National Profile for Chemicals Management

Democratic People's Republic of Korea

Pyongyang, December 2009

Preface

The Democratic People's Republic of Korea (DPR Korea) has set chemical management as the priority area for the protection of human health and environment and directs every efforts for the sound management of chemicals, chemical products and wastes in accordance with the practical demands of increasing production and use of chemicals.

The Dubai Declaration, OPS and Global Plan of Action for the Strategic Approach to International Chemicals Management (SAICM) fixed the sound management of chemicals at all stages in their life cycle as a priority in the preparation of national, local and international policy and emphasized strengthening international cooperation in order to reduce the gap between developed countries and developing countries.

The National Profile of DPR Korea describes the overall status of chemical management of the country, production, use, transportation, emission of chemicals and the sound management of wastes.

The National Profile is the first comprehensive report concerned with the sound management of chemicals in DPR Korea and will assist the effort to enhance the existing national institutional mechanisms and legal mechanisms.

The National Coordinating Committee for Environment played the role of coordinator between the relevant agencies concerned with sound management of chemicals, such as UNITAR and the Ministry of Land and Environment Protection. The Ministry of Land and Environment Protection, the central organization of the government in charge of the chemicals management of the country, prepared the National Profile in the close relationship with the relevant ministries and agencies.

UNITAR sent a delegation in June, 2009 according to the SAICM project of "Enabling Activities for the National Chemicals Management in DPR Korea", organized the workshop in Pyongyang and provided technical and financial assistance during the preparation of the National Profile.

We'd like to express our deep gratitude to UNITAR for their assistance to improve the sound management system of chemicals and hope for the continuous cooperation in this field with UNITAR.

We expect that the National Profile will be a valuable resource for the sound management of chemicals of the whole country and the basis for the implementation of SAICM.

The National Profile Preparation Committee

Contents

Introduction

Chemical industry and chemicals is an important constituent of the human life and economy. They diversify the lives of humans and provides one of the major guarantees for civilized and rich materialistic and cultural living conditions.

Considering the role and importance of chemicals industry in the human lives and economic development the government of the Democratic People's Republic of Korea put the main emphasis on the chemical industry. The production and use range of the chemicals is boundless and nearly all the branches get the benefit of the chemicals industry and chemicals.

Chemical industry is the major driving force in building the self-reliant national economy in DPR Korea while its role in all branches of national economy such as machine manufacturing industry, light industry, agricultural industry, etc, is being enhanced day after day. The government has been concentrating its investment in the chemical industry long before and with the chemicals and chemical industry realizing its policies for meeting the growing requirements of the national economy and people.

When considering that the chemicals have a negative effect upon human health and environment, the chemicals management is one of the important issues nation-wide.

As the negative impacts of chemicals upon humans and the environment in the course of production, use and transportation are more and more inevitable with the growing demands of the chemicals and their products the government of the DPR Korea has recently given one of the priorities in the field of the protection of the human health and the environment to the sound management of the chemicals.

The government is taking measures in the national level for the sound management of the chemicals and developing the cooperation with international agencies and other countries including UNEP, considering that chemical pollution is one of global problems as it moves across boundaries.

UNCED, opened in Rio De Janeiro in 1992, adopted the comprehensive document "Agenda 21", which described on all countries' responsibilities for sustainable development.

Chapter 19 of "Agenda 21" addressed issues on environmental sound management of chemicals. Basic contents in all sectors of activities and priorities are as follows.

- Extension and promotion of international assessment on chemicals risk
- Harmonization of chemicals classification and labeling

- Information exchange on chemicals and risks
- Risk reduction planning
- Strengthening competencies and capacities of countries for chemicals management
- Prevention of illegal transboundary transport of toxic and hazardous products

Democratic People's Republic of Korea acceded to the Stockholm Convention on Persistent Organic Pollutants (POPs) on August 19, 2002. DPR Korea had prepared "National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (NIP)" in 2008 to implement conventional duty. The NIP is the base for comprehensive chemicals management to implement the "Strategic Approach to International Chemical Management" (SAICM), by strengthening the national chemicals management system.

DPR Korea also acceded to the "Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade" (February 6, 2004), the "Basel Convention on the Transboundary Movements of the Hazardous Wastes and their Disposal" (July 10, 2008), etc. and has been fulfilling its responsibilities.

Internationally, preparation of the "National Profile for Chemicals Management" was proceeded according to the "Strengthening National Competency and Capacity for Chemicals Management", Chapter 19 of Agenda 21, and domestically, to the implementation plan for the SAICM (2009-2011), proceeding under the co-operation with UNITAR. In Pyongyang, the inception workshop of SAICM was held under the participation of ministries, agencies, scientific research institutes concerned with managing chemicals and delegation of UNITAR on June 2009 and agreed on preparation of the National Profile until the end of 2009.

Purpose of the profile:

a) To provide practical data on ongoing programs and activities in the country concerned with managing chemicals;

b) To promote the exchange of information and experiences between agencies concerned with managing chemicals;

c) To further consolidate decision-making capacity of the state;

d) To promote the exchange of information between key sectors of the industry and agriculture, etc.

Social benefit of preparing the profile

a) To provide people with knowledge and understanding on potential issues concerned with chemicals;

b) To improve the environment protection based on above knowledge and understanding;

c) To strengthen mutual cooperation between relevant agencies and social group for managing chemicals;

d) To strengthen relations and cooperation between countries.

Economical benefit:

a) To promote trade in chemicals, and agricultural and industrial products, which rely on chemicals;

b) To help ensure that chemicals produced, imported and exported are supporting economic, health and environmental goals;

c) To improve awareness on the potential effects of pesticides in agricultural exports;

d) To protect workers' health, those that handle chemicals, and indirectly improve their productivity.

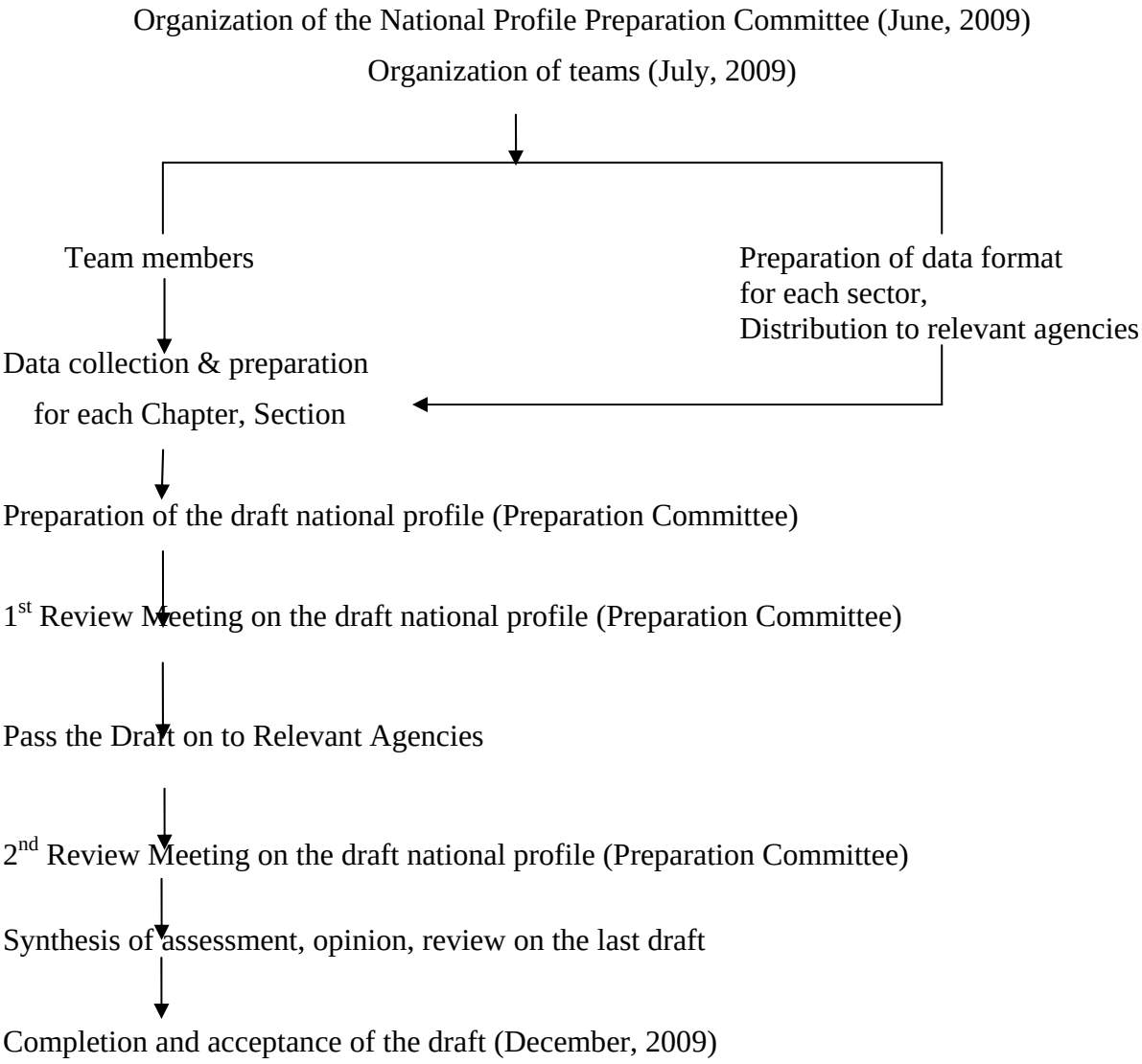
UNITAR organized the workshop and provided necessary data for the implementation of the project and the preparation of National Profile in June, 2009 in Pyongyang in order to promote the implementation of SAICM in DPR Korea.

In the stakeholders meeting, under the coordination of NCCE in the end of June, 2009, the preparation committee was organized to prepare the draft National Profile. In the committee, teams were organized for each sector to collect data on chemicals management and prepare the draft.

The data format for each sector were made and passed on to all relevant agencies to collect data, and the data was analyzed by the members of the committee to prepare the draft profile.

The committee had completed and approved the National Profile in 2009 based on analysis of all assessments and opinions.

Flow Chart of the Preparation of National Profile



Participation of Ministries and Organizations

The National Profile was prepared under the cooperation with UNITAR. NCCE worked as the coordinating agency for the preparation of the National Profile and Ministry of Land and Environment Protection (MLEP) prepared the profile under the close relationship with the other ministries.

In the 1st consultation meeting, opened in July 2, 2009, the plan for preparing the draft was consulted and teams for each sector were organized.

Agencies of the National Profile Preparation Committee

- National Coordination Committee for the Environment (NCCE)
- State Planning Committee (SPC)
- Ministry of Land and Environment Protection (MLEP)
- Ministry of Chemical Industry (MCI)
- Ministry of Agriculture (MA)
- Ministry of Public Health (MPH)
- Ministry of Metal Industry (MMtI)
- Ministry of Machine Industry (MMI)
- Ministry of Coal Industry (MoCI)
- Ministry of Electric Power Industry (MEPI)
- Ministry of Exploitation Industry (MEI)
- Ministry of Electronic Industry (MECI)
- Ministry of City Management (MCM)
- Ministry of Construction and Building Materials Industry (MCBMI)
- Ministry of Railways (MR)
- Ministry of Land and Marine Transport (MLMT)
- Ministry of Finance (MF)
- Ministry of Foreign Trade (MFT)
- Ministry of Education (ME)
- Central Bureau for Statistics (CBS)
- National Bureau for Quality Supervision (NBQS)
- General Administration of Customs (GAC)
- Academy of Science (AS)
- Academy of Agricultural Science (AAS)

Teams

- Environment Pollution Sector – MLEP, EDC, AS, AAS, MCM

- Industrial Sector – SPC, MCI, MMtI, MPH, MMI, MEPI, MEI, MoCI, MECI, MLMT, MR, MCBMI, CBS
- Agricultural Sector – SPC, MA, AAS, CBS
- Export and Import Sector – MFT, MCI, MPH, GAC, NBQS
- Legal Sector – MLEP, MCI, MFT, ME
- Training and Education Sector – ME

Members of teams were gathered once a week to review the result of allocated data collection and input, and present to the preparation committee. The preparation committee recorded collected data in the draft national profile.

At the intermediate review meeting, opened on June 30, the accumulated data and occurred issues were discussed, while taking measures on it.

Executive Summary

National Background Information

DPR Korea is located in the center of the east in the Asian Continent and has a mild climate with 4 pronounced seasons; spring, summer, autumn and winter. Its climate is influenced by the continental mass of Asia and by the surrounding seas, and it is typically humid in summer, cold and dry in winter.

The main topographical characteristic is that it has many mountains, rivers, streams, valleys and slope lands.

DPR Korea is the powerful socialist state with the economy based on socialist ownership of production means, which is the basis of national economy.

The chemical industry of DPR Korea has a history of around 60 years. The major products are fertilizers, pesticides, synthetic resin, paints dyes, plasticizers, acids, alkaline and synthetic pharmaceuticals, as well as DDT, BHC and PCBs, listed in the Stockholm Convention. With the establishment of new chemical industry bases, chemical industry can meet various needs for chemical fertilizer, fiber, and synthetic resin and can achieve further all-round development.

DPR Korea consists of 9 provinces and 210 cities and counties. The capital city is Pyongyang.

GDP was US$ 16 360 million in 2007. 46.4% was occupied by industry sector, 14.6% by agriculture, 6.2% by construction and 32.8% by others. The major industrial sectors are electricity power industry, coal industry, metal industry, railway transport, mining industry, building-materials industry, chemical industry and light industry, mainly relying on domestic natural resources.

According to statistic data, the production of the major sectors was reduced in 1990s due to the natural disaster, but in 2000s the production is again increasing rapidly.

Chemical Production, Import and Export

Chemical industry has a history of around 60 years. The major products are fertilizers, pesticides, synthetic resin, paints dyes, plasticizers, acids, alkaline and synthetic pharmaceuticals. In 2004, it has produced 238.1 t of DDT, 1 275 t of hexachloran, 846 t of PCP and 443.5 t of PCB. The production of POPs pesticides tends to decrease in recent 5 years.

Data on production, import and export of chemicals of the country are collected under the control of SPC and CBS, but the system to submit data on import, export, transport, storage and disposal of all chemicals in the country to MLEP has not been established, except the import of wastes. The data accumulating system is not available yet. The coordinating committee on chemicals management should be created and the system to manage chemicals-related data should be established.

Priority Concerns Related to Chemicals at All Stages in Their Life Cycle

The problem areas are air pollution, pollution of rivers, marine pollution, underground water pollution, soil pollution, hazardous waste treatment/disposal, occupational health, chemical accident, and chemical remnants in foods. The main chemicals and pollutants are TSP, PM_{10}, CO, NO_2, SO_2, O_3, dioxin and furan, heavy metals, organic chlorine, phosphorus, pesticide, arsenic compounds, fertilizers. Among these, the most severe problems are air pollution, chemical pollution in products and radioactive chemicals. The second severe problems are hazardous wastes or chemical wastes treatment/disposal, chemical remnants in foods, chemical accident and chemicals storage.

Data for setting priorities concerned with chemical management is currently insufficient.

Legal Instruments and Non-regulatory Mechanisms for Managing Chemicals

The Socialist Constitution, fundamental law of the state, has detailed the contents to protect the environment prior to production and has consolidated the sectoral legal foundations to provide people with cultural and hygienic environment and working conditions and has paid primary efforts to protect and manage the environment of the country.

The “Law on Environment Protection of DPR Korea” is a fundamental law, which stipulates the key principles of environmental protection, preservation and management of environment, prevention of environmental pollution and guidance and control of environment protection in a comprehensive way.

The “Law on Environment Protection” has been adopted as the law of the Supreme People’s Assembly in April 9, 1992 and revised and supplemented in 1999, 2000, and 2005 to meet the new actual needs.

Though, DPR Korea attaches importance to national environmental protection and takes detailed measures by adopting laws for relevant sectors but does not have detailed laws and regulations concerned with chemicals management.

Ministries, Agencies, and other Institutions Managing Chemicals and Waste

The National Coordination Committee for Environment (NCCE) coordinates all the activities of relevant ministries and agencies in collecting information on the overall chemicals management and taking measures in DPR Korea. NCCE is composed of Ministers, Deputy Ministers, and reports directly to the Cabinet.

The State Planning Commission makes a plan of production, import, export and supply of chemicals and takes relevant administrative measures.

The Ministry of Land and Environment protection is responsible for overall environment protection and provides an organic linkage between scientific research and technical and administrative activities. It also assesses, monitors and controls environment pollution by chemicals and wastes including POPs.

The Ministry of Chemical Industry is responsible for production of chemicals in DPR Korea. It also takes the responsibilities for the environmentally sound management of chemicals, used in the factories and enterprises under the ministry, and for overall chemicals management. In addition, it conducts research on producing alternatives.

The Ministry of Public Health and the Academy of Medical Science take measures for control of DDT use and application of alternatives. They conduct hygienic monitoring and control of POPs and areas, and study adverse effects on human health by POPs and the method of its improvement.

The Ministry of Agriculture coordinates the use, export and import of pesticides, including DDT and hexachlorbenzene.

The Ministry of Machine Industry produces and repairs PCBs containing equipment (transformers, circuit breakers, heat exchanger, and hydraulic equipment).

The Ministry of Electric Power Industry produces and repairs PCBs containing capacitors.

The Ministry of Metal Industry, the Ministry of Construction and Building Materials Industry and other relevant government agencies take the technical renovation to reduce the POPs release unintentionally caused in the production processes.

The Ministry of City Management controls the disposal of municipal wastes and takes measures to reduce the possible unintentional POPs release below allowable level

The Ministry of Finance plans and provides the financial resources needed for chemical management.

The Ministry of People's Security monitors and controls the execution of laws and regulations on environment and the overall chemicals management.

The Ministry of Land and Marine Transport and the Ministry of Railways ensure the environmentally sound transportation of chemicals.

The Ministry of Foreign Trade takes practical measures to limit or prohibit the trade of pollutants including POPs.

The Central Bureau for Statistics investigates and collects data on production, import, export, use and waste of chemicals.

The National Quality Supervision Bureau registers, works out the standards of, assesses and inspects the quality of chemicals.

The General Customs Bureau controls the import and export of toxic chemicals.

The Academy of Agricultural Science registers and approves the pesticides and monitors their safe use and management in the agriculture.

The ministries and agencies have responsibilities concerned with managing chemicals, but lack the unified coordination and information exchange system for all these responsibilities.

Relevant Activities of Industry, Public Interest Group, and the Research Sector

There are research institutions, such as EDC, Hygienic Research Institute and Academy of Agricultural Science, universities, such as **Kim Il Sung** University and University of Construction and Building Materials, ministries and factory laboratories and professional organizations, such as Grand People's Study House, monitoring and supervising stations in provinces and cities available for data collection, testing of chemicals, risk assessment, risk reduction, policy analysis, training and education, research on alternatives, monitoring and information to workers and public.

The government agencies responsible for chemicals management conduct data exchange and cooperation through national workshops, and the associations, such as Air Association, Soil Association and Water Association, meet once a week and make plans and discuss the development of data reports and environmental protection.

Coordinating Mechanisms

There are some coordinating mechanisms established for chemicals management including National Profile Preparation Committee, Korea Medical Association and National Hygienic Inspection Committee.

But the current coordinating mechanisms are imperfect and MLEP functions to monitor and supervise the chemicals management through NCCE. Still, it fails to carry out the regular data collection from all relevant ministries and agencies. Professional coordinating mechanism for the management of chemicals should be established.

Data Access and Use

The available data are production statistics, import statistics, export statistics, chemical use statistics, industrial accident report, transport accident report, occupational health data, poisoning statistics, pollutant release and transfer register, hazardous waste data, register of pesticides, register of toxic chemicals, inventory of existing chemicals, register of import and register of producer.

Technical Infrastructure

DPR Korea has laboratory infrastructure for regulatory chemical analysis established in National Focal Point of Environmental Analysis in EDC, Chemical Research Institute, Central Analysis Station in Academy of Sciences and Research Institute for Children's Nutrition. But it lacks the perfect infrastructure for the assessment, analysis, research and development of chemicals. Insufficient technical equipments leads to the lack of technical capacity. Poor equipment and improper use of high pure reagents make it difficult to find out the correct values in analysis. In addition, another challenge is the lack of international cooperation in the field of chemicals and PTS information. It is necessary to strengthen the technical capacity for the comprehensive assessment, analysis and research of the chemicals and wastes management.

Chemical Emergency Preparedness, Response, and Follow-up

The Ministry of Labor, Ministry of People's Security and other responsible ministries and agencies are undertaking regular investigations to counter accidents. Also an accident response system has been established. Regular measurement and monitoring of emission sources is conducted. In the case of an accident measures are taken on the spot not to be spread and the cause and blame of accident is investigates. As for the people and environment damaged by accidents, long-term investigation is performed to evaluate the effects to human bodies and the natural environment.

The overall capacity for safe management of chemicals is needed. The national strategy on chemicals management and the national implementation of GHS should be established. Modern equipment and gas proof means should be prepared in the sectors of fire services, security and medical treatment.

Awareness/ Understanding of Workers and the Public

Public awareness raising is executed through mass media, social organization, education and training centers, educational institutions as well as the national administrative system. Public awareness raising on the chemicals management has been undertaken in the course of implementation of "National Implementation Plan of Stockholm Convention in DPR Korea on POPs". The laws and regulations concerned with public awareness raising, such as "Law on Public Hygiene of DPR Korea", "Law on Environment Protection of DPR Korea" and "Law on Socialist Labor of DPR Korea" also contributed to awareness activities.

In the course of Stockholm Convention, agreement has been reached through the consultation between the Ministry of Education and other stakeholders to include in the curriculum of secondary and advanced education the educational contents for the safety management of POPs and other chemicals.

Still there is lack of data management coordination between the awareness and education sectors.

International Linkages

DPR Korea energetically participates in international activities of environment protection. It has entered UN Convention on Biological Diversity, UN Framework Convention on Climate Change, Vienna Convention on Protection of Ozone Layer, Montreal Protocol on Substances that Depletes the Ozone Layer, Stockholm Convention on Persistent Organic Pollutants, Cartagena Protocol on Biosafety, UN Convention on Combating Desertification, Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, Kyoto Protocol and Basel Convention on Transboundary Movements of Hazardous Wastes and their Disposal. It also participates in the activities and agreements with cooperation of international organizations and agencies.

Resources Available and Needed for Chemicals Management

The ministries and institutions have sections with experts addressing the production, transport, import, export and use, but they lack of capacity to conduct the specialized activities related to chemicals management. It is needed to strengthen the national

management capacity giving importance to the training for chemicals management and to assign the environmental and chemical experts to relevant sections in a rational way to build their capacity in the future.

Conclusions and Recommendations

Chemicals management is a complex issue in DPR Korea that should be solved urgently.

There are many challenges in the legislative and administrative fields as well as in technical and human resources for the integrated chemicals management of the country. It includes the absence of comprehensive laws and regulations on chemicals management, coordination under an integrated chemicals management system covering all of the relevant agencies, the lack of technical infrastructure for chemicals management and the lack of analytical equipment.

In order to build capacity for sound chemicals management in DPR Korea, the following actions are required:

- comprehensive laws and regulations on production, transport, import, export and use of chemicals should be formulated.
- mechanisms coordinating relevant agencies should be established.
- systems to collect, analyze and distribute the data on chemicals safety should be improved.
- training system for chemicals management should be established to strengthen the capacity of experts.
- a chemicals monitoring and analyzing system should be established with upgraded equipment.
- public awareness should be enhanced to promote the participation of public in the chemicals management while increasing the role of civil society.

Chapter 1 National Background Information

1.1 Physical and Demographic Context

DPR Korea is located in the center of the east in the Asian Continent. On the hemisphere map, it is located in the Northern Hemisphere, Eastern Hemisphere and Continental Hemisphere. It is bound on the north by a broad Asian Continent, on the east by the East Sea of Korea, and on the west by the West Sea of Korea. It borders with China and Russia to the north by the Amnok and Tuman Rivers and faces to Japan across the East Sea of Korea.

DPR Korea, located in the northern zone of Temperate Asia, has a mild climate with 4 pronounced seasons; spring, summer, autumn and winter. Thus, it is proper to human life.

Bordering with the Asian Continent and the Pacific, it has various natural conditions which reflect both the continental and marine characters. Its climate is influenced by the continental mass of Asia and by the surrounding seas, and it is typically humid in summer, cold and dry in winter. The annual average temperature is 10°C and the average temperature in January is not below -10°C in many areas, except the northern mountainous areas. The average temperature in July and August, the hottest season, is 17~18°C in high mountain areas and 20~25°C in the other areas. The annual precipitation is between 1,000~1,200㎜, which is higher than the average precipitation of the entire continent. Great amount of precipitation in summer, influenced by the season wind, provides good conditions to cultivating crops including rice farming.

DPR Korea has a lot of mountains, valleys and coast. The main topographical characteristic is that it has many mountains, which occupy 80% of total area. The average height above sea level is 435m or half of the average height of global land and much lower than that of Asia (950m).

Another topographical characteristic of DPR Korea is that it has many rivers and streams, valleys and slope lands. It has many small and medium rivers and streams, in particular, as well as long coastal lines and complicated horizontal land type.

The reason is that it is surrounded by 3 seas and has many peninsulas, bays and islands.

• Size of the Country: 123 138km²

• Official Language: Korean

• Local Language: Korean

• Total Population: 23 897 000 (2006)

• Urban Population (%): 61%

• Rural Population (%): 39%

• Average Life Span: 69.2

• Birth Rate per 1 000: 14.7 (2006)

• Death Rate per 1 000: 8.7 (2006)

• Number of technicians and experts : 2 125 000 (2005)

DPR Korea is the powerful socialist state with the economy based on socialist ownership of production means. The socialist ownership of production means, which is the basis of national economy, consists of state ownership and cooperative ownership.

GDP was US$ 16 360 million in 2007. The major industrial sectors are electricity power industry, coal industry, metal industry, railway transport, mining industry, building-materials industry, chemical industry and light industry, mainly relying on domestic natural resources. The industrial output was US$ 7 600 million and agricultural output was US$ 2 387 million. Of GDP, the share contributed by industrial sectors such as iron and steel, chemicals, cement, machine manufacturing, power generation, and construction, etc was 46.4% and by agriculture was 14.6% in 2007.

In DPR Korea, the chemical industry has a history of around 60 years. The major products are fertilizers, pesticides, synthetic resin, paints dyes, plasticizers, acids, alkaline and synthetic pharmaceuticals, as well as DDT, BHC and PCBs, listed in the Stockholm Convention. With the establishment of new chemical industry bases, chemical industry can meet various needs for chemical fertilizer, fiber, and synthetic resin and can achieve further all-round development.

Figure 1. Namhung Youth Chemical Complex

1.2 Political/Geographic Structure of the Country

Considering natural conditions, administrative districts, and old customs, DPR Korea is divided into 5 areas; northern west, eastern north, middle, eastern north, eastern south, and western south areas and consists of 9 provinces and 210 cities and counties. The capital city of DPR Korea is Pyongyang.

DPR Korea is man-centered socialist state that embodies Juche idea, the guiding idea, in all spheres of national activities. The national sovereignty rests with the workers, peasants and intellectuals, and all other working people. All the state organs are organized and operated in the principle of democratic centralism. DPR Korea conducts all activities under the leadership of the Worker's Party of Korea. Independence, peace and friendship are the main idea of foreign policy and the principle of its external activities.

The Supreme People's Assembly is the highest state organ of power. It exercises legislative power. It is composed of representatives elected in the principle of universal, equal and direct election by secret ballot. The period of the Assembly is 5 years.

The National Defense Commission is the highest military leading organ of state power and the universal national defense administration. The Chairman of the National Defense Commission commands and directs all the armed forces and guides national defense as a whole. The National Defense Commission is responsible for its work in front of the Supreme People's Assembly.

The Presidium of the Supreme People's Assembly is the highest organ of state power when the Supreme People's Assembly is not in session. The President of the Presidium of the Supreme People's Assembly represents the state and receives the credentials and letters of recall of diplomatic representatives accredited by foreign states.

The Cabinet is the administrative and executive body of the highest state power and the organ of overall state administration. The Premier of the Cabinet represents the government of the DPR Korea. The Cabinet is the accountable for its work to the Supreme People's Assembly and to the Presidium of the Supreme People's Assembly when the Supreme People's Assembly is not in session.

The people's assembly of the province (or municipality directly under central authority), city (or district) and county is the local organ of state power, with the term of office of 4 years. The local people's committee is the local organ of state power when the people's assembly at the corresponding level is in session and the administrative and

executive organ of state power at the corresponding level. The central administrative organ is the Cabinet and local administrative organs are the local people's committee. The local administrative organ consists of province (or municipality directly under central authority), city (or district) and county. The local people's committee is the local link of the national administrative system, which forms a unique system on a national scale and subordinate to the people's committees at higher levels and the Cabinet. The local people's committee is composed of chairman, vice-chairman, secretary, and committees. It carries out the laws, decrees, decisions, and instruction of the people's committees at a higher level, the Cabinet, and the Ministries while organizing and executing all administrative works of localities concerned.

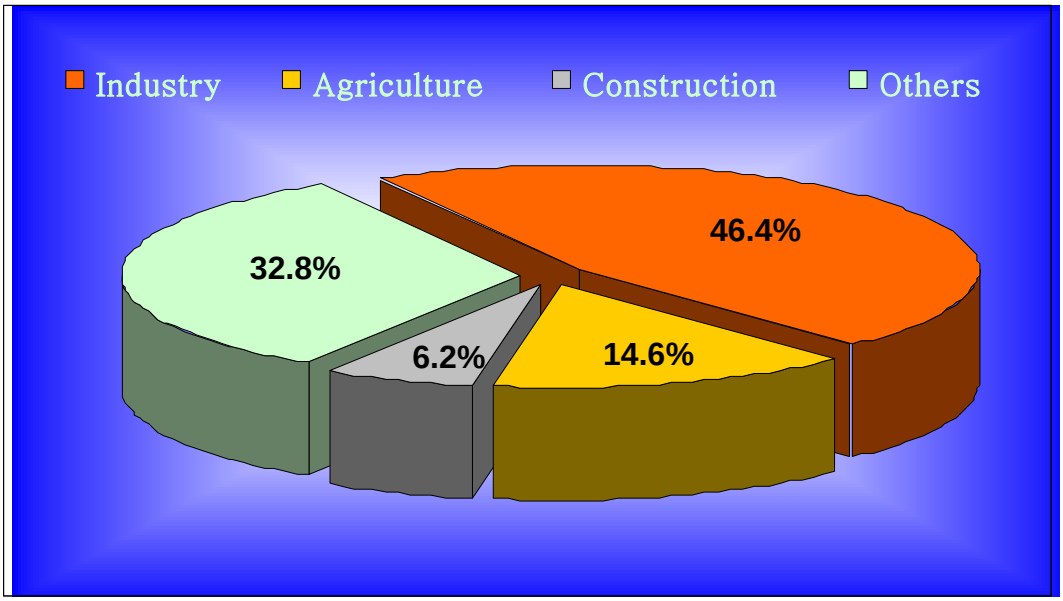
Reference

- Preparing a National Profile to Assess the National Infrastructure for Management of Chemicals: Guidance Document (UNITAR 1996)
- National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (2008)
- SOE Report of DPR Korea (2003)
- Data of Population Institute (2006)

1.3 Industrial, Agricultural, and Other Key Economic Sectors

Table 1.A: Economic Profile

Year	1992	1994	1996	2000	2004	2007
GDP (million US$)	20 875	15 421	10 588	10 608	12 859	16 360
GDP per capita (US$)	990	722	482	464	546	683



Contribution to GDP in 2007(%)

Table 1.B: Amount of Major Products

Classification	Unit	1990	1995	2000	2005	2007
Electricity	100 million (kwh)	564	279	307	362	395
Coal	10 000 (t)	6 000 (1991)	3 020	2 273	2 505	2 743
Steel	1 000 (t)	7 120	3 920	1 610	1 751	1 803
Cement	1 000 (t)	13 900	3 970	1 970	2 861	3 400
Chemical fertilizer	1 000 (t)	2 265	1 272	170	282	338

Table 1.C: Amount of Production, Import and Manuring of Fertilizer (1 000t)

Classification	Type of fertilizer	1997 ~1998	1999~2000	2004~2005	2007~2008
Production	Nitrogen	115	109	160	257
	Phosphorus	22	5	8	7
	Potassic	4	7	8	10
Import	Nitrogen	304	417	736	181
	Phosphorus	98	126	259	-
	Potassic	-	45	78	-
Manuring	Nitrogen	442	528	896	438

	Phosphorus	121	133	267	7
	Potassic	12	54	86	10

Table 1.D: Agricultural Production by Regions

Region	Major Crops	Amount of crop produced (t)	Total Number of Employees (1000)	Size of Productive Areas (10 000 of hectares)
Plain land in western coast	paddy rice	1 674 437	2 294	45.3809
	corn	1 094 361		32.3203
	wheat, barley	196 921		8.8779
	potato, sweet potato	278 017		10.6189
	other	29 263		1.3307
Eastern coast	paddy rice	350 682	1 064	12.0634
	corn	336 033		13.1641
	wheat, barley	51 806		2.4049
	potato, sweet potato	117 636		5.0310
	other	6 369		0.3883
Northern mountainous areas	paddy rice	26 463	291	0.8947
	corn	121 479		4.0167
	wheat, barley	55 062		2.3890
	potato	79 339		2.6083

Chapter 2. Chemical Production, Import and Export

2.1 Chemical production, import and export

Figure 2. Production of fertilizer

Table 2.A: Production and import of pesticides

Pesticides		Unit	2002	2003	2004
Production	DDT	t	236	253	238.1
	Hexachloran/Lindane	t	1 286	1 235	1 275
	PCP	t	838	811	846
Import	Phosphamid	t	80	50	5
	Deltametrin	kℓ	61	50	93
	Quinolinic acid	t	22	18	24
	Butachlor	t	55	55	100

Figure 3. Chemical use in pharmaceutical sector

Table 2.B: Production of POPs pesticides

POPs	2000 (t)	2001 (t)	2002 (t)	2003 (t)	2004 (t)	2005 (t)	2006 (t)
DDT	120	230.1	236.4	253	238.1	221.6	213
BHC	969.7	1 170.5	1 174.7	1 127.8	1 164.3	1 023.2	1 142.0
PCB	448.7	328.2	430.2	415.6	443.5	497.4	354.8

Reference: National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants

Practical Agricultural Medicines

A Handbook of Pesticide Chemicals

Figure 4. Deltametrin imported for pesticide use


Figure 5. Use of deltametrin as insecticide

2.2 Unintentionally Generated Chemicals

After signing the Stockholm Convention, DPR Korea has collected data and strengthened technical capacity, deeply concerned for protecting human health and environment from the impact of unintentional POPs such as polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF).

Table 2.C: Unintentional POPs emission under Stockholm Convention (2006)

Source of Emission	Unit	Total	Air	Water	Soil	Product	Residue
Metal production	g-TEQ	91.822	36.291	0.050			55.481
Thermal, power generation	g-TEQ	170.195	14.194				156.001
Building material production	g-TEQ	2.230	2.230				
Transport	g-TEQ	0.413	0.413				
Open burning	g-TEQ	1.238	0.922		0.316		
Pulp, paper making, other chemical industry	g-TEQ	54.723	0.013			23.040	31.670
Waste disposal	g-TEQ	30.040		2.340		12.800	14.900
Others	g-TEQ	0.510	0.330			0.130	0.050
Total	g-TEQ	**351.171**	**54.393**	**2.390**	**0.316**	**35.970**	**258.102**

2.3 Comments/Analysis

Data on production, import and export of chemicals of the country are collected under the control of SPC and CBS, but data collection and service on transportation and waste disposal is conducted by relevant ministries.

The main sources of data on production, import and export of chemicals are the Ministry of Land and Environment Protection (MLEP), Ministry of Chemical Industry, Ministry of Foreign Trade.

The facilities to recycle and reuse chemicals have been established in the country but the facilities for wastes disposal are not sufficient. For example, the facilities to produce fuel by recycling waste rubber and waste plastics has been established but the disposal of wastes is only conducted in the method of dumping and burning.

In the national institutional mechanism for chemicals management, the State Planning Commission deals with the plans on import and production of chemicals, but the system has not been established to plan and manage storage and transport. The system to submit data on import, export, transport, storage and disposal of all chemicals in DPR Korea to MLEP has not been established, except the import of wastes.

Also the statistic indices are not fixed on chemicals management and discharge of pollutants in the sectors of economy whereupon the data accumulating system is not available yet.

Only through the establishment of a system in which MLEP is regularly informed of import, export, use, storage, distribution and disposal of chemicals in all sectors of national economy will chemicals be able to be managed on the basis of clear records of the amount of use and in stock.

The coordinating committee on chemicals management should be created to ensure unified management of chemicals on the state level.

Environment management system should be set up to include all agencies and enterprises to inform CBS and MLEP of management situations of chemicals consumed by themselves at least once a month.

Chapter 3. Priority Concerns Related to Chemicals at All Stages in Their Life Cycle

3.1 Priority Concerns Related to Chemicals

Table 3.A: Description of Problem Areas

Nature of Problem	City/Region	Brief Description of Problem	Chemicals/Pollutants
Air pollution	Urban center	The main sources of air pollution are the release of gases from fossil fuel combustion in boilers, industrial kilns, vehicles and residential areas, as well as waste gas from industries. The growth in population and the industrial development also causes air pollution. Generally, standards are not exceeded except some areas.	TSP, PM_{10}, CO, NO_2 SO_2, O_3, dioxin and furan,
	Chongjin area	The combustion of lignite in power stations and industrial areas is the main source of air pollution in the surrounding areas.	SO_2
Pollution of rivers	Western area	MLEP has surveyed the level of pollution of rivers by pesticides in the rural areas. The level of pollution by pesticides is low. The reason is that pesticides are not sufficiently used in the rural areas, due to the shortage of pesticides. In some areas, the pollution by DDT and Hexachloride was inspected and found to be lower than the standard. The route of pollution is irrigation wastewater.	Pesticides: - phosphorus - organic chlorine - heavy metals (Hg, Pb, Cd, Cr, Cu, Ni, Zn) - DDT, Heptachlorepoxide
Marine pollution	Coast area	Water quality of the coastal area is clean except the tourist areas, where water quality is affected by wastes from the tourists, and industrial areas, but on the coast of urban and industrial areas red tide has appeared. The main source was industrial wastewater, daily sewages and irrigation wastewater.	Heavy metals (Hg, Pb, Cd, Cr, Cu, Ni, Mn, Zn),
Underground water pollution	Rural area	Due to the impact of mine exploitation and depositing area of lean ore, underground water of some areas is polluted. Generally, the level of pollution of the underground water is reported to be lower than the standard by EDC.	Chloride, heavy metal (Hg, Cd, Pb, As)
Soil pollution	Around industrial area (refineries, chemical factories, etc.)	Soil is polluted by emission from refineries. Pesticide was detected in a few areas because of insufficient use of them. Pollution by sediments of lean ore and urban wastes was detected but it was below the standard. The main pollution is pollution by heavy metals and damage to crops.	Heavy metals (Cd, Zn, Pb, Mn, etc.) Pesticide (deltametrin, Promertan, Nubacron)
Hazardous waste treatment/disposal		The amount of hazardous wastes emitted in 2000 was about 1 000 t and 80% of them were emitted from the industrial sector. 20% was occupied by public health, commerce, marine transport, etc. The government promulgated “the Law on	Hazardous wastes

		Waste Treatment" in April, 26 2007 and is monitoring the emission, storage, transport and disposal of wastes.	
Occupational health: public health	Local	MPH has inspected the occurrence rate of disease by pesticides. It was reported that 395 patients were affected in 1995.	Pesticides
Occupation health: industry	Local	MPH has indicated that 75 people were affected by toxic materials, such as Pb, Mn, Hg and As, produced in the industrial sector in 1995.	Pb, Mn, Hg, As, waste gas
Chemical accident: transport	Ryongchon area	There was an accident by explosion of nitric ammonium fertilizer in 2006 in Ryongchon county, North Pyongan Province. There were casualties and several public buildings and dwellings were totally and severely damaged.	Fertilizer
	Nampo	100t of industrial toxic wastes emitted from Nampo Refinery were piled up.	Arsenic compounds
Chemical remnants in foods	National	Hygienic Prevention Station and other agencies conduct monitoring of foods. Pollution of seafood was not detected. A little Pb was measured due to the exhaust gas of vehicles among foods without packaging near roads. The remnants of pesticides in farm products were below the standards and the state is much better than other countries. The research on pollution-free vegetation is conducted by EDC, Institution of Vegetation Research and AAS.	- Pb - organic phosphorus

Table 3.B: Priority Concerns Related to Chemicals

Nature of Problem	**Scale of Problem[1]**	**Level of Concern[2]**	**Ability to Control Problem[2]**	**Availability of Statistical Data[3]**	**Specific Chemicals Creating Concerns**	**Priority Ranking[4]**
Air pollution: construction	Local	High	Medium	Insufficient	TSP, PM10	1
Air pollution: transport	Local	High	Medium	Insufficient	TSP, PM_{10}, CO, NO_2, SO_2, O_3	1
Air pollution: industrial	Local	Medium	Medium	Insufficient	TSP, SO_2, NO_2	2
Air pollution: boiler	Local	High	High	Insufficient	SO_2, NO_2	2
Pollution of drinking water	Local	Low	Medium	Insufficient	Heavy metal	3
Pollution of underground water	Local	Medium	Low	Insufficient	Chloride compounds, DDT Heavy metal (Hg, Cd, Pb, As)	3

Pollution of irrigation water	Local	Low	Low	Sufficient	insecticide; organic chlorine, herbicide, germicide, heavy metal	3
Marine pollution	Local	High	Medium	Sufficient	Heavy metal (Hg, Pb, Cd, Cr, Cu, Ni, Mn, Zn) Total organic chlorine insecticides (DDT, Heptachlorepoxide)	
Soil pollution	National	Low	High	Insufficient	Heavy metal (Cd, Zn, Pb, Mn)	3
Hazardous wastes or chemical wastes treatment /disposal	National	High	Low	Insufficient	Industrial hazardous wastes	2
Chemical poisoning	Local	Low	Medium	Sufficient	Insecticide, herbicide, rat poison	3
Waste chemicals storage /disposal	National	High	Low	Insufficient	oxidant, insecticide, soot, benzene, acrylonitile	3
Chemical remnants in foods	National	High	Low	Insufficient	Metal, organic phosphorus compounds, pesticides, other chemicals	2
Chemical pollution in products	National	Low	Low	Insufficient	Heavy metal	1
Occupational health: agriculture	Local	Medium	Medium	Sufficient	Pesticides	3
Occupational health: industry	Local	Low	Medium	Insufficient	Chloride gas, ammonium gas	3
Public health	Local	Low	Medium	Sufficient	DDT	3
Radioactive chemicals	National	High	High	Sufficient	Radioactive materials	1
Chemical from households	Local	Low	Medium	Insufficient	Chemicals in waste products	3
Chemical poisoning	Local	Low	Medium	Sufficient	Insecticide, herbicide, rat poison	4
Chemical accident: industry	Local	Low	Medium	Insufficient	Chloride gas, ammonium gas	3
Chemical accident: transport	Local	Low	Medium	Sufficient	LPG(liquid petrol gas), vinyl chloride, TNT	2
Hazardous wastes treatment/disposal	National	Low	Medium	Insufficient	Hazardous wastes	2
Chemicals storage	National	High	Medium	Insufficient	All chemicals	2

POPs	Local	High	Low	Sufficient for some materials	POPs	3

[1] Local, regional, or national
[2] Low, medium, or high
[3] Sufficient, insufficient, or no data available
[4] 1(=most severe problem), 2(=second most severe problem, etc.)

3.2 Comments/Analysis

Data for setting priorities concerned with chemicals management is currently insufficient. In a concrete way, the professional data collecting system has not been established for chemical wastes.

Though the Central Monitoring and Supervision Station of MLEP is monitoring air and water and EDC is conducting analysis on the pollution, it is only conducted in limited areas due to the lack of information on priority areas.

The mainly concentrated areas with chemical problems are Hamhung chemical industrial area, Namhung area and Anju area. Water is polluted by Hg and Cl from the paper-producing factory in this area because of the deficient wastewater purification facilities. Air is also polluted by nonferrous metals such as As, Pb and Zn because of insufficient dust collection equipment in the refineries.

Chapter 4. Legal Instruments and Non-regulatory Mechanisms for Managing Chemicals

4.1 Overview of National Legal Instruments Which Address the Management of Chemicals

In Chapter 3, Article 57 of the Socialist Constitution, fundamental law of the state, has detailed the contents to protect the environment prior to production and has consolidated the sectoral legal foundations to provide people with cultural and hygienic environment and working conditions and has paid primary efforts to protect and manage the environment of the country.

Table 4.A: References to existing legal instruments which address the management of chemicals

Legal Instrument (Type, Reference, Year)	Responsible Ministries or Bodies	Chemical Use Categories Covered	Objective of Legislation	Relevant Articles/ Provisions	Resource Allocated
Law on Environmental Protection (April 9. 1986)	MLEP	Preventing Pollution, Managing Chemicals	General Principle of Environment Protection	Chapter 3 Article 19 ~ Article 37	
Law on Agricultural Chemicals (August 8. 2006)	MA	Pesticide	Inspection, Registration, Production, Provision, Custody, Preventing Environmental Pollution in use	Chapter 5 Article 59~67	
Law on Protection of Taedong River from contamination (February 10. 2005)	MLEP	Wastes	Industrial Wastes, daily sewages, purification of hospital wastes, installation of disinfector	Article 6,10,14,19	
Law on Municipal Management (January 29. 1992)	MCM, MLEP	City Wastes	Disposal of Wastes , Collection of Useful Materials, Preventing Pollution of Drinking water	Chapter 3 Article 19,25,28	

Law on Public Hygiene (July 15. 1998)	MLEP	Wastes	Disposal of Toxic materials, Management of dump, Preventing of Soil Pollution	Article1~11, 15	
Law on Agriculture (December 18. 1998.)	MA	Toxic Chemicals	Disposal of Harmful Materials	Chapter 5 Article 64~66	
Law on Management of the Capital City, Pyongyang (November 26. 1998)	MLEP	Industrial Wastes	Building and Disposal of Comprehensive Sanitation facilities	Chapter 3 Article 16, 21, 23, 26	
Law on Prevention Sea Pollution, Marine Pollution (October 22. 1997)	MLEP	Outflow of Chemicals	Disposal of Outflow of Pesticide and Wastes	Article 4~25	
Law on Environmental Impact Assessment (November 9. 2005)	MLEP	Chemicals Impact Assessment	Prevention of Damage by Correct Assessment of Environmental Impact	Chapter 4 Article 27~29	
Law on Land (April 29. 1977)	MLEP	Toxic Materials	Purification of Toxic Materials	Chapter 4, Article 26, Chapter 6 Article 54	
Law on Water Resources (June 18. 1997)	MLEP	Wastes and Leftovers	Protection of Water Source by Strict Control	Chapter 3 Artlcle18, 35 ~ 37	
Law on Rivers and Lakes (November 27. 2002)	MLEP	Wastes and Leftovers	Protection of Water Resource by Strict Control	Chapter 3 Article 24	
Law on Fishery (January 18. 1995)	MLEP	Wastes and Leftovers	Protection of Water Resource by Strict Control	Chapter 39, 40	
Law on Waste Treatment (April 26. 2007)	MLEP	Wastes and Leftovers	Protection of Water Resource by Strict Control		
Law on Foodstuff Hygiene (July 22. 1998)	NBQS	Pollution of Foodstuffs	Prevention of Pollution	Article 5, 7, 9, 13 ~23	
Law on Sanitation and Quarantine at Borders (January 4. 1996)	NBQS	Chemicals	Prohibition and Control of Illegal Import /Export	Article 21, 23	

Law on Customs (October 14. 1983)	GAC	Chemicals	Prohibition and Control of Illegal Import /Export	Article13, 17	
Regulation for the Enforcement of the Law on Environment Protection (October 23. 1999)	MLEP	Managing Chemicals	Detail Regulations		
Regulation for the Enforcement of the Law on Environmental Impact Assessment (April 26. 2006)	MLEP	Chemicals Impact Assessment	Detail Regulation		
Regulation for the Enforcement of the Law on Agricultural Chemicals (August 6. 2007)	MA	Pesticide	Procedures and Methods of Prohibition and Restriction		
Regulation of Handling Toxic Materials (February. 2006)	MPS, MLEP	Chemicals	Procedures and Methods of Prohibition and Restriction		
Regulation for the Enforcement of the Law on Prevention of Sea Pollution (December 28. 1997)	MLEP	Pesticide, Chemicals	Procedures and Methods of Prohibition and Restriction		
Regulation for the Enforcement of the Law On Waste Treatment (September 19. 2007)	MLEP	Wastes and Leftovers	Addressing Procedure and Method of Toxic Organic Wastes		

4.2 Summary Description of key Legal Instruments on Chemicals

The “Law on Environment Protection of DPR Korea” is a fundamental law, which stipulates the key principles of environmental protection, preservation and management of environment, prevention of environmental pollution and guidance and control of environment protection in a comprehensive way.

The “Law on Environment Protection” has been adopted as the law of the Supreme People’s Assembly in April 9, 1992 and revised and supplemented in 1999, 2000, and

2005 to meet the new actual needs.

- Main principle of environment protection

  The government always pays deep care on national environmental protection and management in order to provide people with cultural and hygienic environment and working conditions.

  Environment protection is an important task that should be permanently kept up in the socialist construction. The government consolidates and develops what was achieved in the environmental protection and management and takes measures to further protect and manage environment in line with the development of relevant economic sectors, while increasing financial investment systematically.

  The government, in order to build the environment in conformity with the people's desire and demand, organizes environmental protection activities in a planned and systematic way.

  The factories and enterprises should conduct activities of production and construction after taking measures of pollution prevention and continually strengthen and update material and technical means of environmental protection.

  The environmental protection and management is the sacred duty of all people.

  The government strengthens scientific research activities regarding environmental protection from pollution and builds up the capacity of scientific research institutes, strengthening guidance of their activities.

  The government strengthens cooperation with other countries and international agencies in the field of environmental protection.

- Prevention of environmental pollution from chemicals

  Factories, enterprises, buildings and facilities cannot be built nor herbicide and insecticide sprayed around catchments, reservoirs and drainages.

  Prohibited pesticides that may pollute air, water and soil or damage the human body shall not be produced nor imported.

  Agricultural guidance bodies, relevant agencies, enterprises and groups shall have to store, use pesticides according to the rules, and prevent pesticide from being sprayed into the air or flowing into the sea, rivers, lakes and reservoirs, and land filling.

When spraying pesticide by airplane, permission should be granted from the agencies of land and environmental protection.

4.3 Existing Legislation by Use Category Addressing Various Stages of Chemicals from production/import through Disposal

Table 4.B: Overview of Legal Instruments to Manage Chemicals by Use Chemicals

Category of Chemicals	Import	Production	Storage	Transport	Distribution / Marketing	Use/ Handling	Disposal
Pesticides (agricultural, public health and consumer use)	X	X	X	X	X	X	X
Industrial Chemicals	X	X	X	X	X	X	X
Consumer Chemicals	X	X	X	X	X	X	X
Chemical Wastes	X	X	X	X	X	X	X

4.4 Comments/Analysis

DPR Korea attaches importance to national environmental protection and takes detailed measures by adopting laws for relevant sectors but does not have detailed laws and regulations concerned with chemicals management.

The laws and regulations related with chemicals management should be enacted and enforced.

Chapter 5. Ministries, Agencies, and Other Institutions Managing Chemicals and Waste

5.1 Responsibilities of Different Ministries, Agencies and other Institutions

Table 5.A: Responsibilities of ministries, agencies and other institutions concerned with pesticide

Stage of life -cycle / Ministry Concerned	Importation	Production	Restore	Transport	Distribution/Marketing	Use /Handling	Disposal
Ministry of Land and Environment Protection	X		X	X	X	X	X
Academy of Science	X	X	X		X	X	X
Ministry of Municipal Management						X	X
Ministry of Public Health			X		X	X	X
Academy of Medical Science					X	X	X
Ministry of Agriculture	X	X	X	X	X	X	X
Academy of Agricultural Science	X	X	X	X	X	X	X
Ministry of Foreign Trade	X		X	X	X		
Ministry of Chemical Industry	X	X	X	X		X	X
Ministry of Railways				X			
Ministry of Land and Marine Transport				X			
Ministry of People's Security				X			
National Quality Supervision Bureau	X						

Note: "X" indicates corresponding responsibility

Table 5.B: Responsibilities of ministries, government, agencies and other institutions concerned with industrial chemicals

Stage of life -cycle / Ministry Concerned	Importation	Production	Restore	Transport	Distribution/Marketing	Use /Handling	Disposal
Ministry of Land and Environment Protection	X		X	X	X	X	X
Academy of Science	X	X	X		X	X	X
Ministry of Municipal Management						X	X
Ministry of Public Health						X	X
Academy of Medical Science						X	X
Ministry of Agriculture							
Academy of Agricultural Science							
Ministry of Foreign Trade	X			X	X		
Ministry of Chemical Industry	X	X	X	X	X	X	X
Ministry of Railways, Ministry of Land and Marine Transport				X			
Ministry of People's Security				X			
State Bureau for Quality Supervision	X						

Note: "X" indicates corresponding responsibility

Table 5.C: Responsibilities of the ministry, government agencies and other institutions concerned with consumer chemicals

Stage of life -cycle / Ministry Concerned	Importation	Production	Restore	Transport	Distribution/Marketing	Use /Handling	Disposal
Ministry of Land and Environment Protection	X		X	X	X	X	X
Academy of Science	X	X	X	X	X	X	X

Ministry of Municipal Management						X	X
Ministry of Public Health	X	X	X		X	X	X
Academy of Medical Science	X	X	X		X	X	X
Ministry of agriculture							X
Academy of agricultural Science							X
Ministry of foreign Trade	X		X	X	X		
Ministry of Chemical Industry	X	X	X	X	X	X	X
Ministry of Machine Industry		X	X		X	X	
Ministry of Electric Power Industry		X	X		X	X	
Ministry of Metal Industry& Ministry of Construction and Building Materials Industry		X	X		X	X	
Ministry of Railways & Ministry of Land and Marine Transport				X			
Ministry of People's Security				X			
National Quality Supervision Bureau	X						

Note: "X" indicates corresponding responsibility

5.2 Description of Ministerial Authorities and Mandates

The National Coordination Committee for Environment (NCCE) coordinates all the activities of relevant ministries and agencies in collecting information on the overall chemicals management and taking measures in DPR Korea. NCCE is composed of Ministers, Deputy Ministers, and reports directly to the Cabinet.

The State Planning Commission makes a plan of production, import, export and supply of chemicals and takes relevant administrative measures.

The Ministry of Land and Environment protection is responsible for overall environment

protection and provides an organic linkage between scientific research and technical and administrative activities. It also assesses, monitors and controls environment pollution by chemicals and wastes including POPs.

The Ministry of Chemical Industry is responsible for production of chemicals in DPR Korea. It also takes the responsibilities for the environmentally sound management of chemicals, used in the factories and enterprises under the ministry, and for overall chemicals management. In addition, it conducts research on producing alternatives.

The Ministry of Public Health and the Academy of Medical Science take measures for control of DDT use and application of alternatives. They conduct hygienic monitoring and control of POPs and areas, and study adverse effects on human health by POPs and the method of its improvement.

The Ministry of Agriculture coordinates the use, export and import of pesticides, including DDT and hexachlorbenzene.

The Ministry of Machine Industry produces and repairs PCBs containing equipment (transformers, circuit breakers, heat exchanger, and hydraulic equipment).

The Ministry of Electric Power Industry produces and repairs PCBs containing capacitors.

The Ministry of Metal Industry, the Ministry of Construction and Building Materials Industry and other relevant government agencies take the technical renovation to reduce the POPs release unintentionally caused in the production processes.

The Ministry of City Management controls the disposal of municipal wastes and takes measures to reduce the possible unintentional POPs release below allowable level

The Ministry of Finance plans and provides the financial resources needed for chemical management.

The Ministry of People’s Security monitors and controls the execution of laws and regulations on environment and the overall chemicals management.

The Ministry of Land and Marine Transport and the Ministry of Railways ensure the environmentally sound transportation of chemicals.

The Ministry of Foreign Trade takes practical measures to limit or prohibit the trade of pollutants including POPs.

The Central Bureau for Statistics investigates and collects data on production, import,

export, use and waste of chemicals.

The National Quality Supervision Bureau registers, works out the standards of, assesses and inspects the quality of chemicals.

The General Customs Bureau controls the import and export of toxic chemicals.

The Academy of Agricultural Science registers and approves the pesticides and monitors their safe use and management in the agriculture.

5.3 Comments and Analysis

Relevant ministries and agencies have responsibilities concerned with managing chemicals, but lack the unified coordination and information exchange system for all these responsibilities. This has posed significant challenges with data sharing and strict control of responsibilities. Therefore, the coordination associated with managing chemicals should be established in MLEP for all the ministries and agencies.

Chapter 6. Relevant Activities of Industry, Public Interest Group, and the Research Sector

6.1 Description of Organizations

There are several governmental organizations in DPR Korea which deal with environment issues such as Environment and Development Center, Central Environment Monitoring and Supervision Station and **Kim Il Sung** University.

Environment and Development Center (EDC) is the scientific research institute under the Ministry of Land and Environment Protection, which is in direct responsibility for environment science research in the country. It is the national resource center and scientific research agency for environment protection which supports decision-making towards the environment and sustainable development of the country with concrete research data for the environment monitoring, analysis and prediction as well as environment technology development.

Faculty of Global Environmental Science in **Kim Il Sung** University is the education and scientific research unit major in environment protection, which has thousands of students and hundreds of professors and doctoral institute for undergraduates.

Central Environment Monitoring and Supervision Station is the central agency under the Ministry of Land and Environment Protection which has monitoring and supervision stations in the provinces, cities and counties and collects data and conducts monitoring of environment in the whole country.

The factories have their own laboratories in the factories and conducts technical development, testing of production, environmental protection, data collection.

Natural Conservation Union and Korea Medical Association are the non-governmental organizations which actively contribute to the increasing of public interests through various media including exchange with national and international organizations.

6.2 Summary of Expertise available from Scientific and Educational Institutions

Table 6.A: Summary of Expertise available from Scientific and Educational Institutions

Field of Expertise	Research Institutions	Universities	Industry	Professional Orgs
Data collection	EDC, Hygienic Research Institute, Research Institute of Municipal Management, Academy of Agricultural Science Academy of Medical Science Central Epizootic Station	Faculty of Global Environmental Science, **Kim Il Sung** University Faculty of Environmental Engineering of University of Construction and Building Materials, College of Municipal Management, Faculty of Hygiene of University of Medical Science	Ministry of Chemical Industry	Grand People's Study House Department of Environment Protection of MLEP, Environmental Protection Stations of Provinces, Cities, and Counties
Testing of Chemicals	EDC, Analytic station of the State Academy of Science, Hygienic Research Institute, Central Epizootic Station	Faculty of Chemistry of **Kim Il Sung** University, Analytic Station of Kim Chaek Polytechnic University, Hamhung University of Chemical Industry	EDC	EDC, Analytic station of the State Academy of Science, Hygienic Research Institute, Central Epizootic Station
Risk Assessment	EDC, Analytic station of the State Academy of Science, Hygienic Research Institute, Central Epizootic Station	Faculty of Chemistry of **Kim Il Sung** University, Analytic Station of Kim Chaek Polytechnic University, Hamhung University of Chemical Industry, Faculty of Hygiene of Medical University	EDC	EDC, Analytic station of the State Academy of Science, Hygienic Research Institute, Monitoring and Supervising Stations of Provinces, Cities, and Counties,
Risk Reduction	EDC, Research Institute of the Environmental Engineering , Research Institute of Municipal Management	**Kim Il Sung** University, Hamhung University of Chemical Industry, College of Municipal Management	EDC, Central Monitoring and Supervising	EDC Hygienic Research Institute, Monitoring and Supervising Stations of Provinces, Cities, and Counties,
Policy Analysis	EDC	**Kim Il Sung** University		MLEP
Training and Education	EDC, Research Institute of the	Faculty of Global Environmental Science of		EDC, Monitoring and Supervising

	Environmental Engineering , Research Institute of Municipal Management	**Kim Il Sung** University Faculty of Environmental Engineering of University of Construction and Building Materials, College of Municipal Management, Faculty of Hygiene of University of Medical Science		Stations of MLEP
Research on Alternatives	EDC, Research Institute of the Environmental Engineering , Research Institute of Municipal Management	**Kim Il Sung** University, Hamhung University of Chemical Industry, College of Municipal Management	Laboratories of Different Factories	EDC
Monitoring	EDC, Research Institute of Hygiene			MLEP, Hygienic Research Institute, Central Monitoring and Supervising Stations
Information to Workers	EDC, Research Institute of Environmental Engineering, Research Institute of Municipal Management	**Kim Il Sung** University, Hamhung University of Chemical Industry, College of Municipal Management	Laboratories of Different Factories	EDC
Information to Public	EDC, Research Institute of Environmental Engineering, Research Institute of Municipal Management	**Kim Il Sung** University, Hamhung University of Chemical Industry, College of Municipal Management	Laboratories of Different Factories	Central Bureau of TV and Broadcast, MLEP
Monitoring on Health	Research Institute of Hygiene	University of Medical Science		Ministry of Public Health
Monitoring on the Environment	EDC, Central Research Institute of Hygiene			MLEP, Monitoring and Supervising Stations of Provinces, Cities, and Counties, Epizootic Stations of Provinces, Cities, and Counties,

6.3 Comments/Analysis

Public awareness concerned with chemicals is conducted actively in DPR Korea by the Natural Conservation Union and Korea Medical Association.

The government agencies responsible for chemicals management conduct data exchange and cooperation through national workshops, and the associations, such as Air Association, Soil Association and Water Association, meet once a week and make plans and discuss the development of data reports and environmental protection.

Chapter 7. Coordinating Mechanisms

7.1 Coordinating Mechanism

Table 7.A: Overview of Coordinating Mechanisms

Name of Mechanism	Responsibilities	Members
National Profile Preparation Committee	Coordinates data collection and management measures for the overall chemicals management	Senior officials of relevant ministries and agencies
Korea Medical Association	Coordinates data collection, awareness raising and management measures for the management of chemicals used in the process of producing medicines	Officials from MPH and relevant agencies under MPH
National Hygienic Inspection Committee	Coordinates supervision, data collection and awareness raising for the food safety	Senior officials of relevant agencies

7.2 Comments/Analysis

The current coordinating mechanisms for chemicals and waste management in DPR Korea is imperfect and MLEP functions to monitor and supervise the chemicals management through NCCE, though, it is not carrying out the regular data collection from all relevant ministries and agencies. Professional coordinating mechanism for the management of chemicals should be established.

Chapter 8. Data Access and Use

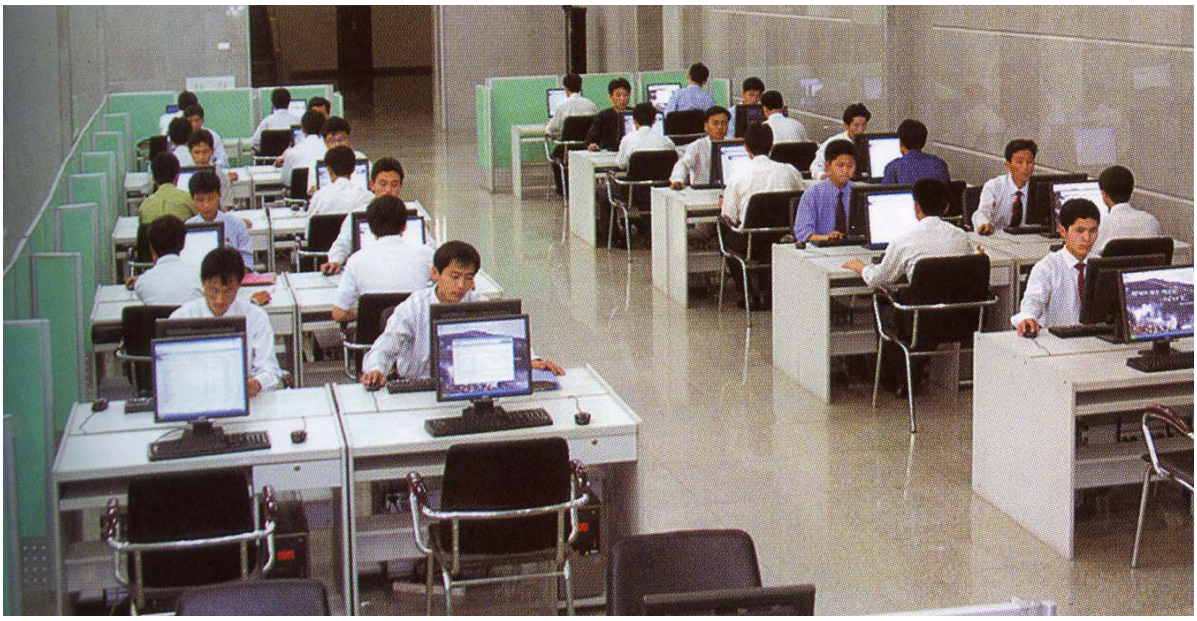


Figure 6. E-library of Kim Chaek Polytechnical University

8.1 Availability of Data for National Chemicals and Wastes Management

Table 8.A: Quality and Quantity of Available Information

Data Needed for / to:	Pesticides(agricultural, public health and consumer use)	Industrial Chemicals	Consumer Chemicals	Chemical Wastes
Priority Setting	X	X		
Assess Chemicals Impact under Local Conditions		X	X	
Risk assessment (environment/health)	X	X	X	X
Classification/Labeling				
Registration			X	
Licensing	X	X	X	X
Permitting	X	X	X	X
Risk Reduction Decision	X	X		
Accident prepared/Response	X	X		X
Poisoning Control	X	X	X	X
Emissions Inventories				
Inspections & Audits(environment/health)	X	X	X	X
Information to	X	X	X	X

Workers				
Information to Public	X	X	X	X

Note: "X" indicates sufficient information available

8.2 Location and Access of National Data, Types of Data

Table 8.B: National data location and types

Type of data	Location(s)	Who has access?	How to gain access	Format
Production statistics	1.MA 2.MCI 3.NQSB	1. Staff 2. Staff 3. Staff	1. Inquiry 2. Inquiry 3. Inquiry	1. Document 2. Document 3. Document
Import Statistics	1. GAC 2.MFT 3.MLEP	1. Staff 2. Staff 3. Staff	1. Inspection 2. Inquiry 3. Inquiry	1. Document 2. Document 3. Document
Export Statistics	1.GAC 2.MFT 3.MLEP	1. Staff 2. Staff 3. Staff	1. Inspection 2. Inquiry 3. Inquiry	1. Document 2. Document 3. Document
Chemical Use Statistics	1.NQSB 2.MCI 3.MA	1. Staff 2. Staff 3. Staff	1. Inquiry 2. Inquiry 3. Inquiry	1. Document 2. Document 3. Document
Industrial Accident Report	1.MLEP 2..MPH 3.MCM 4.MA 5.MCI 6.MEPI 7.MMI	1. Staff 2. Staff 3. Staff 4. Staff 5. Staff 6. Staff 7. Staff	1. Inquiry 2. Inquiry 3. Inquiry 4. Inquiry 5. Inquiry 6. Inquiry 7. Inquiry	1. Document 2. Document 3. Document 4. Document 5. Document 6. Document 7. Document
Transport Accident Report	1.MR 2.MLMT 3.MPS	1. Staff 2. Staff 3. Staff	1. Inquiry 2. Inquiry 3. Inquiry	1. Document 2. Document 3. Document
Occupational Health Data(agricultural)	1.MPH 2.MA	Staff, Researcher	Write, edit	Database
Occupational Health Data(industrial)	1.MCI 2.MMtI 3.MMI	Staff, Researcher	Write, edit	Database
Poisoning Statistics	1.EDC 2.HI 3.AAS	Researcher	Write, edit	Database
Pollutant Release and Transfer Register	1.MLEP 2.CMSS	1.Staff 2.Superviser	1.Inquiry 2.Inquiry	1. Document 2. Document
Hazardous Waste Data	1.MLEP 2.CMSS 3.CBS	1.Staff 2.Superviser 3.Stuff	1. Inquiry 2. Inquiry 3. Inquiry	1. Document 2. Database 3. Database

Register of Pesticides	1.MA 2.AAS 3.CBS 4.NBQS	1.Staff 2.Researcher 3.Staff 4.Staff	1. Self search 2. Self search 3. Self search 4. Self search	1.Document 2.Database 3.Database 4.Document
Register of Toxic Chemicals	1.MCI 2.MLEP 3.CBS 4.NBQS	1.Staff 2.Researcher 3.Staff 4.Staff	1. Self search 2. Self search 3. Self search 4. Self search	1.Document 2.Database 3.Database 4.Document
Inventory of Existing Chemicals	1.MCI 2.MPH 3.CBS 4.NBQS	1.Staff 2.Staff 3.Staff 4.Staff	1. Self search 2. Self search 3. Self search 4. Self search	1.Document 2.Database 3.Database 4.Document
Register of Import	1.GAC 2.MA 3.MCI 4.MPH	1.Staff 2.Staff 3.Staff 4.Staff	1. Inquiry 2. Inquiry 3. Inquiry 4. Inquiry	1.Document 2.Document 3.Database 4.Database
Register of Producer	1.MA 2.MPH 3.MCI	1.Staff 2.Staff 3.Staff	1. Inquiry 2. Inquiry 3. Inquiry	1.Document 2.Database 3.Document

Chapter 9. Technical Infrastructure

Picture 7. Research on pesticides in the Academy of Agricultural Science

9.1 Overview of Laboratory Infrastructure

Table 9.A: Overview of Laboratory Infrastructure for Regulatory Chemical Analysis

Name/Description of Laboratory	Location	Equipment/Analytical Capabilities Available	Accreditation	Certified GLP	Purpose
National Focal Point of Environmental Analysis, EDC	Moranbong District, Pyongyang City	1* HPLC, GC, AAS, UV-VIS		Environmental Certification Station	Certification
Chemical Research Institute , AAS	Ryongsong District, Pyongyang City	HPLC, GC, AAS, UV-VIS			Organic toxic materials control
Central Analysis Station, AoS	Pyongsong City , South Pyongan Province	GC, IC AAS, UV-VIS			Toxic chemicals control
Research Institute for Children's Nutrition, AMS	Dongdaewon District, Pyongyang City	HPLC, FID, AES AAS, UV-VIS			Toxic chemicals control

Table 9.B: Overview of Lobarotory Infrastructure for Supervision and Analysis

Name/Description of Laboratory	Location	Equipment /Analytical Capabilities Available	Accreditation	Analysed chemicals and main purpose	Amount of standard agent
National Focal Point of Environmental Analysis, EDC	Pyongyang City	HPLC, GC, IR AAS, UV-VIS		Analysis, control, monitoring	2**
Chemical Research Institute, AAS	Pyongyang City	HPLC, GC, AAS, UV-VIS		Analysis, control, monitoring	2**
Central Analysis Station, AoS	Pyongsong City , South Pyongan Province	GC, IC AAS, UV-VIS		Analysis, control	
Research Institute for Children's Nutrition, AMS	Pyongyang City	HPLC, FID AAS, UV-VIS		Analysis	
Central Monitoring and Supervision Station	Pyongyang City	AAS, ECD UV-VIS		Analysis, control, monitoring	
Provincial, municipal, county Environmental Monitoring Station	Provincial, municipal, county seat	IC, AAS, IR		Analysis, control, monitoring	
Hygienic and Epizootic Station, MPH		AAS, IR, UV-VIS		Analysis, control	
Analytical Research Institute, **Kim Il Sung** University	Pyongyang City	AAS, ECD, FID, IC, FTIR, NMR UV-VIS, AES		Analysis	
Analytical Research Institute, Kim Chaek Industrial University	Pyongyang City	AAS, UV-VIS, IC, GC		Analysis	

[1*] AAS = Atomic Absorption Spectrophotometer

ECD = Electron Capture Detector

FID = Flame Ionization Detector

FTIR = Fourier Transform Infra-Red Spectrophotometer

GC = Gas Chromatograph

HPLC = High Pressure Liquid Chromatograph

IC = Ion Chromatograph

IR = Infra-Red Spectrophotometer

NMR = Nuclear Magnetic Resonance Spectrophotometer

AES = Atomic Emission Spectrophotometer

UV-VIS = UV-VIS Spectrophotometer

2** Aldrin solution 2ml

Dieldrin solution 2ml

Endrin solution 2ml

α-chlordan 2ml

4,4-DDT solution 2ml

Heptachlor solution 2ml

α-Hexachlorocyclohexan solution 2ml

Mirex solution 2ml

Toxaphen multi standard solution 2ml

PCB standard solution 2ml

Figure 8. Analysis on water pollution in Taedong river

9.2 Comments/Analysis

DPR Korea has not yet established perfect infrastructure for the assessment, analysis, research and development of chemicals.

Even though EDC, AS, AMS and AAS have their own laboratories and research groups studying the impacts of chemicals on the environment and human health and its responses, insufficient technical equipments leads to the lack of technical capacity so that their activities

in most cases have been directed to only hazardous organic chemicals.

The national focal point of environmental analysis in EDC, based on the field survey of our country and international data for chemicals and POPs, conducts research activities to assess and determine the current situation and to assess the remaining quantities of toxic chemicals in rivers and streams, sea, land and crops.

However, poor equipment and improper use of high pure reagents as extracting solvents make it difficult to find out the correct values in analysis. In addition, another challenge is the lack of international cooperation in the field of chemicals and PTS information.

It is necessary to strengthen the technical capacity for the comprehensive assessment, analysis and research of the chemicals and wastes management in DPR Korea.

Chapter 10. Chemical Emergency Preparedness, Response, and Follow-up

10.1 Chemical Emergency Planning

In DPR Korea, the departments in the Ministry of Labor responsible for labor safety conduct the safety works on the basis of a well-ordered system in all localities, and the Ministry of People's Security and other responsible ministries and agencies are also undertaking regular investigations to counter accidents.

Measures are taken beforehand so that various accidents, explosions due to chemicals in particular, which may cause damage to environment and lives as well, are avoided.

The workers engaging in the dangerous workshops are required to strictly observe the disciplines of labor safety and awareness raising is conducting actively among them so that they might be prepared for all chemical accidents. Households are bound not to engender gas explosions and an emergency warning system has been established to inform of the accidents in time. "Accident prevention months" have been established in the spring and autumn and public awareness raising and accident prevention activities are undertaken in these periods.

Also an accident response system has been established.

It is ensured that people harmed due to chemicals are evacuated from the damaged areas immediately and provided the needed medical treatment. Related to this, specialized education is given to the security agencies, fire brigades, medical agencies and other relevant sectors for dealing with emergencies and such trainings are actively undertaken on a nation-wide scale.

The chemicals to be transported are fully packaged and the delivery, monitoring, supervision and management are conducted according to the regulations.

Safety regulations are kept to not cause accidents as well as the process management is performed in conformity with the standard regulations of operation.

10.2 Chemical Incident Response

In case of gas leakage in the chemical plants and refineries causing emission of polluting gases, the production processes shall be stopped immediately and the exhausters are operated to the full to change the air.

Regular measurement and monitoring of emission sources is conducted whereby the waste gas purification is executed to minimize the concentration of pollutants to discover the gas leakage in the production processes and secure the life safety of the workers.

10.3 Chemical Incident Follow-up and Evaluation

In the case of an accident due to chemicals, the prompt detailed measures are taken on the spot not to be spread and the cause and blame of accident is investigated, thereinafter, the legal accountability is taken against the concerned agencies and offenders, while the Ministry of People's Security is in charge of keeping records.

As for the people and environment damaged by accidents, long-term investigation is performed to evaluate the effects to human bodies and the natural environment.

On the other hand, the rehabilitation of destroyed environment is undertaken.

10.4 Comments/Analysis

In order to prevent the accident caused by chemicals, it is essential to enhance the overall capacity for more safe management of chemicals, including chemical emergency preparedness, response, and follow-up.

To this end, the national strategy on chemicals management should be prepared and the national implementation of the globally harmonized system of classification and labeling of chemicals (GHS) should be undertaken as well as a comprehensive registration system of chemicals established, while creating the necessary overall management mechanism of chemicals to effectively implement the strategy.

It is important to set up standard system for chemicals management, permission system in the production and use of chemicals, and an assessment and supervision system of pollutants.

Certain schemes are laid against accidents, however, the equipment for these works are not perfect yet. Modern equipment and gas proof means, therefore, should be prepared for the

prompt counteraction in case of accidents caused by chemicals in the sectors of fire services, security and medical treatment.

Chapter 11. Awareness/Understanding of Workers and the Public

11.1 Awareness and Understanding of Chemical Safety Issues

In DPR Korea, public awareness raising is executed through mass media, social organizations, education and training centers, educational institutions as well as the national administrative system. In particular, it is considerable that the public awareness raising system has been well established and effective.

The environmental protection organizations, public health establishments and hygienic and anti-epidemic institutions have played important roles in the preparation of the POPs inventories and the awareness raising for the dissemination of knowledge on POPs. Scientific research institutions have made a significant contribution to the basic data collection and communication of POPs monitoring including the identification of polluted areas.

Public awareness raising on the management of chemicals in DPR Korea has been undertaken in the course of implementation of the "National Implementation Plan of Stockholm Convention in DPR Korea on POPs" after it joined the Stockholm Convention. In this process, the propaganda works were performed in 3 stages with the use of various means of public awareness raising on chemicals, POPs, in particular.

Three lectures were given for decision makers and booklets on POPs were published and distributed to the stakeholders in this period.

TV interviews were held 3 times and 5 multimedia packages were produced including "POPs and our life" and "Dioxin and Furan" to be telecasted 6 times and several times respectively.

Five posters were created and published, and a mass lecture was performed on a nationwide scale.

It is expressive that the workers in all situations handling chemicals together with the public are regularly informed of the state policy on chemicals and certain problems for its realization as well as various mass propaganda activities. In particular, the detailed action rules and regulations that are prepared to protect human health and environment in the treatment of chemicals on the continuous improvement in accordance with the development of industry.

It is ensured that the agricultural working people are acquainted with the safe use methods of chemicals such as pesticides and that they take due personal protection measures and strict observations.

With such activities, the decision makers and public have a strong desire for the voluntary participation in the safe management of chemicals.

The laws and regulations concerned with public awareness raising on the safety issues of chemicals are as follows:

In the "Law on Public Hygiene of DPR Korea", it is defined that the education on chemicals should be developed among people so that they participate in the chemicals management as masters.

In the "Law on Socialist Labor of DPR Korea", it is stipulated that the education system on labor safety should be established thoroughly for the cognition of working people on the policy of labor safety and technical knowledge of labor safety to integrate labor protection into their work.

In the "Law on Foodstuff Hygiene of DPR Korea", the workers producing and handling foodstuffs are determined to be further educated for and participate in this work in conscious manner.

In the "Law on Environment Protection of DPR Korea", the educational and mass media institutions assume the roleto execute the dissemination of scientific knowledge and mass education to protect the environment with various forms and methods as well as the wide introduction and propaganda to achieve environmental protection.

11.2 Education and Training for Sound Management of Chemicals and Waste

In the course of Stockholm Convention, agreement has been reached through the consultation between the Ministry of Education and other stakeholders to include in the curriculum of secondary and advanced education the educational contents for the safety management of POPs and other chemicals as well as to prepare the schedule to create the dissemination center of POPs information.

The Faculty of Chemistry **of Kim Il Sung** University has established a new subject of "Environmental Chemistry" to teach the students on various factors affecting the environment

such as production, transportation and disposal of all polluting non-organic and organic toxic compounds.

In all relevant research institutes and the professional education sectors, training is active for the future competent scientists in charge of chemicals management and related scientific and technological exchanges and external cooperation are planned.

11.3 Comments/Analysis

The reporting system is not properly established on the data of chemicals safety. What's more is the lacking of data management coordination on the safety of chemicals. Certain educational and research institutions perform sporadic data communication without any coordination.

Chapter 12. International Linkages

DPR Korea puts forward the protection of human health and the improvement of people's lives as one of its most important tasks, and hence energetically participates in international activities of environmental protection.

The list below shows the international conventions that the DPR Korea has entered.

UN Convention on Biological Diversity	26 Oct 1994
UN Framework Convention on Climate Change	5 Dec 1994
Vienna Convention on Protection of Ozone Layer	5 May 1995
Montreal Protocol on Substances that Depletes the Ozone Layer	6 May 1995
Stockholm Convention on Persistent Organic Pollutants	19 Aug 2002
Cartagena Protocol on Biosafety	29 July 2003
UN Convention on Combating Desertification	28 Mar 2004
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade	6 Feb 2004
Kyoto Protocol	27 April 2005
Basel Convention on Transboundary Movements of Hazardous Wastes and their	10 July 2008

Disposal	

Table 12.A : Membership in International Organizations, Programmes and Bodies

International organization/Body/Activity	National Focal Point	Other Ministries/Agencies Involved	Related National Activity
WHO	MPH		
FAO	MA, MLEP		
UNDP	NCCE	MLEP, MCI, MMI, MMtI, MA, MEI	
UNEP	NCCE	MLEP, MCI, MMI, MMtI, MA, MEI	
WFP	MA	MLEP	
UNICEF	ME, MLEP		Aquatic hygienic activity

Table 12.B : Participation in International Agreements/Procedures Related to Chemicals Management

International Agreement	Primary Responsible Agency	Relevant National Implementation Activities
Montreal Protocol	NCCE	Refrigerant Management Plan, National CFCs Phase-out Plan, ODS Management Plan, National Carbon Tetrachloride Phase-out Plan
Rotterdam Convention	NCCE	
Stockholm Convention	NCCE	National Implementation Plan for Stockholm Convention on Persistent Organic Pollutants
Basel Convention	NCCE	
Kyoto Protocol	NCCE	
GHS	NCCE	
SAICM	NCCE	National Implementation Plan for SAICM

Chapter 13. Resources Available and Needed for Chemicals Management

13.1 Resources Available in Government Ministries/Institutions

Table 13.A: Resources Available in Government Ministries/Institutions

Ministry	Allocated Responsibility	Number of Professional Staff Involved	Type of Expertise Available	Financial Resources Available
State Planning Committee	Production import&export planning for supply	N.A	Planning expert	N.A
Ministry of Land and Environment Protection	Assessment, monitoring, supervision, control	N.A	Environmental expert	N.A
Ministry of Chemical Industry	Production, utilization	N.A	Chemical expert	N.A
Ministry of Agriculture	Utilization import&export	N.A	Agricultural expert	N.A
Ministry of Public Health	utilization	N.A	Biochemical expert	N.A
Ministry of Machine Industry	Production, repairing	N.A	Mechanical expert	N.A
Ministry of Electric Power Industry	Production, repairing	N.A	Electric expert	N.A
Ministry of Metal Industry	Technical modernization	N.A	Metal expert	N.A
Ministry of Construction and Building Materials Industry	Technical modernization	N.A	Construction expert	N.A
Ministry of City Management	Transportation, storage, utilization	N.A	Municipal management expert	N.A
General Customs Bureau	Control on import and export	N.A	Chemical expert Medical expert Mechanical expert Biological expert Engineer Researcher	N.A
Ministry of Land and Marine Transport, Ministry of Railways	Transport	N.A	Transport official	N.A

Ministry of Foreign Trade	Control on import and export	N.A	Chemical expert Environmental expert Biological expert Mechanical expert Metal expert Agricultural expert Pharmaceutical expert Engineer	N.A
National Bureau for Quality Supervision	Registration, standard adoption, assessment, supervision	N.A	Certification inspector Chemical expert Environmental expert Biological expert Mechanical expert Pharmaceutical expert Metal expert	N.A
Ministry of People's Security	Monitoring, control	N.A	Security man	N.A
Environment and Development Center	Assessment, analysis, monitoring, preparation of political response	N.A	Environmental expert Chemical expert Biological expert Analytical expert Certification Inspector Engineer	N.A
Central Environmental Monitoring and Supervision Station	Monitoring, supervision, control	N.A	Engineer	N.A
Academy of Science	Scientific research	N.A	Expert Researcher Engineer	N.A
Academy of Medical Science	Scientific research	N.A	Expert Researcher Engineer	N.A
Academy of Agricultural Science	Registration, Approval, Management	N.A	Expert Researcher Engineer	N.A
Kim Il Sung University	Scientific research	N.A	Researcher Analyzer	N.A
Kim Chaek Polytechnic University	Scientific research	N.A	Researcher Analyzer	N.A

13.2 Resources Needed by Government Institutions to Fulfil Responsibilities related to Chemicals Management

Table 13.B: Resources Needed by Government Institutions to Fulfil Responsibilities Related to Chemicals Management

Ministry Concerned	Responsibility to be Allocated	Number/ Type of Professional Staff Needed	Training Requirements
Ministry of Land and Environment Protection	Monitoring and supervision on chemicals	Chemical expert 2	Risk assessment, emergent responses for incidents, monitoring capacity
Ministry of Chemical Industry	Chemicals production, storage, transport, use and treatment	Chemical expert 2	Use and monitoring capacity
Ministry of Agriculture	Transport, storage, use and treatment	Agricultural expert 1	Use and monitoring capacity
Ministry of Public Health	Transport, storage, use and treatment	Pharmaceutical expert 1	Use and monitoring capacity
Ministry of Machine Industry	Storage, use and treatment	Mechanical expert 1	Capacity to use chemicals and to handle the equipments
Ministry of Electric Power Industry	Electric power supply for chemicals management	Electrical expert 1	Electric power supply for chemicals management
Ministry of Metal Industry	transport, storage, use and treatment	Metal expert 1	Transport, storage, use and treatment capacity
Ministry of Construction and Building Materials Industry	transport, storage, use and treatment	Building expert 1 Architectural expert 1	Transport, storage, use and treatment capacity
Ministry of City Management	Transport, storage and use	Municipal management expert 1	Transport, storage and use capacity
General Customs Bureau	Control on import and export	Chemical expert 2	Packing and identification capacity
Ministry of Land and Marine Transport, Ministry of Railways	Transport, storage and packing	Official with basic knowledge for chemistry	Transport, storage and identification capacity
Ministry of Foreign Trade	Import and export limitation	Chemical expert 1	Transport, storage and identification capacity
National Bureau for Quality Supervision	Chemicals standard adoption, guarantee on quality	Quality inspector 1 Standard adopter 2	Chemicals identification capacity
Ministry of People's Security	Illegal use control	Security official	Storage and use capacity
Environment and Development Center	Assessment of impact and risk of chemicals, classification method, certification, analysis, treatment, monitoring, research, preparation of standard, guidelines and political approaches	Environment expert 3 Environment inspector 2 analyzer 3	Environmental management for environmental certification, analysis, classification, identification, management and treatment
Central Environmental Monitoring and Supervision Station	Chemicals use monitoring and measurement	Monitor and supervisor 3 Analyzer 3	Use, supervision and analytical capacity
Academy of Science	Chemicals analysis, treatment, effective use	Chemical expert 2	Chemicals analysis, classification and treatment capacity
Academy of Medical Science	Evaluation on chemicals toxicity	Medical expert 2	Chemicals analysis, classification and treatment capacity

Academy of Agricultural Science	Manufacture, utilization, storage, treatment of agricultural chemicals	Chemical expert 2 Agricultural expert 1	Chemicals analysis, classification and treatment capacity
Kim Il Sung University	Chemicals analysis and classification method	Chemical expert 2 Analytical expert 1	Chemicals analytical, classification and treatment capacity
Kim Chaek Polytechnic University	Chemicals analysis and classification method	Chemical expert 2 Analytical expert 1	Chemicals analytical and treatment capacity

13.3 Comments/Diagnosis

Institutions have sections with experts addressing the production, transport, import, export and use, but lack of capacity to conduct the specialized activities related to chemicals management.

The Faculty of Chemistry in **Kim Il Sung** University conducts educational works with the new environmental chemistry subject but has a number of shortcomings in its content, area and experience.

It is essential to strengthen the national management capacity giving importance to the training for chemicals management and to assign the environmental and chemical experts to relevant sections in a rational way to build their capacity in the future.

Chapter 14. Conclusions and Recommendations

Chemicals management is a complex issue in DPR Korea that should be solved urgently.

Based on the comprehensive assessment of POPs of the country through the implementation of Stockholm Convention on POPs, the national strategy for POPs management has been prepared, national priorities by categories have been assessed and 9 action plans have been prepared.

However, while preparing the National Profile, it was recognized that there are many challenges in the legislative and administrative fields as well as in technical and human resources for the integrated chemicals management of the country.

The challenges include the absence of comprehensive laws and regulations on chemicals management as well as coordinating activities under an integrated chemicals management system covering all of the relevant agencies. The lack of the technical infrastructure for chemicals management as well as the lack of analytical equipments are also considered as challenges.

All chemicals related issues including production, use, import, export and release can only be tackled successfully by the energetic efforts of all relevant agencies providing sufficient legal and administrative commitments and support, as well as the required human, technical and financial resources.

In order to build capacity for sound chemicals management in DPR Korea, the following actions are required:

- comprehensive laws and regulations on production, transport, import, export and use of chemicals should be formulated.
- mechanisms coordinating relevant agencies should be established.
- systems to collect, analyze and distribute the data on chemicals safety should be improved.
- training system for chemicals management should be established to strengthen the capacity of experts.
- a chemicals monitoring and analyzing system should be established with upgraded equipment.

- public awareness should be enhanced to promote the participation of public in the chemicals management while increasing the role of civil society.

Though the chemicals management issues are great challenges to be dealt with on a long-term basis, the government of DPR Korea is firmly determined to improve the state in the very near future, thus contributing to the improvement of the environment at a national, regional, and global level, and fulfilling its commitments to chemicals-related international agreements including the Stockholm Convention.

The DPR Korea will make every effort to contribute to the overall economic development and the improvement of the people's livelihood as well as to the improvement of global environment.

Annex I. Available National Reports and Papers Addressing Various Aspects of Chemicals Management

1. Annual Statistics of CSB (2000 – 2005)
2. Report of Assessment Section, Department of Environment Protection , MLEP (2002 – 2005)
3. Report of Management Section, Department of Environment Protection, MLEP 2004
4. Pyongyang City Environment Assessment and its Responses of EDC 2002
5. Namhung Youth Chemistry Complex Environment Assessment and its Responses of EDC 2008
6. Analytical Data of National Focal Point for Environmental Analysis, EDC
7. Monitoring Data of the Central Environmental Monitoring and Supervision Station (1996 – 2008)
8. Production Result Report of MCI (1996 – 2005)
9. Statistics for Raw Materials Supply of MCI (2002 – 2005)
10. Table for Chemicals Production Area of SPC
11. Import and Export Data of Ministry of Foreign Trade (1996 – 2005)
12. Data of Analytical Room, Chemical Institute, Academy of Agricultural Science
13. Table for Characteristic of Chemical Fertilizer and Agricultural Pesticides
14. Safe Management of the Chemicals, Response to the Chemical Enterprise and Chemical Engineering 1999
15. Assessment and Control of the Chemicals harmful to the Surrounding Environment 1991
16. Hygiene and Poisoning of the Biochemicals 1985
17. Danger Management of the Chemicals, Chemical Industry 1998
18. Danger and Management of the Chemicals, Chemistry and Education 1999

19. Assessment and Control on the Chemicals harmful to the Surrounding Environment 1991
20. Environment Pollution Danger of the Chemicals and its Responses 1993
21. Safety Assessment of the Chemicals in Foodstuffs 1999
22. National Implementation Plan for Stockholm Convention on POPs, DPRK 2008. 7
23. Collection of Themes and Essays in Commemoration of Population Research Institute 2006
24. International Program on Chemical Safety
25. International Register of Potentially Toxic Chemicals Bulletin
26. Safety in Chemical laboratories and in the use of Chemicals 1971
27. Preparing a National Profile to Assess the National Infrastructure for Management of Chemicals (Guidance document/UNITAR)

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