

*Policy Paper*

## **Legal and institutional framework for solid waste management in Vietnam**

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### **Abstract**

In 1986, the Government of Vietnam launched a political and economic reform campaign named "Doi Moi" (Renovation) to guide the country from a centrally-planned economy towards a market economy. Since then, Vietnam has opened up its economy and has entered the process of trade liberalization. However, as a result of this rapid success in economic growth, there is a corresponding deterioration in the environment, particularly as a result of increased solid waste. In order to maximize the potential positive impacts but at the same time minimize the negative effects of modernization and industrialization in the country, it is necessary to take immediate measures to protect the environment.

This paper describes how a legal and institutional framework for solid waste environmental management is being developed and implemented in Vietnam. The existing policies and institutional framework that promote the economic transition, as well as environmental management for sustainable development will be reviewed. With these policies, there is a need to identify the most important environmental issues, including problems to be tackled and measures to be taken.

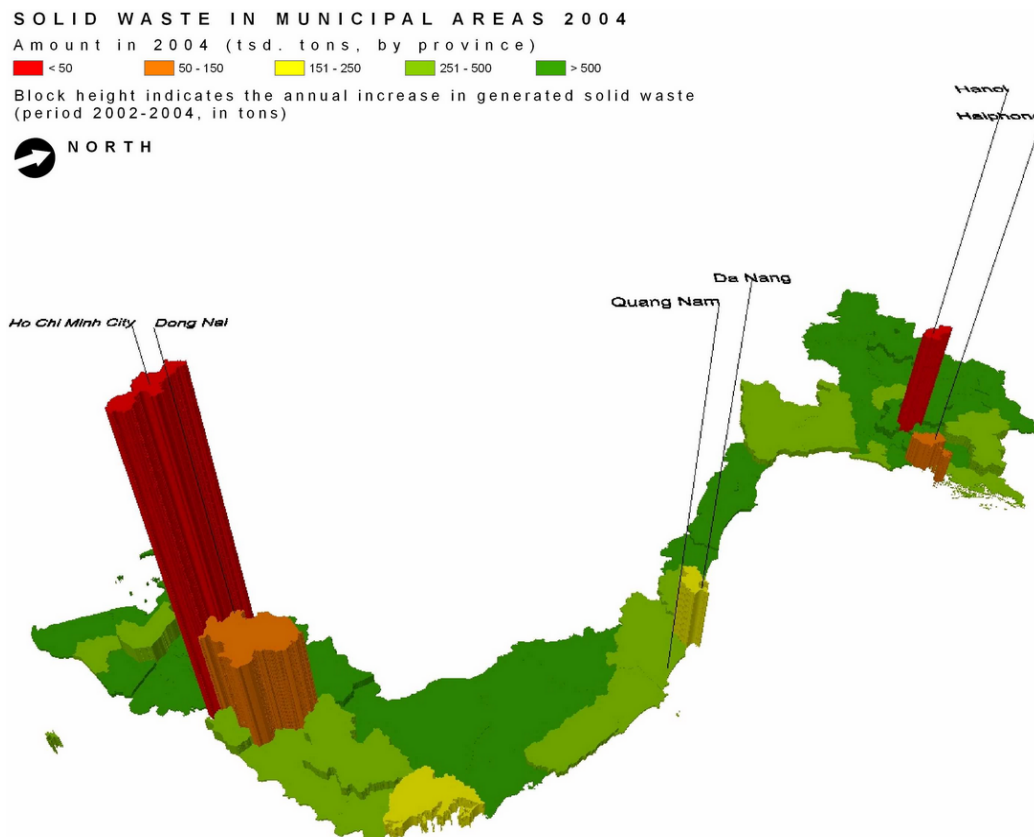
**Keywords:** solid waste management, legal framework, Vietnam.

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## Environmental Issues in Vietnam

Vietnam is the easternmost country on the Indochina Peninsula in Southeast Asia. It is bordered by China to the north, Laos to the northwest, Cambodia to the southwest, and the South China Sea to the east. The area of Vietnam is approximately 330,000km<sup>2</sup> and it is ranked as the 65th largest nation in the world. Currently the national economy heavily relies upon the extraction and use of natural resources. In 2006, the population was approximately 81 million, making Vietnam the 14th most densely inhabited country in the world, which in turn imposes a constant and long lasting pressure on the country's natural resources.

Like many other developing countries, Vietnam has been experiencing various kinds of environmental problems such as deforestation and soil degradation due to logging and slash-and-burn agricultural practices, water pollution by industrial refuse or waste, threats to marine life populations due to overfishing, limits in potable water supply caused by groundwater contamination, acid rain and toxic chemical pollution [1]. In addition, the growth of industrialization in urban centres and the resultant population migration have been damaging to the environment (air pollution, noise pollution and water pollution) [2]. In particular, the amount of solid waste generated in Vietnam has been increasing steadily over the last decade. In 1996, the average amount of waste produced was 5.9 million tons/year. A mere eight years later, average rates of municipal waste were 12.8 million tons per year with industrial and agricultural waste contributing another 2.2 million tons annually. Those numbers are predicted to increase by over 60% before 2010 [3].



**Figure 1. Solid Waste in Municipal Areas in Vietnam, 2004 [4].**

(Source: The International Centre for Environmental Management)

## **Legal Framework for Solid Waste Management in Vietnam**

The Vietnamese government has issued a series of legal instruments stipulating solid waste management to protect the environment. These are listed below.

### ***Environmental protection legislation***

- ✚ [Decree No. 59/2007/NĐ-CP](#) dated April 9, 2007 of the Government promulgating the Regulation on the solid waste management activities, the right and duty of the person related to solid waste management.
- ✚ [Decree No. 81/2006/NĐ-CP](#) dated August 9, 2006 of the Government promulgating the Regulation on sanction against administrative violation in the field of protection of the environment (this decree replaces the decree No. 121/2004/NĐ-CP).
- ✚ [Decree No. 80/2006/NĐ-CP](#) dated August 9, 2006 of the Government detailing the implementation of the law on environmental protection.
- ✚ [Law on Environmental protection](#) dated November 29, 2005, took into effect from July 1, 2006 (this law replaced the Environmental protection law 1993).
- ✚ [Decision No. 153/2004/QĐ-TTg](#) dated August 17, 2004 by the Prime Minister on provision sustainable development in Vietnam.
- ✚ [Decision No. 256/2003/QĐ-TTg](#) dated December 2, 2003 by the Prime Minister on approving the National strategy on Environmental Protection up to year 2010 and Vision to 2020.
- ✚ [Decision No. 64/2003/QĐ-TTg](#) dated April 22, 2003 by the Prime Minister approving the plan for managing the establishments causing seriously environmental pollution.

### ***Solid and hazardous waste legislation***

- [Announcement No. 50/TB-VPCP](#) dated March 19, 2007 on the conclusion of the Prime Minister at the seminar on applying solid waste treatment technologies that were studied in Vietnam.
- [Decision No. 23/2006/QĐ-BTNMT](#) dated December 26, 2006 of the Ministry of Natural Resource and Environment on Promulgating the list of hazardous waste.
- [Circular No. 12/2006/TT-BTNMT](#) dated December 26, 2006 of the Ministry of Natural Resource and Environment on the Instruction of the condition, documentation, registration and code of hazardous waste management.
- [Decree No. 23/2005/CT-TTg](#) dated June 21, 2005 of the Prime Minister on Strengthening the activities on solid waste management in urban areas and industrial zones.
- [Decree No. 13/2003/NĐ-CP](#) dated February 19, 2003 of the Government providing the Provisions for the commodities prescribed as being dangerous/toxic and their transportation via roads.

- [Decision No. 60/2002/QĐ-BKHCHNMT](#) dated August 08, 2002 of the Ministry of Science, Technology and Environment guiding the implementation of hazardous waste burying technique.
- [Circular No. 02/2001/TT-BKHCHNMT](#) dated February 15, 2001 by the Ministry of Science Technology and Environment on Instruction the treatment of waste of special encourages investment.
- [Decision No. 155/1999/QĐ-TTg](#) dated July 16, 1999 of the Prime Minister promulgating the Regulation on hazardous waste management.
- [Decision No. 152/1999/QĐ-TTg](#) dated July 10, 1999 of the Prime Minister approving the National strategy for solid waste management in Industrial and urban areas until 2020.
- [Inter-Ministerial Circular No. 1590/1997/TTLT/BKHCHNMT-BXD](#) dated October 17, 1997 of the Ministry of Construction, and the Ministry of Science, Technology and Environment giving Instruction to implement the directive 199/TTg by the Prime Minister on urgent measure on management solid waste in urban areas and industrial zones.
- [Directive No. 199/TTg](#) dated April 03, 1997 of the Prime Minister on Urgent measures to manage solid waste in urban areas and industrial zones.



**Figure 2. The North West Solid Waste Treatment Complex, Cu Chi District.**



**Figure 3. The Son Tay Solid Waste Treatment Factory**

### ***Toxic substances legislation***

- ❖ [Decision No. 23/2006/QĐ-BTNMT](#) dated December 26, 2006 by the Minister of Ministry of Natural Resource and Environment promulgating the List of hazardous wastes.
- ❖ [Decision No. 1972/1999/QĐ-BKHCHNMT](#) dated November 10, 1999 by the Minister of Ministry of Science, Technology and Environment on Technological procedures applied to disposal of banned plant protection chemicals that content the chlorinated organic compounds.
- ❖ [Decision No. 1971/1999/QĐ-BKHCHNMT](#) dated November 10, 1999 by the Minister of Ministry of Science, Technology and Environment on Technological procedures applied to disposal and reuse of cyanide.
- ❖ [Decision No. 1970/1999/QĐ-BKHCHNMT](#) dated November 10, 1999 by the Minister of Ministry of Science, Technology and Environment on Technological procedures applied

to disposal of banned plant protection chemicals that content the phosphorous organic compounds.

- [Directive No. 29/1998/CT-TTg](#) dated August 25, 1998 of the Prime Minister on Strengthening the management of the use of plant protection chemicals and persistent organic pollutants.

#### ***Medical waste legislation***

- [Decision No. 62/2001/QĐ-BKHCHNMT](#) dated November 21, 2001 promulgating the Technical requirements for incinerators of medical waste.
- [Inter-Ministerial Circular No. 2237/1999/TTLT/BKHCHNMT-BYT](#) dated December 28, 1999 guiding the Implementation of the regulations on safe application of radioactive techniques in medical services.
- [Decision No. 2575/1999/QĐ-BYT](#) dated August 27, 1999 of the Ministry of Health promulgating the Regulations on medical waste management.
- [Official letter No. 4527-ĐTg](#) dated June 08, 1996 of the Ministry of Health guiding Treatment of solid waste from hospitals.

#### ***Legislation on recycling***

- [Decision No. 03/2004/QĐ-BTNMT](#) dated on April 02<sup>nd</sup>, 2004 of Ministry of Natural Resources and Environment on Importing waste as materials for domestic production.
- [Official Letter No. 1146/BKHCHNMT-MTg](#) dated on May 06<sup>th</sup>, 2002 of Ministry of Science, Technology and Environment approving the National action plan for Cleaner Production.

#### ***Legislation on waste management infrastructure facilities***

- [Inter-Ministerial Circular No. 01/2001/TTLT-BKHCHNMT-BXD](#) dated January 18, 2001 guiding the Regulations and environmental protection applied for the space planning of the sitting, construction, and operation of landfills.
- [Inter-Ministerial Circular No. 10/2000/TTBXD](#) dated August 08, 2000 guiding the Preparation of EIA reports for the planning of construction projects, including solid waste management during and after construction.
- [Inter-Ministerial Circular No. 29/1999/QĐ-BXD](#) dated October 22, 1999 promulgating the Regulations of environmental protection applied for the construction sector.



**Figure 4. Burning solid waste at open dump.**



**Figure 5. Waste collection for recycling.**

### *Fees and charges*

- ✓ [Decision No. 13/2007/QĐ-BXD](#) dated April 23, 2007 of the Minister of Ministry of Construction on “Norm of collection, transportation, treatment, landfilling municipal solid waste”.
- ✓ [Circular No. 45/2006/TT-BTC](#) dated May 25, 2006 of the Ministry of Finance to Change and complements the circular 63/2002/TT-BTC on fee and charges.
- ✓ [Circular No. 71/2003/TT-BTC](#) dated July 30, 2003 of the Ministry of Finance Guiding the implementation of the provisions on the fees and charges for solid waste collection and treatment (prescribed as one of “Hygienic services”).
- ✓ [Circular No. 63/2002/TT-BTC](#) dated July 24, 2002 of the Ministry of Finance Guiding the implementation of provisions on fees and charges.
- ✓ [Governmental Decree No. 57/2002/NĐ-CP](#) dated June 03, 2002 providing the details on the Implementation of the Ordinance No. 38/2001/PL-UBTVQH on prescribing fees and charges.
- ✓ [Ordinance No. 38/2001/PL-UBTVQH](#) dated August 28, 2001 of the Standing Committee of the National Assembly on Prescribing fees and charges. This is generally supported by local regulations issues by People’s Councils or Committees.

### *Standards*

- ✚ [TCXDVN 320-2004](#) - Hazardous waste Landfill - Standard for designing.
- ✚ [TCVN 7241-2003](#) - Health care solid waste incinerators - Determination method of dusts concentration in flue gas.
- ✚ [TCXDVN 261-2001](#) - Landfill - Standard for designing.
- ✚ [TCVN 6707-2000](#) - Prevention and warning signs for hazardous waste.
- ✚ [TCVN 6706-2000](#) - Hazardous solid wastes - Classification.
- ✚ [TCVN 6705-2000](#) - Non-hazardous solid wastes - Classification.

✚ [TCVN 6696-2000](#) - Requirements for environmental protection for sanitary landfills.

### ***International conventions***

Vietnam is signatory to a number of major international conventions, of which at least three relate to waste management.

- *Kyoto Protocol and the Clean Development Mechanism (CDM)*. Vietnam ratified the Kyoto Protocol in 2002 and has prepared a National Strategy Study for the CDM that allows industrialized countries to purchase “carbon credits” from projects in developing countries and count those emissions reductions against their commitments. Collection and use of landfill methane is one of the technologies that can financially benefit most under the CDM as it can increase the financial internal rate of return of these types of projects between 5% and 10%.

[Circular No. 10/2006/TT-BTNMT](#) dated on December 12<sup>th</sup>, 2006 by the Ministry of Natural Resource and Environment instruction on the Development of proposal on clean development mechanism (CDM) in the framework of Kyoto protocol.

- *Stockholm Convention on Persistent Organic Pollutants (POPs)*. This convention has been adopted in response to the need to manage, reduce, and eliminate POPs, which are posing health and environmental concerns. Vietnam signed the POPs convention in 2001 and ratified it in 2002. The Ministry of Natural Resources and Environment is currently developing a National Implementation Plan.
- *Basel Convention on the Control of Trans-boundary Movement of Hazardous Waste and their disposal*. The Basel Convention entered into force in 1992 with Vietnam ratifying it in 1995. The Convention focuses on the transport and treatment of hazardous waste. The Competent Authority and Focal Point to the Basel Convention is the Vietnam Environmental Protection Agency. Vietnam has undertaken many activities to implement the convention, including training, waste inventories, strategies, legal reform, technical guidelines, and promulgating a hazardous waste management classification system.

### **Institutional Framework**

The major state authority responsible for environmental affairs in Vietnam is the Ministry of Natural Resources and Environment (MoNRE) with its three main administrative units assigned to undertake the state management in waste. Additionally, five other ministries and provincial People’s Committees (the local executive authorities organized in each province and city in Vietnam) are also directly involved in waste management activities. Some other ministries have specific roles to play in SWM.

### ***Agencies at national level***

- Ministry of Natural Resources and Environment: a central agency in charge of environmental management and protection in Vietnam. Its role in waste management is to issue guidelines, regulations, and standards on waste management in coordination with other ministries, compile annual and long-term waste management plans, formulate policies and strategies, plan and allocate budgets for research and development relating to waste treatment projects (specific task of Department of the Environment (DoE) – an

administrative unit of MoNRE), and appraise and approve Environmental Impacts Assessment reports for waste treatment projects (specific task of Department of the Environmental Impacts Assessment and Appraisal - EIA Department), inspect the operation of waste treatment facilities, supervise waste management activities, raise public awareness, approve recycling and treatment technologies (Vietnam Environmental Protection Agency - VEPA). It is noteworthy that this ministry has just been formed recently in August 2002. Its precursor is the Ministry of Science, Technology and Environment (MOSTE). The former MOSTE was separated into two new ministries: Ministry of Natural Resources and Environment, and Ministry of Science and Technology.

- Ministry of Construction (MOC): a central ministry with the highest authority in municipal solid waste management and landfill siting. Its responsibilities and jurisdiction in solid waste management as follows:
  - Formulating policy and legislation, planning and construction of solid waste facilities.
  - Developing and managing plans for the construction of waste-related infrastructure nationally and provincially.
- Ministry of Industry (MOI): with respect to waste management, this ministry deals mostly with industrial waste. Its responsibilities are to direct, inspect, supervise, and take measures to force businesses and establishments to strictly comply with regulations on industrial waste managements; and coordinate with waste disposal units in disposal of industrial waste (Directive No.199/TTg-1997).
- Ministry of Health (MOH): having similar tasks as MOI, but MOH involves in only hospital waste. Its responsibilities in terms of waste management are basically assessing the impacts of solid waste on human health, inspecting and supervising hospital waste treatment activities (Directive No.199/TTg-1997).
- Ministry of Planning and Investment (MPI): the most influential policy maker at the ministerial level because its main task is to propose to the Government for approval of the overall national allocation of state budget. Regarding waste management, MPI together with the Ministry of Finance consider and provide funding and financial sources for other ministries, government agencies, and localities to implement waste management plans based on their annual and long-term waste management plans (Directive No.199/TTg-1997). Furthermore, MPI in coordination with MOF also issue economic incentives to facilitate waste management activities.
- Ministry of Finance (MOF): together with MPI allocate budgets for waste management activities. However, it focuses more specifically on financial and pricing issues (Directive No.199-1997).
- Ministry of Culture and Information (MCI): direct the dissemination and popularization of legal documents on waste management in order to raise awareness and responsibility of the public to environment protection (Directive No.199-1997).
- Ministry of Transportation (MOT): its responsibilities are planning and managing infrastructure for air, land, railway and maritime transport nationally and provincially; overseeing the URENCOs.



### ***Agencies at local level***

- ❖ People's Council: the local representative of state authority. It is elected by local people and has highest authority at local levels.
- ❖ People's Committees (PPCs): the executive branch of the People's Council, responsible for state administration at the local level. Its responsibilities in waste management are as follows:
  - To implement state management regulations on environmental protection in their respective localities, direct their functional agencies in organizing, coordinating with the functional agencies of the central level in working out annual and long-term plans for waste management, and taking measures to help their localities well perform their tasks for environmental hygiene (Directive No.199-1997).
  - To make approval of waste treatment projects in their localities based on demographic, socio-economic, and industrial conditions of each locality (Inter-Ministerial Circular No.1590-1997).
  - To mobilize investment capital from various sources for the construction of landfills and work out mechanisms to encourage non-governmental organizations to take part in waste management activities (Inter-Ministerial Circular No.1590-1997).
  - To direct the provincial/municipal DNRE and DOC in carrying out waste treatment projects in terms of design, construction, monitoring, EIA, etc., according to Vietnam's environmental and construction standards (Inter-Ministerial Circular No.1590-1997).
  - To direct the provincial/municipal TUPWS and URENCO in organizing waste collection, transport, and treatment activities and make approval of waste collection and treatment fees based on recommendations of provincial/municipal DFP (Inter-Ministerial Circular No.1590-1997).
- ❖ Chief Architect Office (CAO): the main agency responsible for spatial planning in the two largest cities in Vietnam: Ha Noi and Ho Chi Minh City. There are currently only two CAOs in the country, namely Ha Noi Chief Architect Office and Ho Chi Minh City Architect Office. Other provinces and cities do not have this kind of office. Instead, they have Institutes for Urban and Rural Planning (IURP) operating under Departments of Construction (DOC), which are responsible for spatial planning of the province or city. Under Ha Noi and Ho Chi Minh City CAOs, there are also IURPs operating as the consultants for CAOs in drawing up urban master plans that should help to avoid or reduce urban environmental problems. Such urban master plans should indicate locations of waste treatment projects such as waste transfer stations and landfill sites. Apart from CAO and IURP under it, Ha Noi and Ho Chi Minh City also have their DOCs. These DOCs work independently from CAOs in terms of spatial planning and focus more specifically on housing and construction issues.
- ❖ Department of Construction (DOC): an agency at the provincial level, operating under influences of both PPC and MOC. Its responsibilities in waste management and landfill siting are: supervising the implementation of urban master plans of the province or city that have been carried out by NIURP and approved by the Prime Minister, organizing the designing and construction of landfill projects according to environmental and construction standards, supporting PPC in making decisions on waste treatment facility

projects, and reporting and proposing appropriate landfill sites to PPC for approval in coordination with DNRE.

- ❖ Institute for Urban and Rural Planning (IURP): a planning arm of DOC, focuses specifically on spatial planning of the province or city. It has responsibilities for drawing up detailed plans for areas in the province or city. However, urban master plans, which indicate proposed landfill sites, are often carried out by NIURP with approval of the national government.
- ❖ Department of Natural Resources and Environment (DoNRE): similar to DOC, it also operates under the influences of both parties: PPC in terms of administrative and political relations and MNRE in terms of collaboration, support, and technical guidance. DNRE plays an important role in waste management with respect to monitoring environmental quality, managing and implementing waste management policies and regulations issued by MNRE and PPC, appraising EIAs for waste treatment projects, and coordinating with DOC and URENCO in considering and choosing candidate landfill sites, all of which are then proposed to PPC for approval of the most appropriate site.
- ❖ Urban Environment Company (URENCO): the main company in charge of waste collection, transport, and treatment in the province or city. Regarding landfill projects, URENCO is often assigned to be the only agency being the owner of the landfill project, who then also manages and operates the landfill over its operation life. Besides URENCO is also in charge of solid waste collecting, keeping hygiene for public place, public lighting, planting and taking care of trees along the street.

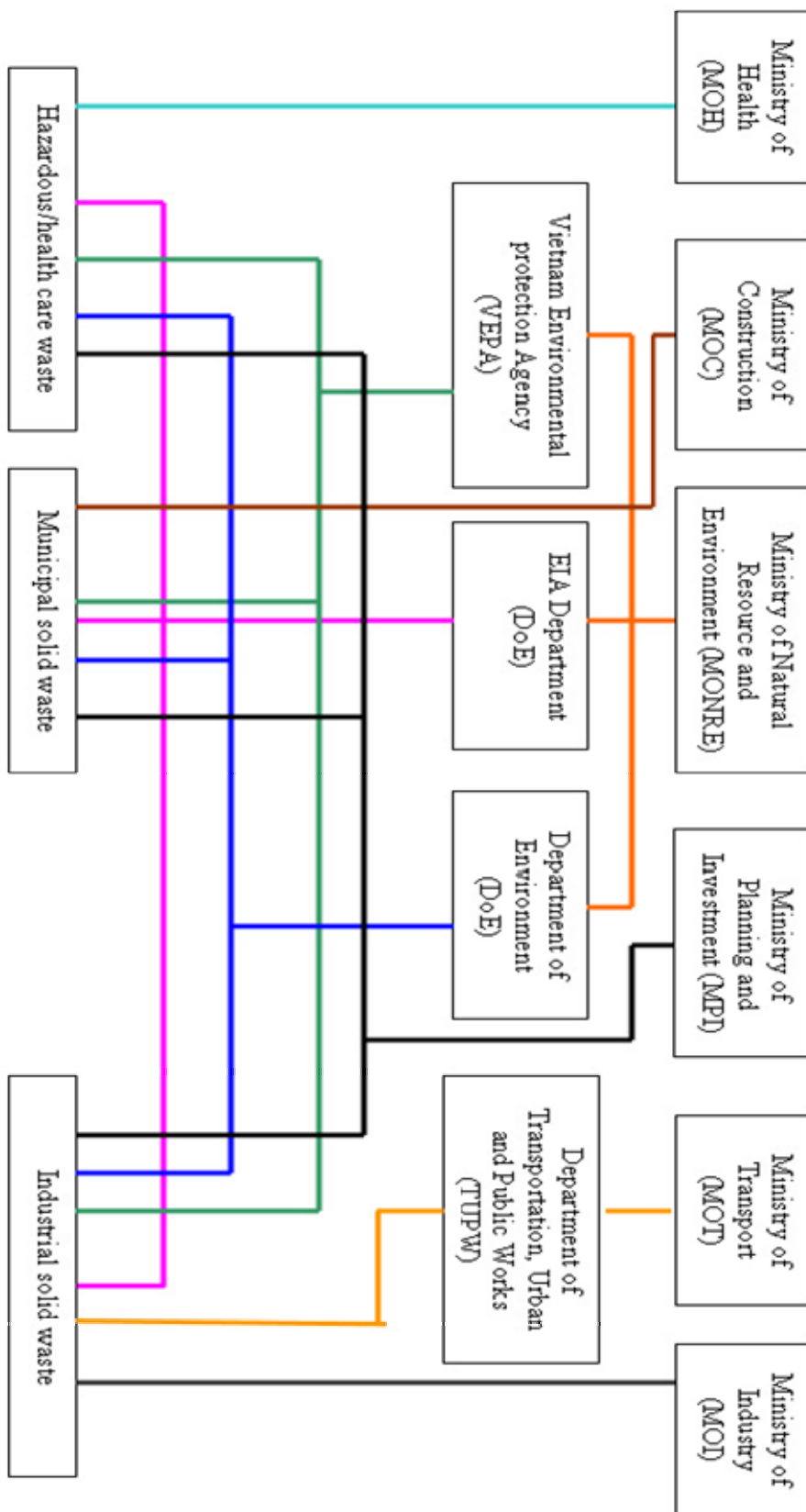


Figure 6. The institutional matrix in solid waste management.

## Conclusion

The legal framework for solid waste management in Vietnam has been gradually improved. Most aspects of solid waste have been touched on in strategies and laws. However, the laws have not provided a clear-cut competence in solid waste management for certain authorities. This leads to the situation that solid waste management is under control of many different agencies. As a result of this, solid waste may be insufficiently managed by different agencies with overlapping authority. It is difficult to take into account the responsibility and accountability among the various authorities regarding solid waste management.

It is expected that the establishment of MoNRE can improve the coordination between solid waste management and management of other resources as well as environmental issues. In fact, it was nearly six years after the formation of MoNRE that the public was informed officially in the media, and thus the change in coordination of solid waste related issues has not been realized according to expectations. MoNRE and URENCO are now continuing with a debate of "*who should be in charge of solid waste related activities*". In addition, each ministry has its own sector standards applicable for sector activities.

Socialization and participatory methods could be a good solution for solid waste management and service in Vietnam. However, "*what activities could be and should be socialized*" is a question that needs more study and discussion. Also, the suitable starting-time and approach for the activities should be considered carefully as to avoid harmful impacts as compared with the previous approaches. Some of international co-operation projects such as INVENT (Integrated Waste Management Modules for Different Courses of Graduate Studies), BIWARE (Biomass and Waste for Renewable Energy) demonstrated clearly the various viewpoints on solid waste management activities and will be a helpful reference for the future.

Desires for a future encompassing more sustainable development and a clean environment in Vietnam will be greatly supported by the already established comprehensive legal framework that provides the basis for an effective state management system on environmental protection. Both government and the people will need to take greater responsibility and play key roles in improvement of solid waste management in Vietnam.

## References

1. Vietnam Association for Conservation of Nature and Environment. *Vietnam - Environment and Life*. Accessed at: [http://www.vacne.org.vn/CD\\_ROM/root/data/index.html](http://www.vacne.org.vn/CD_ROM/root/data/index.html).
2. World Bank (2004). *Vietnam Environmental Monitor 2004*. Ha Noi, Vietnam.
3. Thao Nguyen (2006). *Solid waste management in Vietnam - An industrial ecology study*. Columbia University.
4. The International Centre for Environmental Management. *Viet Nam - 3D Geospatial Statistics: Solid Waste in Municipal Areas, 2004*. Accessed at: [http://www.icem.com.au/02\\_contents/06/06-maps.htm](http://www.icem.com.au/02_contents/06/06-maps.htm).