradual improvement were considered important for development of facilities for hazardous waste management. Significant emphasis was also put on capacity building of government staff and awareness raising for waste generators.

Certain hazardous wastes are not prescribed. Those which are generally referred meet one or more of the following criteria: subject of specific EU Directives (eg PCB's, used batteries), EU priority waste streams (eg waste oils), and/or wastes of particular significance to the country (eg obsolete pesticides).

Table 9.2.1 Objectives and Measures of Hazardous Waste Management

Domain / Activity	Main Objectives	Subsidiary Objectives	Measures to Achieve the Objectives
1. Policy and legislation	1.1 To establish a hazardous waste management system that is environmentally-sound and economically efficient, and socially fair (eg. realisation of Polluter Pay Principle).	1.1.1 To establish legal and administrative systems that are adequate to provide hazardous waste generators with incentives to comply with the legal requirement. 1.1.2 To implement EU Directives in steady and step by step manner.	1.1.a Authorize "Hazardous Waste Mangement Strategy and Action Plan" as part of the Waste Management Strategy and Action Plan of Romania (A1) 1.1.b Make legal, administrative and financial arrangements necessary for implementing the Action Plan included into JICA report on hazardous waste (A1, B1, C3, D5, D4, E4, H1, I2)) 1.1.c Develop and implement by economic sectors and Ministries involved of some `sectoral strategies and plans' as mentioned into the legal provisions regarding the hazardous wastes 1.1.d Establish means to ensure monitoring and review of strategy and plans in accord with legislation (A3)
2. Institutional and organisational aspects	2.1 To strengthen the administrative capacity of governmental organizations	2.1.1 To strengthen the administrative capacity of governmental organisations at all levels (national, regional and county) having responsibilities in enforcing the law	2.1.a Strengthen national level administrative capacity in HW management by identifying roles and functions of all Actors (eg MoWEP, NEPA, REPIs, LEPIs, NEG) 2.1.b Introduce Regional level of waste management planning, including HW planning 2.1.c Strengthen county level EPAs and NEG capacity in inspection and monitoring of waste management conditions, including hazardous waste (D4, D6)
3. Human resources	3.1 To provide the necessary human resources as number and professional background, at all levels	3.1.1 To provide the necessary staff and well professional trained staff, at all level, both in public sector and in private sector: 3.1.2 Strengthening of the NEG & EPI staff capacity in law enforcement regarding the HW;. 3.1.3 To strengthen waste generators capacity in HW ecologically sound management.	3.1.a Establish and implement a two-weeks HW management training course for EPIs staff. (D4) 3.1.b Provide EPI staff with guidance notes for 1) identification/classification of HW, 2) waste management inspection, 3) assessing company hazardous waste management plan, 4) enforcing the existing legal network for the re-commissioning of existing HW treatment facilities, and 5) making contaminated sites' inventory (B2, C3). 3.1.c Organise awareness-raising seminars for HW generators in order to increase the awareness level and disseminate information regarding the best available technologies for cleaner production, waste avoidance and minimization (C3, E1, E2).

Domain / Activity	Main Objectives	Subsidiary Objectives	Measures to Achieve the Objectives
4. The prevention and minimization of waste generation. (has to be in accordance with the item 7 of the table "General strategic objectives for waste management")	4.1 To promote and apply the hw generation prevention principle and, if possible, the proximity principle 4.2 To minimise impacts of hw on health and environment. 4.3 To maximise effective use of resources. 4.4 To increase productivity and save costs.		4.a Not allow illegal waste disposal. (Allowing such illegal activity will reduce waste generators' incentives for waste prevention and recycling.) 4.b Implement some demonstration projects for awareness raising of HW generators (enterprises) about environmental and economic benefits of CP and IPPC techniques. (E1, E2) 4.c Increase awareness of chemical sector industry concerning "Responsible Care".(E3) 4.d Enforce IPPC directive. 4.e Require enterprise in-company HW audit. (F1) 4.1.a Prepare and enforce a law to phase out use of certain hazardous chemicals.
5. Waste collection and transport	5.1 To establish waste collection and transport services dedicated for HW.	5.1.1 To establish HW transport system that meets needs of hazardous waste generators	5.1.1.a Create demand for HW collection and transport services through creating demand for HW treatment and disposal services. (I1, I2) (See Measure 6.1.1 below for measures to create demand for HW treatment and disposal.)
		5.1.2 To ensure that HW collection and transportation meets EU dangerous substances' requirements	5.1.2.a Ensure hazardous waste included in standards for hazardous goods transportation. 5.1.2.b Develop and implement manifest system for tracking waste movements (I2).

Domain / Activity	Main Objectives	Subsidiary Objectives	Measures to Achieve the Objectives
6. Waste treatment and disposal	6.1 To dispose of HW in environmentally sound and economically efficient and socially fair manner.	6.1.1. Encourage the HW treatment and disposal in view of: • Recovery (if possible); • Handling easiness; • Disposal enabling; • Minimisation of hazardous characteristics. 6.1.2 Ensure adequate provision of hazardous waste treatment and disposal facilities	6.1.1./6.1.2. a Create demand for hw treatment through the following activities: • Categorise existing landfills as "hazardous waste landfills" or "non-hazardous waste landfills" • Prevent acceptance of hw at landfill sites categorised as "non-hazardous waste landfills". • Enforcing treatment and disposal standards for hw through 1) strengthening EPIs compliance enforcement capacity (D4), and 2) applying effective penalty (D5). • Raising awareness of hw generators through seminars and IPPC best available technology demonstration projects (E1, E2 & E3). • Raising awareness of hw wastes generators through seminaries and demonstrative projects regarding the best available technologies as per IPPC (E1,E2,E3) • Requiring owners of hw illegally stored or deposited, to legally dispose of such waste. 6.1.1.b Promote use of cement kilns for hw treatment (G1). 6.1.1.c Identify / encourage potential developers of hw management facilities (I1). 6.1.1.d Promote construction of dedicated treatment and landfill facilities for hw (G2, G3. G4).
		6.1.3 Ensure facilities designed, constructed and operated to EU standards	6.1.3.a Identification of illegal facilities / facilities not complying with EU standards (D1) 6.1.3.b Promote re-commissioning / upgrading of existing facilities (D2). 6.1.3.c Implement model voluntary agreements (D3).
		6.1.4 Facilitate appropriate export of certain hazardous wastes for environmentally-sound management	6.1.4.a Develop and maintain improved inventories of PCB wastes and pesticides 6.1.4.b Facilitate disposal of PCB waste and obsolete pesticide in the existing facilities (G5, G6)

Domain / Activity	Main Objectives	Subsidiary Objectives	Measures to Achieve the Objectives
7. Material recovery (recycling) and energy recovery	7.1 To maximise effective use of resources. 7.2 To minimise impacts of hw on health and environment. 7.3 To increase productivity and save costs.		7.a Promote use of smelting facilities for of-site recycling and recovery of heavy metals from wastes. 7.b Promote use of cement facilities for core facilities of recycling and disposal of wastes including HW. 7.c Same as 4.a, 4.b, 4.c, 4d and 4.e.
8. Soil-con-taminated sites management	8.1 To secure public health, through preventing / minimising peoples' exposure to contaminated soil and water and contaminants themselves. 8.2 To prevent creation of new soil-contaminated sites	8.1.1 To contribute to achieve the environmental quality objectives of surface water, and to achieve international obligations of the Romanian government in the field of biodiversity preservation and prevention of ecological accidents in the Danube river (Danube river protection convention framework). 8.2.1 To make information on soil contamination publicly available	8.a Prepare and issue a new ministerial order about historical contaminated sites (H1) in order to: • Clarify site owners' responsibilities for identification, reporting, inventory making, monitoring and taking measures for protection of health and environment • Clarify roles of EPIs • Clarify administrative procedure about activities related to soil contaminated sites • Regulate historical contaminated sites in the cadastre documents • Stipulate a funding mechanism to finance costs related to contaminated sites 8.b Strengthen MWEP and EPIs role in monitoring and enforcing compliance with respect to soil contaminated sites through (H1) • (MWEP) Preparing and issuing a guidance notes for management and assessment of soil contaminated sites based on JICA Study Document (Volume 9 Section 7) • (MWEP) Providing training and awareness raising for EPIs • Creating a section within MWEP responsible for issue of soil contaminated sites • Establishing a national working group on contaminated sites • (MWEP/ICIM) creating a national data system based on EPIs data, and a list of prioritized contaminated sites • Monitoring implementation of the action program set up under Decision 118/2002 8.c. Requiring EPIs to (H2) • Prepare a preliminary inventory of soil contaminated sites, and include obtained information in the county environmental report. • Prepare and enforce restrictions on land use and water use to minimise

Domain / Activity	Main Objectives	Subsidiary Objectives	Measures to Achieve the Objectives
			exposures to contaminates sites 8.d Publicize information on soil contaminated sites by putting it in public documents (H2) 8.e. Require enterprises to 1) comply and submit to EPIs all relevant data on soil contaminated sites including historical waste deposit sites, and 2) make a plan for monitoring, managing and taking measures for such sites. (H3) 8.f Enforcing responsible bodies to take measures to minimise impacts on people' health. (H3)
9. Finance of waste management system.	9.1. To create and use economical-financial mechanisms for hw management in the conditions of complying with the general principles, specialy thepolluter pay principle. 9.2. To improve access of industry to funding required for economically justified and efficient investments in environmental improvement, clean production technology, and plant modernization	9.1.1 Create and implement some economical-financial instruments assuring the creation and development of a sound market of industrial and hazardous wastes by applying the polluter pay principle. 9.1.2 Develop capacity of commercial banks to appraise environment projects	9.a Facilitate at central/regional/county level of the dialog between various sectors/economic agents in view to support financialmechanismsforthe creation and use of hw treatment/disposal capacities in ecological sound conditions (in case it is possible the co-incineration of hw into cement factories kilns will be prefered in view of energetic and/or material recovery. 9.b. Conduct feasibility studies for creation of funding mechanisms using internal or external sources including intermediary loans. (J1)
10. Information system for waste management.	10.1 To establish a reliable and useful hazardous waste information system to meet International, EU and national requirements.	10.1.1 To facilitate improved hazardous waste regulation and control	10.1.1.a Increase capacity of both hw generators and EPIs in identifying and classifying hw through delivering and encouraging to use a guidance note for hw identification and classification as proposed by JICA Study Team (B2) 10.1.1.b Implement improved data collection system (C1, C3) 10.1.1.c EPIs to require enterprises to elaborate a company waste management plan, and to include the plan in application documents for environmental permit. (B2, C3) 10.1.1.d Require EPIs to prepare contaminated sites inventory, and include it in county environmental management plan using inventory format proposed by JICA Study Team.(H2)

Domain / Activity	Main Objectives	Subsidiary Objectives	Measures to Achieve the Objectives
		10.1.2 To provide information at Regional and National levels for hazardous waste management planning and strategy development	10.1.2.a Modify national waste database, and Develop Waste Management Information System (WMIS) featuring Regional and National databases (C1, C2) 10.1.2.b Commence data collection and data input into WMIS (C2)
		10.1.3 To make waste management information publicly available.	10.1.3.a Establish information dissemination roles and responsibilities 10.1.3.b Integrate into WMIS information reporting requests to EU (C2)
		10.2 To implement a waste management reporting system in accordance with EU requirements	10.2.1.a Establish reporting roles and responsibilities 10.2.1.b Integrate EU compliant reporting functionality into WMIS
11. Awareness Raising.	11.1 To raise citizens awareness about impacts of hw on health and environment.	11.1.1 Raise awareness of consequences of bad practices	11.1.1.a Include environmental education with focus on waste management in school education. 11.1.1.b Information dissemination via internet and NGOs (H3)
		11.1.2 Raise awareness of necessary good practices	11.1.2.a (As 11.1.1.a) 11.1.2.b (as 11.1.1.b) 11.1.2.c Establish a national Forum for advancing the technical, scientific and practical aspects of HWM (C4)
	11.2 To raise awareness about benefits of applying cleaner production practices and technologies	11.2.1 Raising awareness of cleaner production and IPPC in industry	11.2.1.a Implement some demonstration projects to for awareness raising of hw generators (enterprises) about environmental and economic benefits of CP and IPPC technologies (E1, E2)
		11.2.2 Raising awareness of cleaner production and IPPC in EPIs and government	11.2.2.a Dissemination of demonstration project results (E1, E2)
	11.3 To raise awareness about ”Duty of Care” and “Polluter Pays Principle”.	11.3.1 Improve industries “Responsible Care” performance	11.3.1.a Increase awareness of chemical sector industry concerning “Responsible Cares” (E3) 11.3.1.b Publicise bad responsible care performance (E3) 11.3.1.c Publicise / disseminate information on good responsible care performance (E3)

Source: JICA Study Team

Table 9.2.2 Objectives and Measures for Management of Certain Hazardous Waste

Hazardous Waste Category	Sub-categories	Main Objectives	Subsidiary Objectives	Measures to Achieve the Objectives
1. Waste containing PCB/PCT	Waste oil containing PCB/PCT. Equipments containing PCB/PCT	1.1 Management according to national and international requirements.	1.1.1 Periodic verification of national inventory 1.1.2 Usage forbidden for oil and equipments containing PCB/PCT. 1.1.3 Storage in safe conditions for environment and local residents' health 1.1.4 Disposal of existing stocks in the best technical and economical conditions as soon as possible	1.1.1.a Establish and update inventories of PCBs and equipment containing PCBs including random field visits 1.1.2.a Prohibition of any recovery, treatment, or disposal until practical proving trials have been undertaken to confirm efficacy of handling and destruction. 1.1.3.a Inspection of existing major storage locations to include ambient PCB measurements 1.1.3.b Requiring holders of equipment containing PCBs to notify competent authority and ensuring equipment is labeled correctly in accord with law 1.1.3.c Establish a reporting system 1.1.4.a Evaluate options and establish programmes for the disposal/decontamination of equipment containing PCBs 1.1.4.b Prohibit the removal of PCBs from transformers and retro-filling of transformers with non-PCB alternatives 1.1.4.c Establish an effective inspection and enforcement system
2. Obsolete Pesticide	Obsolete pesticides which are subject to PHARE 2002 project of MWEP Other pesticides and pesticides packaging wastes which have been identified beside PHARE 2002 project	2.1 Management according to national and international requirements.	2.1.1 Periodic verification of national inventory and field visits 2.1.2 Storage in safe conditions for environment and local residents' health 2.1.3 Disposal of existing stocks in the best technical and economical conditions as soon as possible	2.1.2.a Monitor existing `obsolete pesticide' storage sites for security and integrity of material containment. 2.1.3.a Implementation of MAFF EU Phare 2002 project proposal for disposal of obsolete pesticides. 2.1.3.b Evaluate options and establish programmes for the disposal/decontamination of remaining sites that hold obsolete pesticides 2.1.3.c Implement management programme for existing pesticide use to prevent recurrence of this type of problem.
3. Organic chlorinated solvent		3.1 To reduce the generation of waste 3.2 To reduce the emission to environment 3.3 To dispose the waste in proper manner	3.1.1 To reduce the consumption of the solvents and generation of waste. 3.2.1 To reduce the discharge of the solvents to air, water and soil. 3.3.1 To establish the proper management and disposal of the wastes.	3.a To introduce proper guidance for storage/handling/management for waste. 3.1.a To disseminate the result of the pilot project PP3 to reduce the consumption in industry. 3.2.a To introduce effective enforcement in air emission, effluent discharge and soil contamination. 3.3.a To provide proper incineration for waste disposal.

Hazardous Waste Category	Sub-categories	Main Objectives	Subsidiary Objectives	Measures to Achieve the Objectives
4. Waste oil		4.1 To increase the collected amount of waste oil from users /population 4.2 To reduce environmental and health impact by improving waste oil management 4.3 Use waste oil as fuel in environmentally sound manner.	4.1.1 To eliminate illegal market of waste oil of which use generates adverse impacts on health and environment. 4.2.1 Encourage use of waste oil in environmentally sound manner at cement kilns 4.3.1 To encourage the waste oil regeneration	4.a Monitor illegal market, and strengthen the enforcement 4.b. Development of a programme of public education and information concerning the ecologically sound manner of waste oil disposal. 4.b Legally require waste oil lagoon owners to reduce waste oil stock quantity by disposing of it at environmentally sound manner through co-incineration at cement kilns. 4.c Provide legal and administrative support to encourage the disposal of waste oils by co-incineration, with energy recovery at cement kilns and steel making furnaces in environmentally sound manner 4.d Provide legal discouragement to the landfilling of acid tar and other oil residues.
5.Wastes resulted from medical activity and generated by research institutes	Infectious wastes (codes from health and research units) Hazardous wastes, other than infectious wastes	5.1 Separate collection of infectious wastes, hazardous wastes (except the infectious ones) and non-hazardous 5.2 To dispose of medical waste safely without affecting health of waste handling workers and citizens	5.1.1 Encourage hospitals to apply good in-hospital waste management 5.2.1 Encourage of disposal of medical waste environmentally-sound, and economically-efficient manner. 5.2.2 Prohibition of hazardous waste disposal without pre-treatment; in case of infectious wastes incineration should be the compulsory pre-treatment method.	5.1.a Strengthen awareness raising of hospitals about in-hospital waste management 5.2.a Identify a potential contractor for development of medical waste incineration facility 5.2.b Negotiate and make a contractual arrangement with interested contractor for development of incinerators and collection, transport and treatment services. (Government must assure a contractor that it can receive medical waste of planned quantity for some period of years.)

Hazardous Waste Category	Sub-categories	Main Objectives	Subsidiary Objectives	Measures to Achieve the Objectives
6. Waste batteries and accumulators	Batteries and accumulators	6.1 Batteries and accumulators management in accordance with the specific legal provisions, both national and European	6.1.1 Separate collection and disposal for the waste batteries and accumulators 6.1.2 To prevent the entrance on the market of the batteries and accumulators containing toxic compounds in higher amounts than the limits allowed by the European and Romanian laws, and promotion of marketing of batteries and accumulators containing smaller quantities of dangerous substances and/or less polluting substances 6.1.3 Recovery of valuable materials contained in batteries and accumulators. 6.1.4 Reduction of the heavy metal content of batteries and accumulators	6.a Establish a system in order to prevent the entrance on the market of the batteries which are against to the European Directives. 6.b Establish a collection system for waste batteries and accumulator. 6.c Develop a group to provide people information about sound disposal measures of waste batteries, obligations for collection, significance of written and symbols on batteries, toxicity and hazardous degree of the contained materials.
7. Asbestos	Construction and demolition waste Manufacturing and asbestos containing products	7.1 Prevention and reduction of environmental pollution by asbestos in accord with EU Directive 87/217	7.1.1 Prevention of products coming onto the market containing asbestos 7.1.2 Safe handling and separate collection of securely packaged and labelled asbestos waste 7.1.3 Safe disposal in accord with current best practice	7.a Introduction of product-related legislative measures 7.b Awareness raising and guidance notes for construction and demolition contractors for safe handling, storage and disposal procedures. 7.c Ensure separate collection and handling of securely packaged and labelled waste 7.d Establish `best practice' for disposal of asbestos wastes ensuring use of approved sites only and record keeping to ensure identification of asbestos disposal areas.

Hazardous Waste Category	Sub-categories	Main Objectives	Subsidiary Objectives	Measures to Achieve the Objectives
8. Waste Electric and Electronic Equipment (WEEE)		8.1 Transposition and implementation of the WEEE Directive (2002/96)	8.1.1 Collection of pollutants from electric and electronic equipment and components and use of low-pollutant, recoverable materials 8.1.2 Prevention of waste by ease of repair and dismantling and re-use of old equipment 8.1.3 Maximisation of the recovery of valuable materials 8.1.4 Recovery of the energy contained in residual material that cannot be recycled under economically reasonable conditions 8.1.5 Preventing the disposal of untreated WEEE	8.a Ensuring the separate collection of WEEE 8.b Ensuring the proper environmentally sound recovery and treatment of WEEE

Source: JICA Study Team

9.3 Summary List of Actions

The table below shows actions required for achieving the objectives of the strategy for hazardous waste management in Romania.

Table 9.3.1 Actions Required for Achieving the Objectives of the Strategy for Hazardous Waste Management in Romania

Objectives	Actions Required	Actors	Need for Legislative Actions	Need for Technical Assistance	Period
A. HW Management Strategy and Plan					
A11. Authorize the Strategy and Plan & Implement the Plan	• Complete and adopt the output of this Study Project the National Hazardous Waste Strategy and Plan • Acquire the budget and foreign donor assistance for the implementation of the Plan shown here • Implement the Plan.Authorize the strategy and plan for hazardous waste management.	MWEP Other Ministries & Gov't	✔	✔	2003 2004 to 2008
A2. Develop and implement `sectoral strategies and plans' listed in Waste Laws	• Develop and implement `sectoral strategies and plans' listed in Law 426/2001 to support NEAP and National Waste Management strategies and plans	MWEP & other Ministries	✔		2004 to 2007
A3. Review these National level Waste Strategies and Plans	• Establish Steering Committee [SC]and Working Group(s) [WG] including national, regional and local representatives, based on organisations with responsibilities under Law 426/2001 with responsibility for implementation, monitoring and review of Strategy and Plans • Establish Hazardous Waste Working Group • Review and report to SC Actions and Measures taken, and Performance Indicators • Monitor EU proposals regarding hazardous wastes for implications on industrial and hazardous waste management strategy and plans. • Review and issue revised Hazardous Waste Management Strategy and Plan • Review and issue revised Hazardous Waste Management Strategy and Plan	MWEP			2003 to 2007
B. Information System Legislation & EU Harmonisation					
B1. Prepare secondary legislation	• Complete and approve all secondary legislation, regulations, Standards / Norms on hazardous waste management according to the requirements of the Waste legislation.	MWEP	✔		2004 and permanently
B2. Prepare technical guidance notes to support the legislation	Prepare technical guidance notes to support the legislation including: • Licensing, inspection and enforcement procedures • Correct identification and classification and reporting of hazardous wastes • Environmentally sound waste minimsation, recovery and re-use • Environmentally sound disposal	MWEP	✔		2004 to 2005

Objectives	Actions Required	Actors	Need for Legislative Actions	Need for Technical Assistance	Period
	• Waste generator hazardous waste management plans • County and regional level hazardous waste management plans				
C. Administration & Capacity Building Environmental Authorization and Permit					
C1. Improve quality of data input to national hazardous waste data management system	• Issue a guidance note on waste identification and classification based on JICA PROJECT recommendation. • Modify company data format sheet to make a clearer distinction between waste flow and stock, between hazardous and non-hazardous, and between outgoing waste and those internally managed. • Disseminate the above guidance note and new data format to EPIs and enterprises through regional seminars.	MWEP			2003 to 2004
C2. Develop National Waste Management Information System (WMIS)C1. Modify requirement on information to be submitted by enterprises for authorization (Drewett)	• Development of concept and ToR for WMIS development • Preparation of Detailed Design for WMIS. • Application development. • Hardware and system software procurement. • System testing and completion. • Installation and Training. • Initial data input reporting. Prepare guidance for Specify format of company waste management plan based on JICA recommended guide, and provide EPIs with the guidance recommendation. • Require enterprises to submit a waste management plan. A material input/output flow diagram should be required for manufacturing and energy industries.	MWEP EPIs	✔	✔	2003 to 2007
C3. Modify requirement on information to be submitted by enterprises for authorization to include waste management plan	• Prepare guidance for company waste management plan based on JICA PROJECT recommended guide, and provide EPIs with the guidance. • Require enterprises to submit a waste management plan.	MWEP EPIs Industry	✔		2003 to 2004
C4. Investigation of possibilities for establish a forum (Federation) for advancing the scientific, technical and practical aspects of wastes management.	• Develop and publicise Waste Strategy & Plans, and hazardous waste specific, stakeholder awareness reference literature (web site) • Develop and implement workshops and training materials for hazardous waste management	MWEP			Not determined but 2004 advised

Objectives	Actions Required	Actors	Need for Legislative Actions	Need for Technical Assistance	Period
D.Environmental Compliance					
D1. Check legal/illegal status of existing industrial waste storage/deposit sites	• Prepare a practical guidance note for EPIs for identifying legal/illegal status of the existing storage/deposit sites. • Establishment of programme for site identification, integrated with normal inspection activities.EPIs will check legal/illegal status, and establish legal status. • Inspection of sites to check legal/illegal status, and establish legal status. • Establishment of programme for upgrading operational sites in order to bring under them proper control.	MWEP			2003 to 2005
D2. Re-commission the existing on-site waste treatment facilities within factories	• Prepare a guidance note for EPIs for enforcing the re-commissioning of on-site treatment facilities. • Establishment of programme for site identification, integrated with normal inspection activities. EPIs will put the "re-commissioning" as a condition of Environmental authorization/permit. • Inspection of sites to identify non-compliant plant and equipment necessary for environmentally sound waste management. • Development of "Compliance Programme" type agreements necessary to reactivate, refurbish, upgrade or replace treatment plant and equipment.	MWEP, MIR, Industry			Permanent
D3. Model Voluntary Agreements to be entered into between Government and selected industrial plants	• Identify potential model industrial plants • Draw up legal agreements between local or national government and selected companies • Agreements should cover environmental performance targets, monitoring and penalties for non-compliance, and potential role of the pollution control manager • Publicize commercial benefits, replicate, and extend principle to pollution control in general	MWEP, MIR, Industry		✔	2003 to 2004
D4. Strengthen waste inspection capacity at EPIs and Modify ROF and Ministerial Order 541/2000 concerning waste inspection activities	• Review the tasks and responsibilities of the EPI to consider how waste inspection activity can be strengthened at that level • Modify the Inspection Report format and content (shown in Ministerial Order 541/2000) in accord with JICA project recommendation Volume 2 Annexe 4, so that the Inspection Report will contain a more substantial description and analysis with respect to company management of waste – especially hazardous waste. • Modify Ministerial Order and ROF in accord with above • Undertake updated train EPI staff with respect to inspection techniques and assessment of company application documentsing needs assessment. • Development of inspection handbook / manual and associated training materials. Establish a two-weeks training course for all EPI inspectors? • Establish a two-week training course for all EPI inspectors. • Provision of ongoing training using materials developed and capability built.	MWEP	✔	✔	2003 to 2007

Objectives	Actions Required	Actors	Need for Legislative Actions	Need for Technical Assistance	Period
D5. Review policy and penalty rates for enforcing non-compliance	• Develop ToR for technical assistance • Tender, procure consultants, and implement project and approve outputs • Revise and adopt legislation • The ToR needs to take into account previous projects in this subject, other EU experience, and the principles of cost recovery, inflation indexing and costs of damage remediation. Institutional changes will be required to support the need for a stronger enforcement policy.	MWEP	✔	✔	2004 to 2005
D6. Review EPI waste management staff requirements and performance indicators	• Legislative analysis of tasks and responsibilities • Review of activities to establish priority needs and performance indicators • Evaluation of time required for implementation of all activities and staffing requirements • Budget application, recruitment and training of new staff to strengthen waste inspection (give an inspection right to waste section)	MWEP	✔	✔	2003 to 2004
E. Prevention					
E1. Diffuse waste minimization and improved treatment practice in specific industries	• Identify all companies with metal finishing process (use chemical suppliers' marketing information for identification) • Implement demonstration projects at metal finishing industry in each region. • Organize workshops in each region for diffusion of good practice.	MIR, Industry		✔	2004 to 2006
E2. Establish a bottom up and practical approach for diffusion of IPPC	• Implement IPPC demonstration projects at selected enterprises. • Work with enterprises to identify their environmental effects and utilise and develop their existing production management systems to address environmental effects and to demonstrate their efficient use of resources as required by IPPC • Identify drivers and barriers and ways to overcome them based on E1 and E2 demonstration project. • Formulate a practical strategy for diffusion of IPPC across other industry sectors.	MIR, Industry		✔	2004 to 2006
E3. Diffuse "Responsible Care" and "Voluntary Environmental Management" to chemical industry and petro-chemical industry	• Identify all major chemical and petro-chemical companies (use FEPACHIM for identification) • Implement demonstration projects in each region. • Organize workshops in each region for diffusion.	MIR, Industry		✔	2003 to 2005
E4. Phase out/ban certain hazardous chemicals	• Implement a study using FEPACHIM. • Make legislation.	MWEP MIR	✔	✔	2003 to 2004

Objectives	Actions Required	Actors	Need for Legislative Actions	Need for Technical Assistance	Period
F. Recycling					
F1. Promote introduction of hazardous waste audit	• Prepare practical manual for hazardous waste audit by generators • Establish programme for planning, implementation and reporting system • Organise information seminar, workshops and training for priority HW generators • Implement hazardous waste audit • Organise workshops of good practise of hazardous waste audit to other HW generators • Disseminate hazardous waste audit to other generators	MWEP /MIR EPIs Generators			2003 to 2005
F2. Promote off-site recycling using existing smelter	• Develop ToR for TA activities • Select TA contractor • Development of project concepts • Development of package of support measures to assist potential recyclers • Conduct of feasibility study and conceptual designs • Facility detail design and development	MIR, non-ferrous metal smelters(Potential recyclers), Consultants			2003 to 2005
G. Treatment and Disposal					
G1. Promote treatment/thermal recycling of hazardous waste at cement kilns	• Organise seminars for hazardous waste generators awareness raising (to create/increase demand for waste treatment services) • Make TV/other media advertisements for stopping illegal use/treatment of waste oil, acid tar and other hazardous waste. • Implementing programme aimed at identifying improper use of waste oils and other organic wastes. Conduct a feasibility study for treatment service in collaboration with the cement industry. • Development of cement kiln incineration guidelines with waste derived fuel (WDF) protocol. • Integrate awareness raising with normal EPI inspection activities (one element of training in D3). • Agreement of amended compliance programmes (as necessary) for major oily waste generators. • Development of cement kiln facilities for accepting hazardous waste: - Conduct detailed generation survey focus on cement plant utilization - Examine facility improvement plan for hazardous waste acceptance - Facility detail design and development	MIR MWEP Industry	✔		2004

Objectives	Actions Required	Actors	Need for Legislative Actions	Need for Technical Assistance	Period
G2. Promoted Development of necessary dedicated treatment facilities to include physical/chemical treatment and stabilisation of predominantly inorganic wastes	• Identification of potential facility developers (among existing WM contractors). • Organise seminars for hazardous waste generators awareness raising jointly with G1. • Organise seminars for waste management companies - awareness raising jointly with G1. • Development of package of support measures to assist potential developers (including economic instruments).Conduct a feasibility study jointly with G1. • Development of project concepts / feasibility reports and conceptual designs for two regional facilities. • Facility detailed design and development, EIAs, licensing / permitting. • Facility commissioning.	MIR, Industry,		✔	2003 to 2005
G3. Develop landfill sites for hazardous waste	• Development of Terms of Reference for Feasibility Study. • Organise seminars for hazardous waste generators awareness raising jointly with G1 and G2. • Conduct a feasibility study and organise seminars jointly with G1 and G2. • Site selection for Landfill (or existing landfills for dedicated hazardous waste cells). • Commence development of landfill (or dedicated cells on existing sites)	MWEP, MIR, Industry, (see note 1)		✔	2004 to 2007
G4. Develop medical waste incineration	• Complete the feasibility study currently being undertaken by ICIM. • Implement the recommendations of the feasibility study. • Commission medical waste management facilities.	MoHF, ICIM, Developers (see note 1)	✔	✔	2003 to 2007
G5. Evaluation of options for PCB destruction and support to implementation of GD 173/2000	• Develop ToR for technical assistance • Include selective verification of PCB register by site visits, and sampling and measurement of ambient PCB levels • PCBs present a very significant environmental and health risk. There are significant quantities in Romania. The issue needs better definition to quantify the risk and technical assistance would be beneficial because of the specialist nature of this subject similar to the `obsolete' pesticides in G6.	MWEP	✔	✔	2004 to 2005
G6. Dispose of obsolete pesticide	• Implementation of EU Phare 2002 application for disposal of obsolete pesticides	MAFF, MWEP		✔	2003 to 2006

Objectives	Actions Required	Actors	Need for Legislative Actions	Need for Technical Assistance	Period
H. Historical Waste and Hazardous Waste Storage Sites					
H1. Legislative and institutional actions to prepare a policy of management of historical hazardous waste contaminated sites in Romania	• Prepare and issue a new ministerial order about historical contaminated sites (where a large amount of historical waste is stored or deposited.) • Nominate one person in charge of contaminated sites in MWEP • Establish national working group on contaminated sites • Establish responsibilities of local government authorities • Register historical contaminated sites in the cadastre documents should be regulated • Establish a system of approval of plans of investigation and rehabilitation • Make a statement of implementation of the action program set up under Decision 118/2002 • Carry out a study of funding system for financing remediation and cleanup of orphan sites	MWEP County Councils	✔		2003 to 2007
H2. Actions for constitution of a database, diffusion of data, preparation of technical guidelines, and awareness raising	• EPIs will prepare preliminary inventory of contaminated sites. • MWEP/ICIM will prepare a national inventory of contaminated sites. • MWEP will carry out an awareness heightening program for EPI staff. • EPIs will include contaminated sites inventory in the environmental statement white books and waste management plans. • Make data available to the public through internet web site • Prepare national technical guidelines for inventory of contaminated sites • Prepare national technical guidelines for assessment and remediation measures	MWEP EPI			2003 to 2007
H3. Actions for the development of remediation measures and planning of cleanup projects	• Require companies to include information on historical hazardous waste dumps or deposits of the company in their waste management plans. • Require contaminated site owners to monitor impacts of contaminants on soil and groundwater. • EPIs will inspect historical hazardous waste deposit sites as part of their inspection activity. • EPIs will require local governments to carry out surveys and take appropriate control measures for prioritized sites. Measures may include restriction of land use and water use. • MWEP will prepare preliminary list of national high priority contaminated sites. • MWEP will prepare remediation or cleanup plans and feasibility studies for the high risk priority sites	MWEP EPI			2003 to 2004

Objectives	Actions Required	Actors	Need for Legislative Actions	Need for Technical Assistance	Period
I. Development of Hazardous Waste Management Business					
I1. Promote hazardous waste management business (linked with I2)	• Identify potential developers of hazardous waste management (transport, storage, treatment, recovery, landfill) business. • Use proposed seminars for G1, G2 and G3 for awareness raising of hazardous waste generators (to create and increase demand for the hazardous waste management services) • Use proposed seminars for G1, G2 and G3 for identification of barriers to development of this business • Remove barriers to facilitate start-up of these services	MIR	✔	✔	2004 and ongoing
I2. Assure systems and procedures for hazardous waste (linked with I1) transfer and/or transport	• Draft, adopt and implement all legislation, standards, norms and guidance notes for enabling collection and transport of wastes with particular reference to the below issues: • Temporary storage and reception areas for accumulation of hazardous wastes awaiting collection • Duty of Care on transfer of wastes • Manifest system for supervising, monitoring, recording and reporting of waste transfers • Vehicle specifications and vehicle operations	MWEP and MoT	✔	✔	2003 to 2004
J. Feasibility Study for funding for industrial upgrading					
J1. Conduct a feasibility study for funding for industrial upgrading	• Survey financial requirements for industrial investment in hazardous waste management • Review existing financing mechanisms and need for new institutional arrangements • Study and make recommendations for creation of new financial intermediary or intermediaries • Identify financial, institutional and technical requirements for project effectiveness	MIR MPF MWEP		✔	2003 to 2004

MWEP: Ministry of Waters and Environmental Protection
MIR: Ministry of Industry and Resources
MoHF: Ministry of Health and Family
MAFF: Ministry of Agriculture, Food and Forestry
MPF: Ministry of Public Finance
Note:
Actors noted are those with main responsibility for making decision to enable Actions to be done; Ministries generally have responsibility for these policy and strategic decisions but activities would be done by others.

9.4 Outline of Each Action

This section provides and outline of each action listed in the previous section.

Outline of Action A1

1. Objective/Title of Action	A1. Complete and adopt the output of this Study Project, the National Hazardous Waste Strategy and Plan & Implement the Action Plan		
2. Actor(s)	MWEP, other Ministries and Government & Economic enterprises		
3. Activities/ Description	Activity	Actor(s)	Target
	• Dissemination & consultation		2003
	• Approve and issue supporting legislation		2003
	• Acquire the budget for the implementation		2003 – 2005
	• Implement the Plan		2003 – 2008
4. Need for Technical Assistance	Not required for this action, but potential for technical assistance for some of the Actions specified within this Strategy and Plan. Required for implementation of certain Actions. See each Action Plan.		
5. Action Period	2003 to 2008		
6. Estimated Cost	N/a		
7. Cost Details	N/a		

Outline of Action A2

1. Objective/Title of Action	A2. Develop and implement `sectoral strategies and plans' listed in Law 426/2001 to support NEAP and National Waste Management Strategy and Plans		
2. Actor(s)	MWEP and other Ministries		
3. Activities/ Description	Activity	Actor(s)	Target
	• In accord with Waste Law for medical care waste	MoHF	2004~2007
	• In accord with Waste Law for the management of various types of industrial waste and for environmental rehabilitation	MoIR	2004~2007
	• In accord with Waste Law for waste management including that resulting from transport and ancillary activities	MoPWTH	2004~2007
	• In accord with Waste Law for the management of the waste generated by the agriculture and food industry	MoAAF	2004~2007
	• In accord with Waste Law for the management of the waste generated in the military field	MoND	2004~2007
4. Need for Technical Assistance	Not especially required for this action, but could be beneficial in specialist sectors.		
5. Action Period	2004 to 2007		
6. Estimated Cost	N/a		
7. Cost Details	Subject to Terms of Reference		

Outline of Action A3

1. Objective/Title of Action	A.3 Review these National level Waste Strategies and Plans in accord with Law 426/2001 (every 5 years) and in accord with updated NEAP and current Romanian Strategy for Sustainable Development		
2. Actor(s)	MWEP has primary responsibility		
3. Activities/ Description	Activity	Actor(s)	Target
	• Establish Steering Committee [SC]and Working Group(s) [WG] including national, regional and local representatives, based on organisations with responsibilities under Law 426/2001 with responsibility for implementation, monitoring and review of Strategy and Plans	MWEP	2004
	• Establish Hazardous Waste Working Group	SC	2004
	• Review and report to SC Actions and Measures taken, and Performance Indicators	WG	Annually from 2004
	• Monitor EU proposals regarding hazardous wastes for implications on industrial and hazardous waste management strategy and plans.	WG	Ongoing
	• Review and issue revised Hazardous Waste Management Strategy and Plan	SC & WG	2006
	• Review and issue revised Hazardous Waste Management Strategy and Plan	MWEP	2007
4. Need for Technical Assistance	Potential for assistance. Technical assistance would be beneficial because of the specialist nature of this subject.		
5. Action Period	2004 to 2007 and ongoing		
6. Estimated Cost	N/a		
7. Cost Details	Subject to Terms of Reference		

Outline of Action B1

1. Objective/Title of Action	B1. Complete and approve all secondary legislation on hazardous waste according to the requirements of the Waste Laws, including 426/2001		
2. Actor(s)	MWEP has primary responsibility		
3. Activities/ Description	Activity	Actor(s)	Target
	• Analysis of all waste related legislation for requirements for supporting legislation, standards and norms		2004
	• Prioritise tasks in accord with legislative and risk criteria and develop work programme and identify `authors'		2004
	• Develop ToR for tasks to be sub-contracted, implement work programme, monitor, and review		2004
	• Adopt and implement outputs		2004
4. Need for Technical Assistance	These activities should be achievable without further technical assistance. The activities should be integrated into the ongoing MWEP legislative programme.		
5. Action Period	Permanently		
6. Estimated Cost	N/a		
7. Cost Details	N/a		

Outline of Action B2

1. Objective/Title of Action	B2. Prepare technical guidance notes to support the hazardous waste legislation		
2. Actor(s)	MWEP has primary responsibility		
3. Activities/ Description	Activity	Actor(s)	Target
	• Analysis of all waste related legislation for requirements for guidance to support legislation		
	• Prioritise tasks in accord with legislative and risk needs assessment, and develop work programme and identify `authors'		
	• Develop ToR for tasks to be sub-contracted, implement work programme, monitor, and review		
	• Disseminate and provide to support training programmes		
The following will be the minimum requirements to meet this need	• Licensing, inspection and enforcement procedures • Correct identification and classification and reporting of hazardous wastes • Environmentally sound waste minimsation, recovery and re-use • Environmentally sound disposal • Waste generator hazardous waste management plans • County and regional level hazardous waste management plans		
4. Need for Technical Assistance	Potential for assistance. Technical assistance would be beneficial because of the specialist nature of this subject. These activities should be integrated into the ongoing EPI needs assessment and training programme.		
5. Action Period	2004 to 2005		
6. Estimated Cost	N/a		
7. Cost Details	Subject to Terms of Reference		

Outline of Action C1

1. Objective/Title of Action	C1. Improve quality of data input to national hazardous waste data management system		
2. Actor(s)	MWEP has primary responsibility		
3. Activities/ Description	Activity	Actor(s)	Target
	• Issue a guidance note on waste identification and classification based on JICA PROJECT recommendation.		2003
	• Modify company data format sheet to make a clearer distinction between waste flow and stock, between hazardous and non-hazardous, and between outgoing waste and those internally managed.		2004
	• Disseminate the above guidance note and new data format to EPIs and enterprises through regional seminars.		2004
See also C2	• Integrate this system with Action C2		2004

4. Need for Technical Assistance	These activities should be achievable without further technical assistance. JICA PROJECT recommended guidance note is provided in Volume 2, Annexe 1. Refer also to ongoing TA from German and Italian Twinning projects.
5. Action Period	2003 to 2004
6. Estimated Cost	N/a
7. Cost Details	N/a

Outline of Action C2

1. Objective/Title of Action	C2. Develop National Waste Management Information System (WMIS)		
2. Actor	MWEP, EPIs, consultants		
3. Activities/ Description	Activity	Actor	Target
	• Development of concept and ToR for WMIS development.	MWEP	3rd Qtr 2003
	• Select consultant to undertake feasibility study.	MWEP	4th Qtr 2003
	• Preparation of Detailed Design for WMIS.	Developers	1st Qtr 2004
	• Application development.	Developers	4th Qtr 2004
	• Hardware and system software procurement.	Developers	3rd Qtr 2005
	• System testing and completion.	Developers	4th Qtr 2006
	• Installation and Training.	Developers	1st Qtr 2007
	• Initial data input reporting.	EPIs / MWEP	2nd Qtr 2007
4. Need for Technical Assistance	Potential for assistance: Foreign technical assistance could be useful to support all of the activities from conceptual design through to installation and training. Background and Necessity: Good planning is dependant upon having good information. In addition, a WMIS is a valuable tool supporting implementation of effective regulation and control. Such a WMIS should feature components at National and Regional level and may be internet-based enabling centralized management and support. Such a system could also fulfill Romania's future obligations for hazardous waste reporting to the EU. There are some Romanian consultants/technology suppliers who are capable of providing technologies but the application design and development is a specialist activity requiring experienced technical assistance.		
5. Action Period	2003 – 2007		
6. Estimated Cost	US$ 1,200,000 approx. + Romanian administrative costs		
7. Cost Details	1. Conceptual design, detailed design and application development = US$ 800,000 (foreign consultants in partnership with local software developer). 2. Hardware procurement = US$ 300,000 3. System software = US$ 50,000. 4. Installation and training = US$ 50,000. 5. In addition, there are ongoing operational costs associated with maintaining the internet server and the client systems.		

Outline of Action C3

1. Objective/Title of Action	C3. Modify requirement on information to be submitted by enterprises for authorisation to include waste management plan		
2. Actor(s)	MWEP has primary responsibility		
3. Activities/ Description	Activity	Actor(s)	Target
	• Prepare guidance for company waste management plan based on JICA PROJECT recommended guide, and provide EPIs with the guidance.		2003
See also B2	• Amend and issue legislation		
	• Require enterprises to submit a waste management plan.	EPIs & Enterprises	2004
	•		
4. Need for Technical Assistance	These activities should be achievable without further technical assistance. JICA PROJECT recommended guidance note is provided in Volume 2, Annexe 2		
5. Action Period	2003 to 2004		
6. Estimated Cost	N/a		
7. Cost Details	N/a		

Outline of Action C4

1. Objective/Title of Action	C4. Investigation of possibilities for establish a forum (Federation) for advancing the scientific, technical and practical aspects of wastes management for the safeguarding of the environment; promoting education, training, research and the dissemination of knowledge in all matters of wastes management		
2. Actor(s)	MWEP has primary responsibility for catalysing forum		
3. Activities/ Description	Activity	Actor(s)	Target
	• Verify objectives and develop Terms of Reference and constitutional requirements by comparison with other national & international organisations		
	• Review constitution and situation of existing organisations and decide whether to start a new organisation or develop an existing one.		
	• Develop and implement institutional development plan	`Federation'	
4. Need for Technical Assistance	These activities should be achievable without further technical assistance.		
5. Action Period	Not determined but 2004 advised		
6. Estimated Cost	N/a		
7. Cost Details	N/a		

Outline of Action D1

1. Objective/Title of Action	D1. Check legal/illegal status of existing industrial waste storage, treatment and disposal sites		
2. Actor	MWEP, EPIs		
3. Activities/ Description	Activity	Actor	Target
	• Prepare a practical guidance note for EPIs for identifying legal/illegal status of the existing storage/deposit sites.	MWEP	4th Qtr 2003
	• Establishment of programme for site identification, integrated with normal inspection activities.	EPIs	1st Qtr 2004
	• EPIs to inspect sites and check legal/illegal status, and establish legal status.	EPIs	2nd Qtr 2004, ongoing
	• Establishment of programme for upgrading operational sites in order to bring under them proper control.	EPIs	3rd Qtr 2004, ongoing
	• Development of "Compliance Programme" type agreements with site owners / operators.	EPIs	4th Qtr 2004
	• Impose "Compliance Programmes" on site owners / operators.	EPIs	1st Qtr 2005
	• Monitor compliance, taking enforcement action as necessary.	EPIs	Ongoing
4. Need for Technical Assistance	These activities should be achievable without further technical assistance. The activities should be integrated into the normal EPI inspection activities.		
5. Action Period	2003 – 2005		
6. Estimated Cost	N/A		
7. Cost Details	N/A		

Outline of Action D2

1. Objective/Title of Action	D2. Re-commission the existing on-site waste treatment facilities within factories / upgrading facilities to required standards		
2. Actor	MWEP, MoIR, Industry, EPIs		
3. Activities/ Description	Activity	Actor	Target
	• Prepare a guidance note for EPIs for enforcing the re-commissioning of on-site treatment facilities.	MWEP	1st Qtr 2004
	• Establishment of programme for site identification, integrated with normal inspection activities.	EPIs	2nd Qtr 2004
	• EPIs to inspect sites and identify non-compliant plant and equipment necessary for environmentally sound waste management.	EPIs	Ongoing (large sites by 2nd Qtr 2005)
	• Development of "Compliance Programme" type agreements necessary to reactivate, refurbish, upgrade or replace treatment plant and equipment.	EPIs	4th Qtr 2005, ongoing
	• Impose "Compliance Programmes" on site owners / operators.	EPIs	1st Qtr 2006, ongoing
	• Review of progress on compliance / revision of programmes.	EPIs	Annual
	• Closure of non-compliant facilities	EPIs	Ongoing as necessary.
Note that the timeframe for upgrading facilities such as incinerators to EU standards should follow the government's established programme.			
4. Need for Technical Assistance	These activities should be achievable without further technical assistance. The activities should be integrated into the normal EPI inspection activities.		
5. Action Period	Permanent		
6. Estimated Cost	N/A		
7. Cost Details	N/A		

Outline of Action D3

1. Objective/Title of Action	D3. Model Voluntary Agreements		
2. Actor(s)	MWEP, MIR, Industry		
3. Activities/ Description	Activity	Actor(s)	Target
	• Identify one or more industrial operations, which at the plant level are now, or could be in the fairly short term, models of how hazardous waste should be disposed of, or treated, or where hazardous waste is reduced or eliminated by clean production technologies.	MWEP, MIR, Industry	Q4 2003
	• Based upon similar agreements in Japan and the EU, develop form of legal agreement to be drawn up between the company concerned and an appropriate government agency, either a local government of national level ministry	MWEP, MIR, Industry	Q2 2004
	• The agreement should include precise targets about the level and quality of hazardous waste standards and management techniques, provision for random monitoring and inspection, and penalties for non-compliance. Such targets and conditions should be at least as high as national standards and preferably even higher.	MWEP, MIR, Industry	Q2 2004
	• The system of voluntary agreements should be highly publicized as an example of efficient and modern management, with considerable commercial benefits, and aimed at widespread replication in Romanian industry, and extension to pollution control in general	MWEP, MIR, Industry	Q3 2004
4. Need for Technical Assistance	Minimal. Note that in Romania there is no legal provision in this field. Note also: http://reports.eea.eu.int/92-9167052-9		
5. Action Period	2003-4		
6. Estimated Cost	Minimal		
7. Cost Details			

Outline of Action D4

1. Objective/Title of Action	D4. Strengthen waste inspection capacity at EPIs & modify ROF and MO 541/2000 concerning waste inspection activities		
2. Actor	MWEP, EPIs, consultants		
3. Activities/ Description	Activity	Actor	Target
	• Develop ToR for Inspection Strengthening TA	MWEP	3rd Qtr 2003
	• Review the tasks and responsibilities of the EPI to consider how waste inspection activity can be strengthened at that level		
	• Modify the Inspection Report format and content (shown in Ministerial Order 541/2000) in accord with JICA project recommendation Volume 2 Annexe 4, so that the Inspection Report will contain a more substantial description and analysis with respect to company management of waste – especially hazardous waste.		
	• Modify Ministerial Order and ROF in accord with above		
	• Undertake updated training needs assessment.	MWEP / consultants	3rd Qtr 2004
	• Development of inspection handbook / manual and associated training materials.	Consultant / MWEP / EPIs	2nd Qtr 2005
	• Establish a two-week training course for all EPI inspectors.	Consultant / MWEP	3rd Qtr 2006, ongoing
	• Provision of ongoing training using materials developed and capability built.	MWEP / EPIs	4th Qtr 2007, ongoing
	•		
4. Need for Technical Assistance	Potential for assistance: Technical assistance would be beneficial because of the specialist nature of this subject and the urgent needs of MWEP for implementation of the EU Waste Directives. Background and Necessity: An inspector's manual / handbook and training will greatly improve the effectiveness of the implementation of the regulation and control system. Effective implementation is a key driver in improving environmental performance of industry. Foreign consultants with experience of implementation of regulatory systems and training are needed to work with local consultants to develop effective handbooks and training materials. Foreign consultants, working with local consultants to undertake the training will build capacity for ongoing provision by local consultants unassisted. This activity has a link with Phare 2000 Phare Project RO 0006.14.03, Technical Assistance for Strengthening the Local Environmental Protection Inspectorates (LEPIs) and Developing Regional Environmental Protection Inspectorates (REPIs).		
5. Action Period	2003 – 2007		
6. Estimated Cost	Total US$ 820,000		

7. Cost Details	1. Fee for foreign consultants US$ 25,000/man-month x 4 consultants x 4 months = US$ 400,000 US$ 25,000/man-month x 3 consultants x 1 months = US$ 75,000 2. Fee for Romanian consultants US$ 2,000man-month x 4 persons x 6 months = US$ 48,000 3. International travel costs and daily allowance, and administrative costs = US$ 150,000 4. Training venue and equipment hire costs = US$ 72,000 5. Internal travel costs and subsistence for course attendees = US$ 75,000

Outline of Action D5

1. Objective/Title of Action	D5. Review policy and penalty rates for enforcing non-compliance		
2. Actor(s)	MWEP has primary responsibility		
3. Activities/ Description	Activity	Actor(s)	Target
	• Develop ToR for technical assistance if required		
	• Tender, procure consultants, and implement project (see below)		
	• Revise and adopt legislation		
4. Need for Technical Assistance	Technical assistance would be beneficial because this is an urgent issue that needs to be addressed. The ToR needs to take into account previous projects in this subject, other EU experience, and the principles of cost recovery, inflation indexing and costs of damage remediation. Institutional changes will be required to support the need for a stronger enforcement policy.		
5. Action Period	2004 to 2005		
6. Estimated Cost	US$ 250,000 to 350,000		
7. Cost Details	18 month project with 9 months foreign expert + 15 months Romanian expert.		

Outline of Action D6

1. Objective/Title of Action	D6. Review EPI waste management staff requirements and performance indicators		
2. Actor(s)	MWEP has primary responsibility		
3. Activities/ Description	Activity	Actor(s)	Target
	• Legislative analysis of tasks and responsibilities		
	• Review of activities to establish priority needs and performance indicators		
	• Evaluation of time required for implementation of all activities and staffing requirements		
	• Budget application, recruitment and training of new staff		
4. Need for Technical Assistance	Potential for assistance. Technical assistance would be beneficial because of the specialist nature of this subject and the urgent needs of MWEP for implementation of the EU Waste Directives. This activity has a link with Phare 2000 Phare Project RO 0006.14.03, Technical Assistance for Strengthening the Local Environmental Protection Inspectorates (LEPIs) and Developing Regional Environmental Protection Inspectorates (REPIs)		
5. Action Period	2003 to 2004		
6. Estimated Cost	N/a		
7. Cost Details	Subject to terms of reference		

Outline of Action E1

1. Objective/Title of Action	E1. Diffuse waste minimization and improved treatment in specific industries		
2. Actor	MIR, Industry		
3. Activities/ Description	Activity	Actor	Target
	• Identify all companies with metal finishing process (use chemical suppliers' marketing information for identification)		1st Qtr 2004
	• Implement demonstration projects at metal finishing industry in each region.		4th Qtr 2004
	• Organize workshops in each region for diffusion of good practice.		1st Qtr 2006
4. Need for Technical Assistance	Necessary. Foreign technical assistance needed for the following activities: 1. Diffusion of integrated waste management approach with waste prevention and treatment 2. Training of Romanian consultants and engineers 3. Promotion of development of waste management equipment industry Background and Necessity: There are some Romanian consultants/technology suppliers who are capable of giving advices on specific aspect such as effluent treatment. But there is almost nobody who are capable of planning and advising on integrated approach for pollution prevention and control with energy and water saving (IPPC). It is true that there are many guidelines available with respect to IPPC on international websites. However, for the diffusion of IPPC practice in Romania, a bottom up and practical approach is necessary. This proposed assistance will adopt such approach based on experience gained from implementation of Pilot Project 2 of the current study.		
5. Action Period	2004 – 2006		
6. Estimated Cost	US$ 1,500,000 approx. + Romanian administrative costs		
7. Cost Details	1. Implementation of demonstration projects 2. US$ 25,000/enterprise x 20 enterprises = US$ 500,000 3. Seminars: US$3,000/seminar x 5 seminars = US$ 15,000 4. Fee for foreign consultants: US$25,000/man-month x 4 consultants x 6 months = US$ 600,000 5. Fee for Romanian consultants: US$ 2,000man-month x 4 persons x 18 months = US$ 144,000 6. International travel costs and daily allowance, and administrative costs = US$ 241,000 Details of Item 5: Trips:US$ 5,000/trip x 4 consultants x 5 trips/consultant = US$ 100,000; Allowance: US$ 150/day x 150 days/consultant x 4 consultants = US$ 90,000 Others: US$ 51,000		

Outline of Action E2

1. Objective/Title of Action	E2. Establish a bottom up and practical approach for diffusion of IPPC		
2. Actor	MIR, Industry		
3. Activities/ Description	Activity	Actor	Target
	• Implement IPPC demonstration projects at selected enterprises.		1st Qtr 2004
	• Work with enterprises to identify their environmental effects and utilise and develop their existing production management systems to address environmental effects and to demonstrate their efficient use of resources as required by IPPC		4th Qtr 2004
	• Identify drivers and barriers and ways to overcome them based on E1 demonstration project.		1st Qtr 2006
	• Formulate a practical strategy for diffusion of IPPC for selected industry		
4. Need for Technical Assistance	This Action is already planned in German Twinnning. There is also a Phare tender for TA to IPPC in Romania involving case study applications in 10 Judets.		
5. Action Period	US$ 1,500,000 approx. + Romanian administrative costs		
6. Estimated Cost	1. Implementation of demonstration projects US$ 100,000/enterprise x 5 enterprises = US$ 500,000 2. Seminars: US$3,000/seminar x 5 seminars = US$ 15,000 3. Fee for foreign consultants: US$25,000/man-month x 4 consultants x 6 months = US$ 600,000 4. Fee for Romanian consultants: US$ 2,000man-month x 4 persons x 18 months = US$ 144,000 5. International travel costs and daily allowance, and administrative costs = US$ 241,000 Details of Item 5: Trips:US$ 5,000/trip x 4 consultants x 5 trips/consultant = US$ 100,000; Allowance: US$ 150/day x 150 days/consultant x 4 consultants = US$ 90,000 Others: US$ 51,000		

Outline of Action E3

<table>
<tr><td>1. Objective/Title of Action</td><td colspan="3">E3. Diffuse “Responsible Care” and “Voluntary Environmental Management” to chemical industry and petro-chemical industry</td></tr>
<tr><td>2. Actor</td><td colspan="3">FEPACHIM, Industry, MIR</td></tr>
<tr><td rowspan="8">3. Activities/ Description</td><td>Activity</td><td>Actor</td><td>Target</td></tr>
<tr><td>• Initiate preparatory activity of Responsible Care with selected chemical companies. Prepare draft report and responsible care code.</td><td>FEPACHIM and selected companies</td><td>1st Qtr 2003</td></tr>
<tr><td>• Apply for membership of International Responsible Care Council (IRCC).</td><td>FEPACHIM</td><td>2nd Qtr 2003</td></tr>
<tr><td>• Provision of initial funding for Responsible Care activity</td><td>MIR or Donor</td><td>2nd-3rd Qtr 2003</td></tr>
<tr><td>• Establish Responsible Care Council of Romania (RCCR).</td><td>FEPACHIM and selected companies</td><td>4th Qtr 2003</td></tr>
<tr><td>• Organise dissemination seminar /workshops and invitation activity for new member company.</td><td>RCCR</td><td>4th Qtr 2003-onward</td></tr>
<tr><td>• Continue implementation of Responsible Care in member companies and invitation to new member</td><td>RCCR and member companies</td><td>2004 onward</td></tr>
<tr><td>• Establish self-funding by the member companies for all activity.</td><td>RCCR and member companies</td><td>2004 or 2005</td></tr>
<tr><td>4. Need for Technical Assistance</td><td colspan="3">Potential for assistance:
Foreign technical/financial assistance could be useful to support FEPACHIM and member companies in initial stage. CEFIC and JICA had provided some assistance.

Background and Necessity:
Voluntary activity of chemical sector is important in HWM. In global context, Responsible Care is such activity by industry. Romania is the only country in CEEC who still does not start Responsible Care.</td></tr>
<tr><td>5. Action Period</td><td colspan="3">2003 – onward</td></tr>
<tr><td>6. Estimated Cost</td><td colspan="3">US$ 148,000</td></tr>
<tr><td>7. Cost Details</td><td colspan="3">1. Financial assistance to FEPACHIM and later to RCCR secretariat for initial two year period. US$2,000/month x 24 months = US$ 48,000
2. Seminar / workshop organization US$3,000 x 10 times = US$ 30,000
3. Preparation of Responsible Care report and technical document (lump sum) US $ 20,000
4. Technical assistance by foreign consultant (lump-sum) US$50,000</td></tr>
</table>

Outline of Action E4

1. Objective/Title of Action	E4. Improvement of hazardous chemical and substance management		
2. Actor	NAHCS(National Agency of Hazardous Chemical and Substances), MIR, MWEP, Industry		
3. Activities/ Description	Activity	Actor	Target
	• Initial operation commencement of NAHCS.	NAHCS, MIR	1st Qtr 2003
	• Co-ordination of NAHCS and MWEP on regulation on hazardous substances	NAHCS, MWEP	2nd Qtr 2003
	• Clarification of hazardous chemical and substances, and related production and consumption in the country to be restricted under EU rules	NAHCS, MWEP	2nd-3rd Qtr 2003
	• Information seminar to the industries on management of hazardous chemical and substances	NAHCS, MIR and MWEP	4th Qtr 2003
	• Introduction of MSDS (material safety data sheet) and registry system for hazardous chemical and substances in industry	NAHCS, MIR, MWEP and Industry	2004
4. Need for Technical Assistance	Potential for assistance: Foreign technical/financial assistance could be useful to support NAHCS. There is an Austrian Twinning programme providing TA for Chemicals to MoWEP Background and Necessity: Hazardous chemical and substance management is important in hazardous waste prevention and minimization. Initial importance is on the improved management on chemical substance management such as use of MSDS. In this connection NAHCS has been set up under MIR. The Romanian law has adopted the European Directives (GD 347/2003) regarding the limitation in terms of introducing on the market and using of some hazardous chemical substances and products, GD 124/2003 regarding the prevention, minimization and control of asbestos environmental pollution.		
5. Action Period	2003 – onward		
6. Estimated Cost	US$ 140,000		
7. Cost Details	1. State budget allocation for NAHCS US$? 2. Seminar / workshop organization US$3,000 x 30 times = US$ 90,000 3. Technical assistance by foreign consultant (lump-sum) US$50,000		

Outline of Action F1

1. Objective/Title of Action	F1. Promote introduction of hazardous waste audit		
2. Actor	MWEP, MIR, EPIs, Priority HW generators(PHWG)		
3. Activities/ Description	Activity	Actor	Target
	• Prepare practical manual for hazardous waste audit by generators	MWEP/ MIR	3rd and 4th Qtr 2003
	• Establish programme for planning, implementation and reporting system	MWEP/ MIR	3rd and 4th Qtr 2003
	• Organise information seminar, workshops and training for priority HW generators	MWEP/ MIR	1st and 2nd Qtr 2004
	• Implement hazardous waste audit	PHWG	3rd Qtr 2004
	• Organise workshops of good practise of hazardous waste audit to other HW generators	MWEP/ MIR	1st and 2nd Qtr 2004
	• Disseminate hazardous waste audit to other generators	MWEP/ MIR	2005
4. Need for Technical Assistance	Necessary Some experts		
5. Action Period	2003 – 2005		
6. Estimated Cost	US$ 230,000		
7. Cost Details	1. Fee for foreign consultants (Expert) US$ 25,000/man-month x 2 consultants x 3 months = US$ 150,000 2. International travel costs and daily allowance, and administrative costs = US$ 60,000 3. Training venue and equipment hire costs = US$ 10,000 4. Internal travel costs and subsistence for course attendees = US$ 10,000		

Outline of Action F2

1. Objective/Title of Action	F2. Promote off-site recycling using existing smelter		
2. Actor	MIR, Selected non-ferrous metal smelters (Potential recyclers), Consultants		
3.Activities/ Description	Activity	Actor	Target
	• Develop ToR for TA activities	MIR	4th Qtr 2003
	• Select TA contractor	MIR	4th Qtr 2003
	• Development of project concepts	MIR/Consultants	1st Qtr 2004
	• Development of package of support measures to assist potential recyclers	MIR	2nd Qtr 2004
	• Conduct of Feasibility study and conceptual designs	Consultants	3rd～4th Qtr 2004
	• Facility detail design and development	Consultants	1st～2nd Qtr 2005
4. Need for Technical Assistance	Necessary		
5. Action Period	2003 ～2005		
6. Estimated Cost	US$ 1 Million		
7. Cost Details	1. Development of project concepts; US$ 200,000 6 man-months foreign consultant inputs, 3 man-months local consultant inputs, travel, subsistence and administrative costs 2. Feasibility Study and conceptual designs; US$ 400,000 12 man-months foreign consultant inputs, 6 man-months local consultant inputs, travel, subsistence and administrative costs. 3. Detailed design; US$ 400,000 12 man-months foreign consultant inputs, 6 man-months local consultant inputs, travel, subsistence and administrative costs		

Outline of Action G1

1. Objective/Title of Action	G1. Promote treatment/thermal recycling of hazardous waste at cement kilns		
2. Actor	MWEP, MIR, EPIs, Industry, cement companies		
3. Activities/ Description	Activity	Actor	Target
	• Organise seminars for hazardous waste generators awareness raising (to create/increase demand for waste treatment services).	MWEP / MIR	2nd Qtr 2004
	• Make TV/other media advertisements for stopping illegal use/treatment of waste oil, acid tar and other hazardous waste.	MWEP in collaboration with cement industry	4th Qtr 2004
	• Implementing programme aimed at identifying improper use of waste oils and other organic wastes.	EPIs	4th Qtr 2004
	• Development of cement kiln incineration guidelines with waste derived fuel (WDF) protocol.	MWEP	4th Qtr 2004
	• Integrate awareness raising with normal EPI inspection activities (one element of training in D3).	EPIs	3rd Qtr 2004
	• Agreement of amended compliance programmes (as necessary) for major oily waste generators.	EPIs / MWEP	4th Qtr 2004
	• Annual review / enforcement of compliance programmes.	EPIs / MWEP	Annual
	Development of cement kiln facilities for accepting hazardous waste: • Conduct detailed generation survey focus on cement plant utilization • Examine facility improvement plan for hazardous waste acceptance • Facility detail design and development		
4. Need for Technical Assistance	None necessary – MWEP, MIR, EPIs with the assistance of the cement companies can undertake these activities.		
5. Action Period	2004		
6. Estimated Cost	N/A		
7. Cost Details	N/A		

Outline of Action G2

1. Objective/ Title of Action	G2. Promote development of necessary dedicated treatment facilities to include physical / chemical treatment and stabilisation of predominantly inorganic wastes.		
2. Actor	MWEP, MIR, EPIs, Industry, Waste Management Contractors, Consultants		
3. Activities Description	Activity	Actor	Target
	• Develop ToR for TA activities.	MWEP	3rd Qtr 2003
	• Identify potential facility developers (among existing WM contractors).	EPIs / MWEP	3rd Qtr 2003
	• Organise seminars for hazardous waste generators – awareness raising jointly with G1.	MWEP / MIR	2nd Qtr 2004
	• Organise seminars for waste management companies – awareness raising jointly with G1.	MWEP / MIR	2nd Qtr 2004
	• Select TA contractor	MWEP	2nd Qtr 2004
	• Development of package of support measures to assist potential developers (including economic instruments).	MWEP / MIR	3rd Qtr 2004
	• Development of project concepts/feasibility reports and conceptual designs for two regional facilities.	Developers / EPIs (approvals)	3rd Qtr 2004
	• Facility detailed design and development, EIAs, licensing / permitting.	Developers / EPIs (permitting)	3rd Qtr 2005
	• Facility commissioning.	Developers	4th Qtr 2005
4. Need for Technical Assistance	This facility development could potentially be supported by further Technical Assistance project for example to develop the first two such facilities. If TA is sought it should be sought as a single integrated package as the need is certain. Traditionally an initial TA would undertake a feasibility study which would recommend a further assistance and so on. This multi-stage approach, relevant to the development of large scale national facilities, would be too slow and not relevant to the philosophy of development of simpler, small-scale, flexible regional facilities.		
5. Action Period	2003 – 2005		
6. Estimated Cost	US$ 8.5 million		
7. Cost Details	1. Concept development, feasibility and conceptual design, for two initial regional facilities developed by existing waste management companies = US$ 240,000 (6 man-months foreign consultant inputs, 6 man-months local consultant inputs, travel, subsistence and administrative costs). 2. Support during detailed design stage = US$ 160,000 (4 man-months foreign consultant inputs, 4 man-months local consultant inputs, travel, subsistence and administrative costs). 3. Detailed design, construction and commissioning of two regional treatment facilities = US$ 8,000,000. 4. Maintenance of regional facilities 5% per annum = US$ 400,000 per annum.		

Outline of Action G3

1. Objective/Title of Action	G3. Develop landfill site(s) for hazardous waste		
2. Actor	MWEP, MIR EPIs, Industry, WM companies, Consultants		
3. Activities/ Description	Activity	Actor	Target
	• Development of Terms of Reference for Feasibility Study.	MWEP	1st Qtr 2004
	• Organise seminars for hazardous waste generators awareness raising jointly with G1 and G2.	MWEP / MIR	2nd Qtr 2004
	• Select consultant to undertake feasibility study.	MWEP	2nd Qtr 2004
	• Select TA contractor	MWEP	3rd Qtr 2004
	• Conduct a feasibility study and organise seminars jointly with G1 and G2.	Consultants	1st Qtr 2005
	• Site selection for Landfill (or existing landfills for dedicated hazardous waste cells).	MWEP / EPIs / Consultants	3rd Qtr 2005
	• Commence development of landfill (or dedicated cells on existing sites)	Landfill Operators	2nd Qtr 2006
	• Commencement of landfill operations.	Landfill Operators	1st Qtr 2007
4. Need for Technical Assistance	Hazardous waste landfill development could potentially be supported by further Technical Assistance project for example to develop the first dedicated facility or two dedicated hazardous waste cells at two existing landfills. TA could take the form of an initial feasibility study that would determine the need and feasibility and determine whether the focus should be development of a single dedicated facility or development of cells at existing facilties. This feasibility stage would be followed by a site selection stage that could also be supported by TA. Need to clarify Actors concerning difference between Strategic facilities and those for Enterprises.		
5. Action Period	2003 – 2004		
6. Estimated Cost	US$ 1,540,000 to US$ 3,040,000		
7. Cost Details	1. Feasibility study and concept development = US$ 240,000 (6 man-months foreign consultant inputs, 6 man-months local consultant inputs, travel, subsistence and administrative costs). 2. Site selection = US$ 300,000 (6 man-months foreign consultant inputs, 6 man-months local consultant inputs, travel, subsistence, surveying and administrative costs). 3. Detailed design, construction and commissioning of two regional treatment facilities = US$ 2,500,000. OR: 4. Development of dedicated cells at two existing landfill sites = US$ 1,000,000		

Outline of Action G4

1. Objective/Title of Action	G4. Develop medical waste incineration		
2. Actor	Ministry of Health and Family Planning (MoHFP), ICIM, Economic agents		
3. Activities/ Description	Activity	Actor	Target
	• Complete the feasibility study currently being undertaken.	ICIM	4th Qtr 2003
	• Implement the recommendations of the feasibility study.	MoHF	2004 to 2007
	• Facility commissioning.	Developers	4th Qtr 2007
4. Need for Technical Assistance	It is not appropriate to pre-judge the outcome of the feasibility study currently being undertaken. However, medical waste management facility development could potentially be supported by further Technical Assistance project(s) for example to develop initial facilities. Need also to ensure that there is an operational database for this category of waste, and need to implement recommendations of Belgian project re waste minimisation at source. Note: incineration may be part of national strategy, but this needs justification by comparison with other technologies. Need also to better explain options for incineration by reference to what incineration technologies, what are their viable minimum capacity, capital / operating costs etc.		
5. Action Period	2004 – 2007		
6. Estimated Cost	Will be determined by the feasibility study.		
7. Cost Details			

Outline of Action G5

1. Objective/Title of Action	G5. Evaluation of options for PCB destruction and support to implementation of GD 173/2000		
2. Actor(s)	MWEP has primary responsibility		
3. Activities/ Description	Activity	Actor(s)	Target
	• Develop ToR for technical assistance		
	• Include selective verification of PCB register by site visits, and sampling and measurement of ambient PCB levels		
	• Tender, procure consultants, and implement project		
4. Need for Technical Assistance	PCBs present a very significant environmental and health risk. There are significant quantities in Romania. The issue needs better definition to quantify the risk and technical assistance would be beneficial because of the specialist nature of this subject similar to the `obsolete' pesticides in G6. Recent inventory indicates 1000 tons PCB.		
5. Action Period	2004 to 2005		
6. Estimated Cost	US$ 250,000 to 350,000		
7. Cost Details	18 month project with 9 months foreign expert + 15 months Romanian expert.		

Outline of Action G6

1. Objective/Title of Action	G6. Implementation of EU Phare 2002 application for disposal of obsolete pesticides		
2. Actor(s)	MAFF has primary responsibility		
3. Activities/ Description	Activity	Actor(s)	Target
	• Start tender procedures		Q2 2003
	• Project implementation		Q4 2003
	• Project completion		Q1 2006
4. Need for Technical Assistance	Subject of Phare 2002 project application: Re-packaging, collect and elimination of pesticide residues on the Romanian territory. Note that This Phare project does not include ~1100 te of other obsolete pesticides discovered too late for inclusion in project fiche. Need to extend evaluation to include cement kiln option.		
5. Action Period	2003 to 2006		
6. Estimated Cost	4.8 million Euros		
7. Cost Details	Project Fiche		

Outline of Action H1

1. Objective/Title of Action	H1. Legislative and institutional actions to prepare a policy of management of historical hazardous waste contaminated sites in Romania
2. Actor	MWEP, County Councils
3. Activities/ Description	• MWEP should prepare and issue in 2003 / 2004 a new ministerial order about historical contaminated sites (sites where a large amount of waste or waste materials are deposited or stored for many years), establishing the legal definitions, the obligations of owners, operators, and state for remediation or cleanup, the administrative responsibilities for identification of sites, for approval and for control of management decisions and remediation plans. This order should also include provisions about soil contaminants concentration trigger values specific to the purpose of contaminated sites remediation and cleanup. • MWEP should nominate one person in charge of contaminated sites in the department of hazardous waste management in 2004 • MWEP should set up in 2003/2004 a national working group on contaminated sites with representatives of agencies concerned (for example, Ministry in charge of industry, Ministry in charge of agriculture, Ministry in charge of health, ICIM waste department, ICIM water department, Apele Romane, Institute of pedology, Institute of hydrology and meteorology, EPI inspectors). This working group will promote coordination for a better use of existing data and for identification of appropriate legislative and institutional measures. • ICIM should be responsible for receiving and processing data and preparing inventories of contaminated sites at national level • Responsibility of the local government authorities should be established: County government for planning and implementing measures of investigation, remediation, and cleanup of orphan contaminated sites (no liable accountable party); Municipal government to be aware of historical contaminated sites issues, specially municipal landfills, and recording in cadastre documents. Registrating historical contaminated sites in the cadastre documents should be regulated, like this is already required in the case of closed landfill sites in Decision 162.

	• In case of contaminated sites that will be declared as national priorities by MWEP and will not be possibly managed by responsible parties because of non liability non accountability, MWEP could take direct responsibility for planning assessment studies and rehabilitation works • EPIs should take the responsibility for administrative approval of plans of investigation and rehabilitation of contaminated sites (except for setting national priorities). They should also be held responsible for: a) the control of implementation of investigation and remediation plans; b) the control of environmental conditions of implementation of the remediation measures • MWEP will make in 2003/2004 a statement of implementation of the action program set up under Decision 118/2002 and determine how it could be efficiently coordinated with the task of inventory of contaminated sites. • MWEP will launch a study for funding remediation and cleanup of orphan sites, after establishment of the preliminary inventory of contaminated sites. The study should consider if Apele Romane could constitute and manage a specific financial fund for providing a low interest loan to counties for covering the investigation and remediation cost of orphan contaminated sites, where it is not possible to find liable and accountable polluters
4. Need for Technical Assistance	Not required
5. Action Period	2003 - 2007
6. Estimated Cost	Romanian administrative costs
7. Cost Details	None

Outline of Action H2

1. Objective/Title of Action	H2. Actions for constitution of a database, diffusion of data, preparation of technical guidelines, and awareness raising
2. Actor	MWEP and EPI
3. Activities/ Description	• EPIs will prepare preliminary inventory of contaminated sites in counties on a 2 years period 2004 - 2005. MWEP will prepare an inventory format and guidance note based on corresponding documents proposed by JICA Study Team through Pilot Project 4. (The EPI of Arges county has already proposed its inventory and list of priority sites within the scope of the PP4 project.) • A national inventory of contaminated sites (historical sites and sites in activity) should be prepared and managed by ICIM for MWEP based on counties inventories. The national inventory could be first established in 2005 from preliminary counties inventories, and then consolidated and validated in 2005/2006 according to a format of inventory in MWEP technical guidelines. The inventory of contaminated sites should provide priorities for investigation or remediation. • MWEP will initiate an awareness heightening program for EPI staff in 2003 about the problem of contaminated sites in the form of annual workshops. • Specific sections regarding historical contaminated sites should be included in official environmental statement white books and waste management plans. EPIs will include such section in its annual environmental report with indications about historical waste deposits, levels of contamination, geographical extent, environmental impacts, and remediation actions under way. Counties waste management plans will show advancement of inventory of contaminated sites and remediation plans. The national annual environmental report will make a statement of soil and groundwater quality conditions in relationship with historical waste dumps (2005)

	• After consolidating and validating data in 2005 / 2006 and later, the MWEP will make the data on historical contaminated sites available to the public through its internet web site. • MWEP should issue by 2005 the national technical guidelines for inventory of contaminated sites, and the national technical guidelines for assessment of contaminated sites and remediation measures. Preparation of the guidelines would be done as a result of preliminary inventories, exchange of data and experience at national workshops, validation by experts of the national workgroup on contaminated sites, and conformity with existing requirements (Order 756/1997 about sampling and analysis of soil samples, Decision 118/2002 about methods for risk and environmental impact, EIA and audit procedures, and others).
4. Need for Technical Assistance	Not required EIA component should take account of outputs of ongoing Phare EIA project It is probable that contaminated sites management will be assigned to responsible person in EPI.
5. Action Period	2003 - 2007
6. Estimated Cost	Romanian administrative costs, and cost for workshops US$ 3000/workshop x 3 annual workshops = 9000 US$
7. Cost Details	None

Outline of Action H3

1. Objective/Title of Action	H3. Actions for the development of remediation measures and planning of cleanup projects
2. Actor	MWEP and EPI
3. Activities/ Description	• EPI should start requiring economic agents to include historical hazardous waste dumps or deposits of the company in their waste management plans, and to assess environmental conditions of these sites within the scope of permitting and auditing procedures for obtaining environmental permits. • When potential of historical contamination is identified, EPIs inspectors should require operators to take appropriate monitoring measures of soil and groundwater and include the proposed measures in their compliance program. • The MWEP will require EPI officers to inspect historical hazardous waste deposit sites. • EPI inspectors should start to propose to local authorities, in 2004 to carry out surveys and take appropriate control measures that should be undertaken as soon as possible, such as provision of fences, warning signboards; land use restrictions; containment of mobile contaminants, and others. • Municipal government should take appropriate land use and water use restrictions measures when high risk for public health has been found. • MWEP should issue the preliminary list of national high priority contaminated sites of Romania (sites suspected of serious risk for health and needing priority measures for assessment or remediation), in 2005/2006. Final identification should be done together with approval of the national inventory of contaminated sites in 2006. ICIM should be the appropriate body for preparing the list of priority sites. • MWEP should start feasibility studies for the high risk priority sites in 2005 / 2006 and prepare remediation or cleanup plans.
4. Technical assistance	Not required
5. Action Period	2003 - 2008
6. Estimated Cost	Romanian administrative costs

7. Cost Details	None

Outline of Action I1

1. Objective/Title of Action	I1. Promote hazardous waste management business (linked with I2)		
2. Actor(s)	MIR		
3. Activities/ Description	Activity	Actor(s)	Target
	• Identify potential developers of hazardous waste management (transport, storage, treatment, recovery, landfill) business.	MWEP	2004
	• Use proposed seminars for G1, G2 and G3 for awareness raising of hazardous waste generators (to create and increase demand for the hazardous waste management services)		
	• Use proposed seminars for G1, G2 and G3 for identification of barriers to development of this business		
	• Remove barriers to facilitate start-up of these services		
4. Need for Technical Assistance	These activities should be achievable without further technical assistance. This activity should include experience gained by REMATS, by acid battery and used oil transporters, and from the EU LIFE project in Caras Severin.		
5. Action Period	2004 and ongoing		
6. Estimated Cost	N/a		
7. Cost Details	N/a		

Outline of Action I2

1. Objective/Title of Action	I2. Assure systems and procedures for hazardous waste transfer and/or transport (linked with I1)		
2. Actor(s)	MWEP and MoT		
3. Activities/ Description	Activity	Actor(	Target
	• **Draft, adopt and implement** all legislation, standards, norms and guidance notes for enabling collection and transport of wastes **with particular reference to the below issues:**		
	• Temporary storage and reception areas for accumulation of hazardous wastes awaiting collection		
	• Duty of care on transfer of wastes		
	• Manifest system for supervising, monitoring, recording and reporting of waste transfers		
	• Vehicle specifications		
4. Need for Technical Assistance	These activities should be achievable without further technical assistance. This activity should include experience gained by REMATS, by acid battery and used oil transporters, and from the EU LIFE project in Caras Severin.		
5. Action Period	2003 to 2004		
6. Cost	N/a		
7. Cost Details	N/a		

Outline of Action J1

1. Objective/Title of Action	J1. Conduct a feasibility study for funding for industrial upgrading		
2. Actor(s)	MWEP, MIR, MPF		
1. Activities/ Description	Activity	Actor(s)	Target
	• Conduct market survey of potential demand for financial support for investment in hazardous waste management by industry in light of pollution control legislation as well as opportunities for investment in clean production technology	MWEP, MIR & MPF	Q4 2003
	• Assess capacity of existing financial system and potential role of external donors to make adequate funds available for the above at reasonable cost (interest rates)	MWEP, MIR & MPF	Q4 2003
	• Review alternative financial mechanisms designed to compensate for failure of capital markets to allocate sufficient funds efficiently	MWEP, MIR & MPF	Q4 2003
	• Propose a form of financial intermediary or intermediaries to receive funds from an external donor and on-lend to industrial enterprises for investment in hazardous waste management (treatment, disposal, or environmental projects more generally, including energy efficiency and clean production technologies)	MWEP, MIR & MPF	Q1 2004
	• Identify measures that will have to be taken to ensure effectiveness of the project, including on-lending rates and loan conditions; staffing requirements with expertise in banking and relevant technologies; regulatory and legislative framework; and linkages, as appropriate with existing banking institutions, such as branch banks.	MWEP, MIR & MPF	Q2 2004
	• Reporting requirements and performance indicators	MWEP, MIR & MPF	Q3 2004
2. Need for Technical Assistance	Feasibility study financed by JICA, for possible subsequent intermediary loan.		
3. Action Period	2003-4		
4. Estimated Cost	$US 450,000 Total		
5. Cost Details	10 man months international consultants @ $25,000/man month: 20 man months national consultants @ $3,000/man month: other costs $140,000		

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MoWEP / JICA Study Team

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