

# MALDIVES NATIONAL CHEMICAL PROFILE



MINISTRY OF ENVIRONMENT AND ENERGY  
REPUBLIC OF MALDIVES

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MNCP 2015



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## FOREWORD



Foreword By His Excellency  
ABDULLA YAMEEN ABDUL GAYOOM  
President of the Republic of Maldives

The future of a country is tied to the well-being of its citizens. Development should place people at the center, and recognize the inherent link between the environment and well-being of people. The government is mindful of this development and environment nexus, and takes every effort to ensure that development is sustainable. The sound management of chemicals is an important aspect in this regard. It is an issue that we cannot choose to ignore, but must take concrete and long term action to protect the environment and human health.

Individual and collective responsibility in this regard is critical in making substantive progress towards sound management of chemicals. We need to be mindful of not only our rights, but also of our responsibility in protecting the environment today and for future generation. The future security and safety of our peoples reside in our efforts to this regard.

The government is committed to spearhead this effort. I welcome the support we have received both at the national and international community towards the sound management of chemicals in the country. I take the opportunity to reiterate the government's commitment to this regard.

## MINISTER'S MESSAGE



Message By  
THORIQ IBRAHIM  
Minister of Environment and Energy

The sound management of chemicals is a critical and urgent issue facing the Maldives. Our pristine environment and the health and well being of our peoples are at stake as we seek to address this critical issue. There is a need to institute long term and holistic solutions to this regard. This requires broad based participation, involving both the public and the private sector.

To date, the primary hurdle in the sound management of chemicals is the lack of data as well as coordination across various stakeholders. The current Profile is a beginning in the government led efforts to ensure the establishment of a robust mechanism for chemicals management in the country. I am confident that this Profile provides a starting point and will serve as a reference document for subsequent policies towards the sound management of chemicals in the Maldives.

The current Profile has been compiled through the participation and consultation of various stakeholders as well as through generous financial and technical support from the SAICM Quick Start Programme. I wish to take the opportunity to thank everyone involved in formulating this Profile and look forward to concrete and substantive actions springing from this Profile.

## ACKNOWLEDGEMENTS

Over 17 governmental, non-governmental, and private institutions assisted in the preparation of the National Chemical Profile of the Maldives.

Special mention is conveyed to the Stockholm Convention on Persistent Organic Pollutants' National Implementation Plan project team whose contribution to the realization of this document was instrumental.

The Ministry of Environment and Energy deeply appreciates the guidance of the National Chemical Management Committee members, lead stakeholders and working group members for their invaluable data contribution, continuous review and input that went into the formulation of this Profile.

The Government of Maldives also appreciates the financial support through SAICM QSP in preparing the National Chemical Profile of the Maldives.

The Government of Maldives further recognizes that the National Chemical Profile is a living document and the current Profile is the first version which will be reviewed at regular intervals and updated in the light of changes and new policies.

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## ABBREVIATIONS

**AA***Alif Alif Atoll***AAS***Atomic Absorption Spectroscopy***ADH***Alif Dhaal Atoll***AES***Atomic Emission Spectroscopy***CFC***Chloroflourocarbon***CIF***Cost, Insurance and Freight***CWC***Chemicals Weapon Convention***DMSC***Department of Medical Sciences***DNP***Department of National Planning***EIA***Environment Impact Assessments***EPA***Environmental Protection Agency  
E-Waste Electronic Waste***FAO***Food and Agriculture Organization***FTIR***Fourier Transform Infrared  
Spectroscopy***GC***Gas Chromatography***GDP***Gross Domestic Product***GEF***Global Environment Facility***GF-AAS***Graphite Furnace Atomic Absorption  
Spectrometry***GHG***Greenhouse gas***GN***Gnaviyani Atoll***HA***Haa Alif Atoll***HCFC***Hydrochloroflourocarbons***HDH***Haa Dhaal Atoll***HPA***Health Protection Agency***HPLC***High Performance Liquid  
Chromatography***HSN***Harmonized System Nomenclature***IARC***International Agency for Research on  
Cancer***IFCS***Intergovernmental Forum on Chemical  
Safety***ILO***International Labour Organization***IMO***International Maritime Organization***IOMC***Inter-Organization Programme for the  
Sound Management of Chemicals***IPM***Integrated Pest Management***ISO***International Organization for  
Standardization***K***Kaafu Atoll***L***Laamu Atoll***M***Meemu Atoll***MARPOL***International Convention for the Prevention  
of Pollution from Ships (Marine Pollution)***MCC***Male' City Council***MCS***Maldives Customs Service***MDNS***Ministry of Defence and National  
Security*

**MEE**  
Ministry of Energy and Environment

---

**MOFA**  
Ministry of Fisheries and Agriculture

---

**MFDA**  
Maldives Food and Drug Authority

---

**MNDF**  
Maldives National Defence Force

---

**MNU**  
Maldives National University

---

**MOE**  
Ministry of Education

---

**MOH**  
Ministry of Health

---

**MPL**  
Maldives Ports Limited

---

**MPS**  
Maldives Police Service

---

**MSDS**  
Material Safety Data Sheet

---

**MVR**  
Maldivian Rufiyaa

---

**MWSC**  
Male' Water and Sewerage Company

---

**N**  
Noonu Atoll

**NCMC**  
National Chemical Management  
Committee

---

**NGO**  
Non-Governmental Organization

---

**NPK**  
Nitrogen, Phosphorous, Potassium

---

**OCPS**  
Organochlorine Pesticides

---

**ODS**  
Ozone Depleting Substances

---

**PCB**  
Polychlorinated biphenyls

---

**POP**  
Persistent Organic Pollutants

---

**S**  
Seenu Atoll

---

**SAICM**  
Strategic Approach to International  
Chemicals Management

---

**SH**  
Shaviyani

---

**SOLAS**  
Safety of Life at Sea

---

**TEQ**  
Toxic Equivalency Factor

---

**TH**  
Thaa Atoll

**UN**  
United Nations

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**UNDP**  
United Nations Development  
Programme

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**UNEP**  
United Nations Environmental  
Programme

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**UNITAR**  
United Nations Institute for Training  
and Research

---

**US EPA**  
United States Environmental Protection  
Agency

---

**UV-VIS**  
Ultraviolet Visible Spectroscopy

---

**WHO**  
World Health Organization

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**WSSD**  
World Summit on Sustainable  
Development

## EXECUTIVE SUMMARY

The sound management of chemicals is a critical issue that has implications for both the environment and human health. As a Small Island Developing State, with limited technical capacity, infrastructure and financial resources, the management of chemicals in a holistic manner is a significant challenge in the Maldives.

The current Profile examines the various sources and trends of chemicals import; the institutional, policy and regulatory framework; current infrastructure; technical capacity; and level of awareness with regard to chemicals and its management in the country.

The fragmented nature of governance and regulations in relation to chemicals management in the country remain the major hurdle in addressing chemical management issues. In this regard, mandate overlaps, limited co-ordination and inadequate regulatory framework are critical issues that need to be addressed. The Profile also finds that there are significant data gaps in relation to chemicals management. In the absence of such information, it is difficult to gauge the environmental and societal impact chemicals have had over the years. Since such information is critical for informed decision making, this may then limit the policy interventions that are required.

Although various agencies and organizations collect chemicals related data, there is limited exchange amongst various actors. There is then a need for a coordinated and concerted effort to harmonize methodologies of data collection and collation across various institutions and bodies. It also requires the development of a coherent and robust policy and regulatory framework to limit the duplication of work and enhance the enforcement functions of the concerned agencies. Related to this, there is also an identifiable need

to enhance the technical capacity in the area of chemicals management. Similarly, the lack of necessary infrastructure for both collection and disposal of chemical waste is a major hurdle, which is compounded by the current methods of waste management.

Awareness remains a key area that requires attention. To this regard, there is a need to enhance awareness and understanding amongst policy makers and key stakeholders on the need for sound management of chemicals. In addition to this, various stakeholders, including the private sector and non-governmental and community based organizations need to be engaged to ensure the sound management of chemicals in the Maldives.

## INTRODUCTION

The production and consumption of chemicals have increased vastly over the past years making it one of the most globalized sectors in the world economy. Use of chemicals play an essential role in maintaining the quality of life; on the other hand chemicals pose adverse impacts on human health and environment. For this reason sound management of chemicals throughout their life cycle has become a popular topic in various national, international and multiple international forums, such as Agenda 21, the World Summit on Sustainable Development and in the outcome document of the Third International Conference on Small Island Developing States .

The Strategic Approach to International Chemical Management (SAICM) is a policy framework stemming from the '2020 goal' adopted by the World Summit on Sustainable Development. The overall objective of SAICM is to achieve the sound management of chemicals throughout their life cycle so that, by 2020, chemicals are produced and used in ways that minimize significant adverse impacts on human health and the environment.

Maldives places a great importance on the sound management of chemicals and its relation to the environment and human wellbeing. The Maldives is party to various chemicals-related conventions and agreements such as the Montreal Protocol on Substances that Deplete the Ozone Layer, Basel Convention on the Control of Trans boundary Movements of Hazardous Wastes and their Disposal, Stockholm Convention on Persistent Organic Pollutants, the Rotterdam Convention on the Prior Informed Consent Procedure, and the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (CWC). Maldives is also a member of, inter alia, the Intergovernmental Forum on Chemical Safety (IFCS) and the Strategic Approach

to International Chemicals Management (SAICM).

While there is currently no production of chemicals in Maldives, during the last decade, the import of chemicals has increased significantly. The main pattern of usage of chemicals in Maldives is in the form of consumption of petroleum products in the energy and transport sector, the agricultural industry, construction, boat building, health sector, and a variety of other uses in the tourism industry. With the diversification of the economy, chemicals management issues are likely to become increasingly important in the future.

From a legislative standpoint, the Environment Protection and Preservation Act (Law no. 4/93) of the Maldives has special provisions for the environmentally sound management of hazardous waste, chemicals, and oil. However, the implementation and monitoring of these particular provisions has been a challenge due to the lack of a national chemicals database, lack of coordination mechanisms or even a general baseline indicating the usage and disposal of these chemicals.

Recognizing the need for the sound management of chemicals, countries all over the world have embarked on the preparation of National Chemicals Management Profiles with the involvement of a wide range of national stakeholders, following the recommendations issued by the IFCS and based on the IFCS endorsed United Nations Institute for Training and Research (UNITAR)/ Inter – Organization Programme for the Sound Management of Chemicals (IOMC) National Profile Guidance Document published in 1996.

## OBJECTIVES AND ANTICIPATED BENEFITS OF PREPARING THE NATIONAL PROFILE

The National Chemical Profile of Maldives has been prepared to assess the chemical management situation in the country, to identify the gaps and prioritize issues regarding all aspects of chemicals management throughout its lifecycle. The Maldives National Chemical Profile has been developed with the aim of increasing transparency around chemicals management in the country, and aid the public and the government in making informed decisions regarding chemicals.

The Maldives National Chemicals Profile has been prepared by the Ministry of Environment and Energy reviewed by the National Chemicals Management Committee (NCMC) .

## NATIONAL CHEMICALS MANAGEMENT COMMITTEE

Chemicals management encompasses a broad range of issues, each of which are addressed by a particular or a number of different ministries, agencies as well as parties outside of government. Therefore, the NCMC is

an inter-ministerial forum established to foster a comprehensive approach to the management of chemicals that addresses all stages of the chemical life cycle, where various actors can exchange information, coordinate activities that are complementary or inter-related, and, in certain instances, make joint decisions or, in the longer-term, develop national policy.

The NCMC provides guidance, advice, and support the lead agencies and national project coordinators in the implementation of the chemicals related projects in the country, such as those under the Stockholm Convention on Persistent Organic Pollutants and SAICM. Major decisions in relation to the projects are finalized by the approval of the NCMC. The ToR for the committee is provided in Annex 6.t

**Table 1: Members of the National Chemical Management Committee**

NAME	ORGANIZATION
Ajwad Musthafa Permanent Secretary	Ministry of Environment and Energy
Aminath Suzy Head of Drug and Chemical Laboratory	Maldives Police Service
Mohamed Nadheem Ibrahim Captain	Maldives National Defence Force
Abdulla Waheed Chief Superintendent	Maldives Customs Service
Dr.Aishath Shaira Executive Coordinator	Ministry of Environment and Energy
Dr.Shazla Mohamed Dean	Maldives National University
Abdul Nasir Mohamed Deputy Director General	Transport Authority
Miruzza Mohamed Director	Ministry of Environment and Energy
Ziduna Mohamed Technologist	Ministry of Defence and National Security
Aminath Shaufa Public Health Program Coordinator	Health Protection Agency
Aishath Yamaanee Hassan Microbiologist	Environmental Protection Agency
Abdulla Nashith Director	Fenaka Corporation Ltd
Hamid Ibrahim Project Coordinator	Ministry of Fisheries and Agriculture
Zeenath Rasheed Senior Public Health Program Officer	Maldives Food and Drug Authority
Ahmed Mizuhath Naeem Assistant Director	Male' City Council
Fazeela Ahmed Shaheem Legal Officer	Ministry of Environment and Energy
Mauman Abdul Rasheed Project Officer	Ministry of Environment and Energy





PHOTO CREDITS HANI AMIR

## NATIONAL BACKGROUND INFORMATION

*The purpose of this chapter is to provide a general background on the characteristics of the country, including its geography, climate, vegetation and vulnerability to natural hazards, and assess its relation to chemical management in the country. This chapter also highlights the demographic, political and economic setting of the country.*

### 1.1 GEOGRAPHIC CONTEXT

#### 1.1.1 LOCATION AND TERRAIN

The Republic of Maldives is a small, low-lying archipelago located in the Indian Ocean, as indicated in Figure 1, where its closest neighbors are India, 595 km to the north and Sri Lanka, 670 km to the northeast. Maldives covers an area of over 90,000 km<sup>2</sup> in the Indian Ocean, of which 99% is ocean. Its geographic coordinates are 7°6'35"North, 0°42'24"South and 72°33'19" East, and 73°14'36" West.

Geographically, Maldives is made up of flat and low lying coral islands, barely reaching 1.5 meters above the sea level. The maximum height above sea level to be recorded is 2.4 meters. The elevation, size, shape and vegetation of these islands vary enormously from sand banks to elongated strip islands while the size of the islands range from 0.5km<sup>2</sup> to 5km<sup>2</sup>.

#### 1.1.2 CLIMATE

Maldives experiences tropical monsoonal climate due to its proximity to the equator. The Southwest monsoon (rainy season) extends from May to

November, while Northeast monsoon (dry season) begins from January and continues up to March. The average annual temperature in Maldives is 28 °C and relative humidity ranges from 71% to 84%. The mean daily maximum temperature is 30.4 °C and the mean daily minimum temperature is 25.7 °C. The southern region of the country is distinguished from the northern region for the high quantity of precipitation, with an annual average of 2,277 mm for south and 1,786 mm for the north. Lowest rainfall was registered at Hanimaadhoo weather station (1,346 mm), while the highest rainfall was observed at Gan International Airport weather station (3,185 mm).

#### 1.1.3 NATURAL HAZARDS

The geographic position of the country determines the inclusion of the country within the range of tropical cyclones, earthquakes and thunderstorms. While the probability of such freak storms is more frequent in the north, incidents of storms surges, flooding and heavy rainfall is more prominent in the southern and western islands of Maldives. In addition to this, underlying geological features such as low topography and lack of land mass increases the vulnerability of the islands to other natural hazards such as coastal erosion, storm surges and climate related hazards.

### 1.2 PHYSICAL AND DEMOGRAPHIC CONTEXT

This section highlights a few vital statistics of the Maldives, to provide a clearer understanding of the current situation.

#### SIZE OF COUNTRY

300 km<sup>2</sup> and a total coastline of 644 km

#### FORM OF GOVERNMENT

Republic

#### OFFICIAL LANGUAGES

Dhivehi. English is widely spoken and understood.

#### RELIGION

Sunni Muslim

#### POPULATION

341,256 in September 2014 consisting of 173,172 males and 168,084 females

#### NUMBER OF LIVE BIRTHS

(INCLUDING INFANTS BORN

ABROAD)

7153 in 2013

#### LIFE EXPECTANCY AT BIRTH

75.15 years (2014) with females having a slightly longer life expectancy at 77.55 years and males at 72.86 years

#### INFANT MORTALITY

6 infants per 1000 live births in 201

#### UNEMPLOYMENT RATE

11.7% in 2010, calculated from the population 15 years and above

### 1.3 POLITICAL STRUCTURE

The political system of Maldives has evolved over the years, influenced by its geographic dispersal, Islamic religion and traditions. The head of state and government is the president, who is assisted by a vice-president and a cabinet. Executive power is vested in the president, who is elected for a 5-year term and appoints members to the cabinet.

In June 2005, political parties were registered for the first time in Maldives, and several parties have come into existence since then.

People's Majlis (the parliament) is the body entrusted to make legislation and currently consists of 85 members. The Parliament of Maldives is a unicameral

body and extensive powers are granted to the Majlis in the nation's presidential system of governance. The legal system is based on Islamic law along with the English common law, mainly in commercial matters.

Excluding the capital Male', the 20 administrative divisions in the Maldives are; Haa Alif Atoll, Haa Dhaalu Atoll, Shaviyani Atoll, Noonu Atoll, Raa Atoll, Baa Atoll, Lhaviyani Atoll, Kaafu Atoll, Alif Alif Atoll, Alif Dhaalu Atoll, Vaavu Atoll, Faafu Atoll, Dhaalu Atoll, Meemu Atoll, Thaa Atoll, Laamu Atoll, Gaafu Alif Atoll, Gaafu Dhaalu Atoll, Gnaviyani Atoll, and Addu Atoll.

**1.4 ECONOMIC SECTORS**

The Maldivian economy has grown relatively quickly with the advent of the tourism industry in the 1970s. The Maldives has surpassed all South Asian countries to achieve the highest income per capita. However, it is important to note that while the GDP per capita is high, the country's economy is still very small.



Figure 1: Location of the Maldives

Figure 2 demonstrates that by the year 2012, the major sectors contributing to the Maldivian GDP were tourism (the highest at 27%), government administration, communication, transport, real estate and construction. Industries such as fisheries, agriculture, health, manufacturing and education contributed relatively less than that by the tourism sector. By the end of 2013 the Maldives GDP was USD 2.3 billion and its annual growth rate was 3.7%.

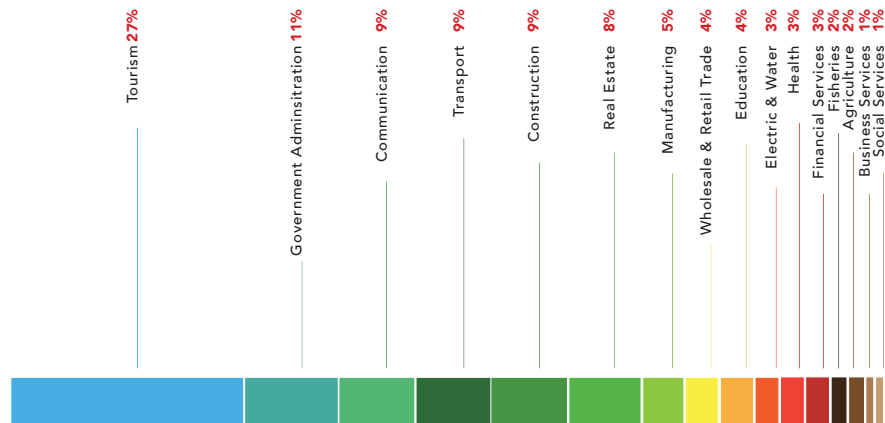


Figure 2: Percentage share of GDP by sectors in 2012  
Source: Maldives Economic Diversification Strategy Report, Ministry of Economic Development, 2013

THE TABLES 2 AND 3 PROVIDE AN OVERVIEW OF CERTAIN ECONOMIC SECTORS IN MALDIVES, THE GDP, ITS GROWTH RATE, AND PERCENTAGE SHARES OF GDP BY KIND OF ACTIVITY; AND THE EMPLOYMENT FIGURES IN THE COUNTRY ACCORDING TO INDUSTRY.



**Table 2: Overview of the economy by sector**

ECONOMIC SECTOR	TOTAL EMPLOYMENT %	TOTAL SHARE OF ESTABLISHMENT %	MAJOR PRODUCTS IN EACH SECTOR	CONTRIBUTION TO GDP (%)	OUTPUT VALUE (USD '000)	GROWTH RATE (%) 1
<b>Manufacturing/ Industry Sector 2</b>	3.3	9.2	n/a	1.0	6,480/0	n/a
<b>Trade</b>	20.5	52.0	n/a	32.5	143,294.0	n/a
<b>Agriculture and Fishing Sector</b>	2.2	4.7	n/a	0.4	n/a	n/a
<b>Total</b>	26.0	65.8	-	33.9	149,774.0	-

Source: Department of National Planning 2013

**Table 3: Employment according to industry (2011-2012)**

ECONOMIC SECTOR	MICRO FARMS/ FACILITIES 1 (%)	SMALL FARMS/ FACILITIES 2 (%)	MEDIUM FARMS/ FACILITIES3 (%)	BIG FARMS/ FACILITIES 4 (%)
<b>Manufacturing/ Industry Sector 2</b>	8.2	0.8	0.1	0.0
<b>Trade</b>	46.3	5.1	0.4	0.1
<b>Agriculture and Fishing Sector</b>	3.6	1.0	0.0	0.0
<b>Total</b>	58.1	6.9	0.6	0.1

Source: Economic Survey, Department of National Planning 2013

Agricultural production in the country is limited by the poor soil conditions and availability of land, which restricts farming on a larger scale. For every 1,000 people, there is only 0.3 square

kilometers of land used for agricultural purposes. Commonly grown crops for domestic use include coconuts, betel, papaya, chili, cucumbers and watermelon among others.

TABLE 4 PROVIDES A BREAKDOWN OF MAJOR AGRICULTURAL PRODUCTS TRADED IN MALE' MARKETS BY ATOLLS IN 2013.



**Table 4: Breakdown of agricultural products traded in the Male' market by atolls in 2013**

REGION	MAJOR TYPES OF CROPS)	TOTAL AMOUNT (KILOGRAMS)	TOTAL NUMBER OF EMPLOYEES	SIZE OF PRODUCTIVE AREAS (HA)
<b>Republic Total</b>	<b>Watermelon, Coconut (young), Papayas, Pumpkin, Cucumber, Banana, Brinjal, Coconut, Wax gourd, Bottle gourd, Butternut, Chinese Cabbage, Snake Gourd, Yam, Luffa, Chillie</b>	1,324,437	9,940 (total in 2007) 9,603 (locals in 2007) 336 (foreigners in 2007) 543 (foreigners in 2011)	2,670 (total in 2005) 1,770 (inhabited islands) 990 (uninhabited)
<b>HA</b>	<b>Coconut (young)</b>	41,496	N/A	N/A
<b>HDh</b>	<b>Watermelon</b>	8,000		
<b>Sh</b>	<b>Coconut (young)</b>	33,900		

**Table 4: Breakdown of agricultural products traded in the Male' market by atolls in 2013**

REGION	MAJOR TYPES OF CROPS	TOTAL AMOUNT (KILOGRAMS)	TOTAL NUMBER OF EMPLOYEES	SIZE OF PRODUCTIVE AREAS (HA)
N	Coconut (young)	6,300	N/A	N/A
K	Coconut (young)	45,900		
AA	Papayas	257,850		
Adh	Watermelon	1,000		
M	Coconut (young)	3,000		
Th	Coconut (young)	32,775		
L	Watermelon	191,500		
GDh	Coconut (young)	6,000		
Gn	Coconut (young)	34,500		

Source: Economic Research and Statistics Services, Ministry of Fisheries and Agriculture.

### 1.5 POLLUTION EMISSIONS BY MAJOR ECONOMIC SECTORS

Maldives is a Party to many chemicals related conventions and agreements. However, this has not been fully translated into substantive actions due to various constraints, the primary of which are the lack of financial and institutional capacity and lack of awareness and absence of comprehensive chemical related legislation. Despite this, Maldives is required to enact effective national legislation to implement the obligations under these conventions.

Maldives ratified the Stockholm Convention on 17 Oct 2006. The convention applies to twelve POPs chemicals which are known as the dirty dozen. The country status on POPs releases is outlined below:

*There are currently no mechanisms for monitoring POPs;*

*POPs monitoring policies, standards and guidelines do not exist and need to be developed in Maldives;*

*There are no POPs pesticides used in the country. It has been listed under banned pesticides by the MOFA. However, since POPs last for a long*

*time in the environment, they may still be present in the environment affecting the food grown;*

*There are no imports or exports of Polychlorinated biphenyl (PCB) containing equipment to the country;*

*There are 18 potentially PCB containing equipment in the Maldives, including 15 electrical transformers, 3 oil filled circuit breakers and 3 oil filled capacitors. The total volume of potentially PCB contaminated oil is 6100 liters;*

*There are no PCB management plans or guidelines for disposal of PCB containing equipment in Maldives;*

*No detailed inventories on Electrical and Electronic Equipment (EEE) and Waste Electrical and Electronic Equipment (WEEE) have been conducted;*

*There is no monitoring mechanism set in Maldives to determine the chemical content of the EEEs imported;*

*POP-Polybrominated diphenyl ethers (PBDEs) and POP-PBDE containing articles have never been produced in the country;*

*Perfluorooctane sulfonic acid (PFOS) related substances in textiles and furniture have been imported to*

*Maldives in the past and possibly at present, and is therefore in use, in stocks, and have in all probability, partly entered the end of life stage;*

*Synthetic carpets produced and imported before 2003 has the highest risk to contain PFOS;*

*The current import of synthetic carpets are considered irrelevant for PFOS;*

*The largest amount of PFOS and related substances currently used in the country are known to be for firefighting foams (AFFF, FFFP) and in synthetic carpets;*

*There is no specific legislation in Maldives in relation to the import of use of firefighting foams for oils tanks;*

*All islands with oil tanks larger than 3000 liters in capacity mostly have AFFF foams;*

*All current landfills and former sites where Aqueous Film Forming Foam (AFFF) and Film Forming Fluoroprotein (FFFP) foam had been used in the past can be considered as sites potentially contaminated with PFOS.*

TABLE 5 DISPLAYS THE MAJOR POLLUTION EMISSIONS (BY CHEMICAL TYPES) RELEASED BY THE FOLLOWING ECONOMIC SECTORS GROUPED ACCORDING TO THE INTERNATIONAL STANDARD INDUSTRIAL CLASSIFICATION OF ALL ECONOMIC ACTIVITIES (ISIC).



**Table 5: Releases by Type and Media for Major Economic Sectors**

ISIC REV. 4 CODE	ECONOMIC SECTORS AND RELATED ACTIVITIES	MAJOR POLLUTION EMISSIONS BY CHEMICAL TYPE	MEDIA TO WHICH EMISSIONS ARE RELEASED; AIR, WATER, SOIL	WASTES EMITTED AS: SOLIDS, LIQUIDS, OR GASES BY VOLUME OR WEIGHT IF KNOWN
<b>Agriculture, Forestry and Fishing</b>				
A 01	Crop and animal production, hunting and related service activities	Inorganics, Pesticides	Water, Soil	n/a
A 02	Forestry and logging	n/a	n/a	n/a
A03	Fishing and aquaculture	n/a	n/a	n/a
<b>Sector of Mining and Extraction</b>				
B 04-09	Coal/Oil/Natural Gas/Minerals/Metals	n/a	n/a	n/a
<b>Sector of Manufacturing/Industry</b>				
C 10	Food products	n/a	Water	n/a
C 11	Beverages	n/a	Water	n/a
C 12	Tobacco products	n/a	n/a	n/a
C 13-15	Textiles/wearing apparel/leather	Organic dyes, particulates	Water, Air	n/a
C 16	Wood and of products of wood and cork	Particulates	Air	n/a
C 17	Paper and paper products	Particulates, Organics	Water, Air	n/a
C 18	Printing and record media	Inorganics & Organics	Water	n/a
C 19-22	Coke, refined petroleum products, chemicals, pharmaceutical products, plastic products	n/a	n/a	n/a
C 23	Non-metallic mineral products	n/a	n/a	n/a
C 24-25	Basic metals and fabricated metal products	n/a	n/a	n/a
C 26	Computer, electronic, and optical products	n/a	n/a	n/a
C 27	Electrical equipment	n/a	n/a	n/a
C 28-30	Machinery and equipment, motor vehicles, other transport equipment	n/a	n/a	n/a
C 30-33	Others	n/a	n/a	n/a
<b>Sector of Services</b>				
D	Electricity, gas, steam and air conditioning supply	Organic gases	Air	n/a
E	Water supply, sewerage, waste management	Polluted effluent	Water	n/a
F	Construction	Particulates, Noise	Air	n/a

Table 5: Releases by Type and Media for Major Economic Sectors

ISIC REV. 4 CODE	ECONOMIC SECTORS AND RELATED ACTIVITIES	MAJOR POLLUTION EMISSIONS BY CHEMICAL TYPE	MEDIA TO WHICH EMISSIONS ARE RELEASED; AIR, WATER, SOIL	WASTES EMITTED AS: SOLIDS, LIQUIDS, OR GASES BY VOLUME OR WEIGHT IF KNOWN
G	Wholesale and retail trade, repair of vehicles and motorcycles	Waste lubricants	Soil, Water	n/a
H	Transportation and storage	n/a	n/a	n/a
I	Accommodation and food activities	Waste water	Water	n/a
S	Other service activities (dry cleaning)	Solvents	Water	n/a

Economic sectors that generally release most chemical pollutants are the transportation sector, electricity and water generation, the manufacturing industry, and commercial and residential industries.

The chemical pollution emissions from the agricultural sector in the country are currently unmonitored, but it is generally known that agrochemicals have the potential to pollute the environment through land, water or air. For instance, fertilizers used in the agricultural industry are known to release excess levels of nitrogen and phosphorous into the water and disturb

aquatic habitats; and misapplication of fertilizers, herbicides, and pesticides can result in an aerial drift of these chemicals, causing harm. Agricultural soils can also release greenhouse gas (GHG) emissions into the environment.

#### 1.6 ASSESSMENT

Maldives, being a Small Island Developing State (SIDS), with its limited land area, small population, remoteness from major markets and low resource endowment, relies heavily on imports for consumer products, capital input, foreign labor and external financial flow for its development. The Maldivian

economy depends primarily on tourism and marine resources. The industrial base is very small and narrow with most of the enterprises being located in the capital city, Male'.

Hence, there are no chemical management issues with regards to their production but there are various issues that need to be addressed in terms of imports, use and disposal of chemicals in Maldives.

THE FOLLOWING TABLE 6 DISPLAYS RELEASES OF GHG EMISSIONS INTO THE ENVIRONMENT BY THE RESPECTIVE ECONOMIC SECTORS.



Table 6: Breakdown of GHG emissions by sector in 2009

ECONOMIC SECTOR	PERCENTAGE OF GREENHOUSE GAS EMISSIONS
Tourism (resorts and transport)	36%
Fishing (industry and transport)	11%
Waste management	15%
Transport for inhabitants (excl. tourism and fishing)	9%
Electricity (residential, commercial and institutional)	19%
Others	8%

Source: The Maldives Carbon Audit, 2009

## CORE AREAS OF MALDIVIAN CHEMICAL IMPORT, EXPORT, USE, STORAGE, TRANSPORT AND DISPOSAL

*This chapter provides an overview of chemicals in the country throughout its lifecycle.*

### 2.1 CHEMICAL IMPORTS

Chemicals are not manufactured in the Maldives and thus there is no exportation and no bulk import or export of raw materials required for chemical manufacture. The country depends on imports for all its chemical requirements, such as petroleum products to meet its energy demands. In the absence of specific databases, information on chemical usage in the country is based on data on chemical imports. The type of data collected includes: type of goods (based on the Harmonized System classification); value (CIF); country of consignment for imports; country of origin; mode of transport and etc. The wide ranges

of chemical imports to the country are subdivided under the Harmonized System into a variety of groups as in Annex 1.

Table 7 provides the value of imported chemicals by the following categories.

In 2014 the gross value of the total chemical imports into the country exceeded MVR 2 billion. Petroleum products account for more than one third of the gross value of chemical imports, followed by essential oils/resinoids (e.g. perfumery and cosmetics).

Table 7 Chemical imports in MVR from 2010-2014

ECONOMIC SECTOR	CHEMICAL TYPE	IMPORT IN (MVR MILLIONS)					
		2010	2011	2012	2013	2014	
38	Pesticides	Insecticides	10.95	12.44	17.36	16.26	23.82
		Fungicides	0.54	0.53	0.36	0.21	0.37
		Herbicides Anti-sprouting Products, Plant Growth Regulators	0.04	0.07	0.12	0.21	0.13
		Disinfectants	4.30	3.92	4.72	5.42	11.88
		Rodenticides	0.36	0.57	1.56	0.54	0.49
31	Fertilizers	Organic fertilizers	8.30	11.49	12.25	12.10	13.56
		Inorganic fertilizers	4.04	6.48	7.99	7.45	7.52
27	Petroleum and petroleum products	3092.65	4940.40	5820.80	5368.27	6350.15	
33	Consumer chemicals	Essential Oils	223.87	285.32	398.47	388.85	471.77
34		Soaps, Surfactants and household chemicals	116.40	139.46	187.65	220.61	248.39
30	Pharmaceuticals	125.31	146.49	179.76	185.67	259.48	
29	Industrial chemicals	Organic chemicals	4.65	7.18	8.83	7.59	13.76
28		Inorganic chemicals	9.26	17.35	14.53	15.92	16.30
68		Asbestos	12.37	12.30	0.00	19.09	12.97
32		Tanning or Dying	130.71	180.28	204.18	177.43	223.28
37		Photographic or cinematographic	4.32	4.46	4.77	4.45	6.16
35		Albuminoidal substances	30.90	37.30	45.48	38.54	40.02



Table 7 Chemical imports in MVR from 2010-2014

ECONOMIC SECTOR	CHEMICAL TYPE		IMPORT IN (MVR MILLIONS)				
			2010	2011	2012	2013	2014
38	other chemicals (unknown/mixed use)	miscellaneous	51.39	74.40	79.78	90.78	134.74
		unspecified	5.68	14.08	17.46	13.21	21.22
	Explosives	1.68	3.16	4.35	4.32	6.2	
	<b>Total</b>		3837.72	5897.68	7,010.42	6,576.92	7,862.21

TABLE 8 LISTS THE COUNTRIES WHICH IMPORTED CHEMICALS INTO MALDIVES BY VALUE AND QUANTITY OF IMPORTS.

Table 8: List of countries, which imported chemicals to the Maldives in 2014

COUNTRY OF CONSIGNMENT	VALUE (MVR MILLION)	QUANTITY	
		M <sup>3</sup>	METRIC TONNES
Australia	18.1	175.66	157.86
Austria	1.1	1.82	0.04
Bahamas	1.0	5.88	2.06
Bahrain*	837.9	–	62,077.88
Bangladesh	0.8	0.84	1.22
Belgium	1.8	20.55	12.20
Brunei Darussalam	0.001	–	
Bulgaria	0.64	10.41	
Cambodia	0.018	–	
Canada	2.1	76.41	6.53
China	54.0	1,360.78	2,473.56
Cyprus	0.38	12.34	2.16
Czech Republic	1.6	44.31	5.78
Denmark	2.8	5.67	5.91
Egypt	16.9	–	27.64
Finland	0.0004	–	0.02
France	22.0	15.29	3.92
Germany	19.6	361.37	40.15
Greece	0.31	2.99	0.45
Hong Kong	9.6	55.29	191.70
Hungary	0.033	6.71	0.40
India	289.2	1,782.68	9,623.16
Indonesia	101.3	2,161.00	947.35
Iran	0.54	1.14	0.41

Table 8: List of countries, which imported chemicals to the Maldives in 2014

COUNTRY OF CONSIGNMENT	VALUE (MVR MILLION)	QUANTITY	
		M <sup>3</sup>	METRIC TONNES
Ireland	2.9	1.94	1.77
Italy	10.0	36.99	131.88
Japan	2.2	3.33	2.88
Lebanon	0.0003		
Malaysia*	634.2	1,107.68	29,169.15
Malta	0.0362		0.22
Mauritius	4.1	18.33	3.69
Morocco	0.003		
Netherlands	30.4	51.21	48.86
New Zealand	12.3	42.14	44.43
Norway	1.2	2.40	12.33
Oman	4.1	107.16	9.00
Pakistan	9.3	10.69	40.04
Philippines	1.3	14.43	5.76
Poland	0.2	0.44	0.18
Portugal	0.004	0.00	
Qatar	0.276	0.46	65.85
Russian Federation	0.005		0.04
Saudi Arabia	0.391	12.25	0.00
Seychelles	0.142	0.24	0.02
Singapore*	1435.3	3,838.35	79,630.72
Slovenia	0.12	0.36	5.41
South Africa	5.4	88.85	22.45
South Korea	4.0	186.68	3.66
Spain	2.5	14.08	7.85
Sri Lanka*	350.5	2,615.06	13,439.87
Sweden	1.0	6.49	0.37
Switzerland	17.7	8.24	5.00
Taiwan	0.2	7.22	0.05
Thailand	80.1	834.66	3,079.50
Turkey	16.2	133.52	107.38
UAE*	3775.8	2,289.93	256,430.19
UK	32.0	205.75	49.94
USA	34.4	368.17	265.49
Uganda	0.00002		
Vietnam	1.0	30.90	2.49

Source: Maldives Customs Service

\* Import petrol and petroleum products in bulk

### 2.1.1 INDUSTRIAL CHEMICALS

Industrial chemicals imported to the country are further classified into subcategories (namely: organic and inorganic chemicals, asbestos, tannings, dyes and paints, photographic or cinematographic substances and albuminoidal substances) as per HSN chapters. In 2014, a total of 5,087 tonnes of industrial chemicals were imported to the country.

Those substances that come under the HSN chapter 32 (tannings, dyes, paints etc.) accounted for the largest percentage of industrial chemicals from 2010-2014 by value. In contrast, substances that come under photographic or cinematographic substances held the lowest share of industrial chemicals from 2010-2014 by value.

Maldives receives industrial chemicals such as tanning or dyeing extracts and etc. primarily from UAE and Malaysia; albuminoidal substances from Malaysia, UAE and Singapore; photographic or cinematographic chemicals from Singapore, Sri Lanka, and UAE; organic chemicals from Singapore, China, Sri Lanka; inorganic substances from Sri Lanka, USA, China; and asbestos from India, Singapore and China.

#### A) INORGANIC AND ORGANIC CHEMICALS

Figure 3 below displays the most imported types of chemicals classed as either inorganic or organic (as per HSN chapters).

In 2014, monosodium glutamate was the most imported chemical classed under this category, and the primary country of consignment was China. It is used in the food industry. In the same year, chlorine was the second most imported and its primary country of consignment was USA. Chlorine is mainly used as a water disinfectant.

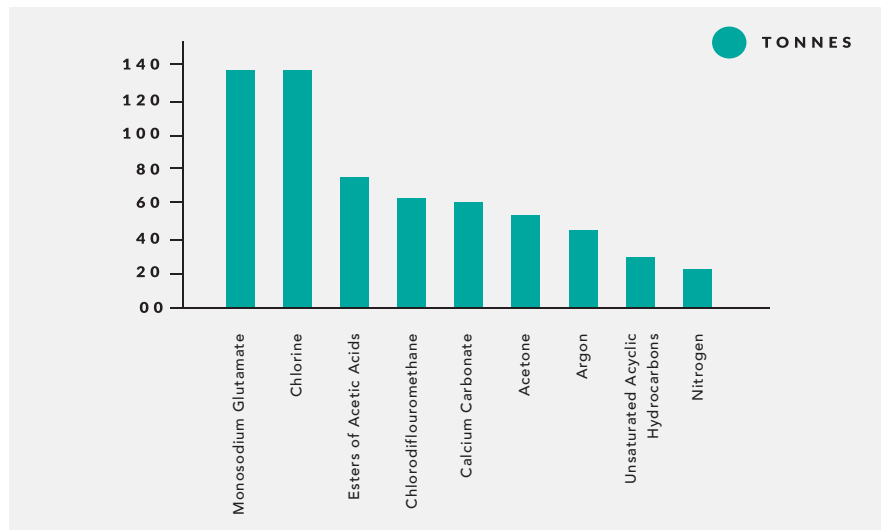


Figure 3: Major imports of organic and inorganic chemicals to Maldives in 2014

#### B) TOURISM SECTOR

The Figure 4 below displays amounts of organic and inorganic chemicals imported for use in the tourism sector between 2010 and 2014.

Chlorine powder was the most imported chemical in 2014 by weight for the tourism sector. This does not account for the chemicals imported outside the tourism code, which could be still sold and supplied for use within the tourism sector. The tourism sector also imports detergent chemicals in bulk quantities.

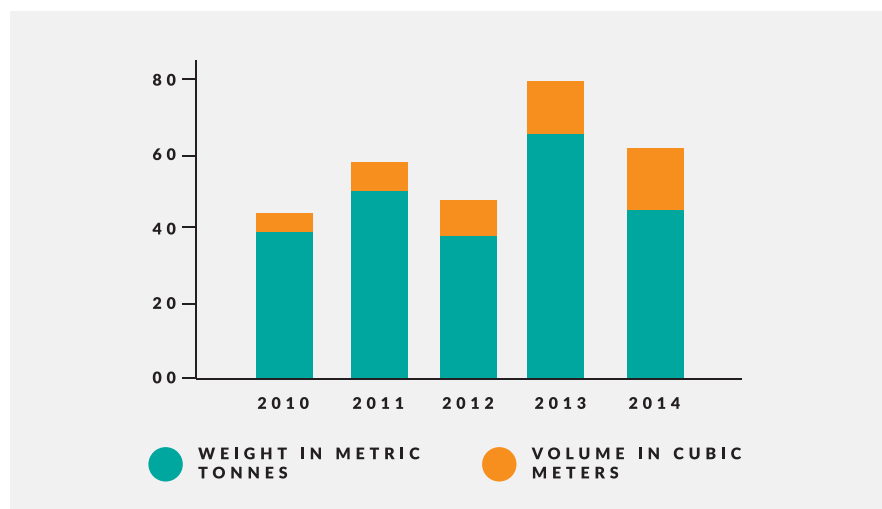


Figure 4: Total imports of organic and inorganic chemicals into the tourism sector between 2010 and 2014

### 2.1.2 FERTILIZERS

The Maldivian agricultural sector receives most chemical fertilizers from Sri Lanka and this accounts for approximately 72.48% of the total chemical fertilizer imports.

The main products of import are fertilizers containing Nitrogen, Phosphorous and Potassium (N, P, K) compounds.

The country also imports large amounts of 'nitrogen-based straight' and 'phosphatic straight' fertilizer such as ammonium sulphate, urea, calcium nitrate, super phosphates, potash and potassium chloride.

Agricultural land, as a percentage of the total land area in Maldives was last measured at 26.67% in 2009 according to the World Bank. Agricultural land refers to the share of land that is arable, under permanent crops and under permanent pastures. Arable land is defined by FAO as land under temporary crops, temporary meadows for mowing or pasture, land under market/kitchen gardens and lands temporarily fallow. Fertilizer use is heaviest in agricultural islands. The amounts of fertilizers consumed in each island are, however, not recorded.

Figure 5 breaks down the agricultural land use in Maldives in 2011.

### 2.1.3 PESTICIDES

Pesticide imports (for both consumer use and agricultural use) to Maldives from 2010 to 2014 were primarily from India, Singapore, Indonesia and Sri Lanka. Insecticides were the main type of pesticides imported to Maldives in the past five years.

Figure 6 displays the total amounts of pesticides imported from 2010 to 2014.

TABLE 9 DISPLAYS THE AMOUNTS OF FERTILIZERS BY TYPE AND QUANTITY, IMPORTED IN 2013.

**Table 9: Total amount of chemical fertilizer imported by the agricultural sector in 2013**

FERTILIZERS BY TYPE		QUANTITY	
		M <sup>3</sup>	METRIC TONNES
Nitrogen fertilizers	Ammonium Sulphate	-	98.85
	Calcium nitrate	1.6	11.97
	Urea	-	112.20
Phosphatic fertilizers	Potassium chloride	-	106
	Potassium oxide	-	5.03
	Superphosphates	-	92.7
	Potash	-	12.416
<b>N, P, K+micro-elements</b>		4.37	1,056.19
<b>Ca, Mg, Na, S fertilizers</b>		0.19	149.59
<b>Total chemical fertilizers</b>		6.17	1,644.92

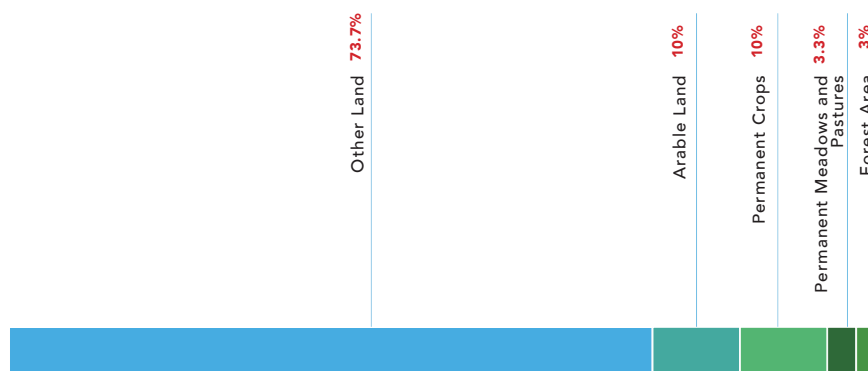


Figure 5: Percentage of land use for agricultural purposes in Maldives in 2011.

Source: Food and Agriculture Organization of the United Nations, Statistics Division, 2015.

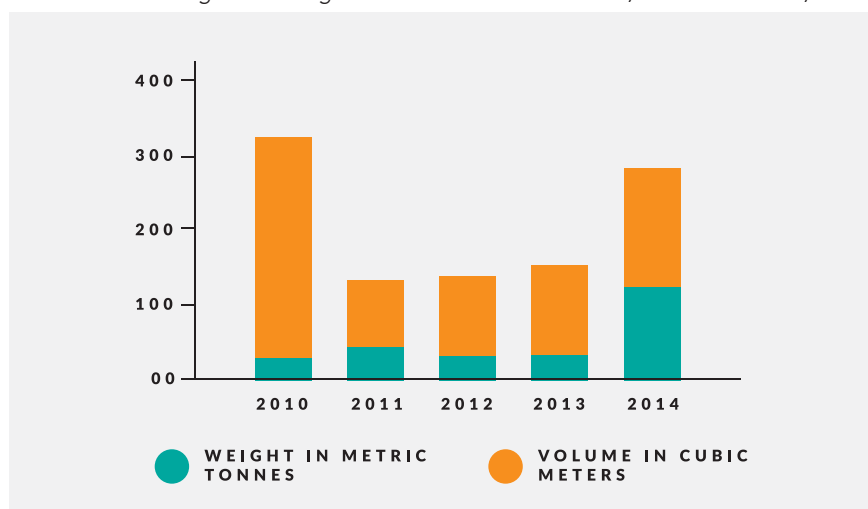


Figure 6 : Total amount of pesticides imported from 2010-2014 by volume and weight

Source: Maldives Customs Service

Table 10 below details the pesticides imported in 2013 for agricultural purposes. A total of 48 tonnes and 81m<sup>3</sup> of pesticides were imported in 2013. There are no controls on placing hazardous pesticides in the local market except for the import restrictions on banned pesticides. In addition, there are no specific data available for consumer use pesticides.

**Table 10: Pesticide imports by the agriculture sector in 2013**

TYPE OF PESTICIDE	MOST COMMONLY IMPORTED PESTICIDE IN 2013			COUNTRY OF IMPORT*	
	M <sup>3</sup>	METRIC TONNES	NAME		TOXICITY CLASS
Acaricides	-	2.15	Hexythiazox	V	Sri Lanka
			Sulphur	V	
Fungicides	1.85	8.52	Cuprous oxide	II	Sri Lanka
			Carbendazim	III	
			Mancozeb	V	
			Chlorothalonil	V	
Herbicides, organic pesticides and other trace elements	0.66	0.05	Ethephon	V	India South Korea Thailand Sri Lanka
			Azadirachtin	EPA IV	
			Glyphosate	V	
Insecticide	77.86	29.83	Chlorpyrifos	II	Sri Lanka Singapore Italy Thailand
			Dinotefuran	IV	
			Temephos	V	
			Cypermethrin	II	
			Tetramethrin	V	
Molluscicide and miticides	-	2.13	Metaldehyde	III	Netherland Sri Lanka
			Sulphur		
			Ferric Phosphate	IV	
Rodenticide	-	5.3	Bromadiolone	Ia	Sri Lanka Malaysia Italy
			Brodifacoum	Ia	
			Coumatetralyl	Ib	
Plant growth regulators and stimulants	0.81	0.057	Nitrobenzene	III	Sri Lanka Thailand
			Vitamin	V	
			sodium para nitrophenolate+ sodium ortho nitrophenolate + sodium 5-nitroguaiacolate	-	

Source: Ministry of Fisheries and Agriculture

\*Country of import: Top countries that import pesticides into Maldives in large amounts. Ranked from highest to lowest for each type of pesticide

**2.1.4 PHARMACEUTICALS**

The Figure 7 below presents the amounts of pharmaceuticals imported from 2010-2014. The year 2014 saw the most amounts of pharmaceuticals imported into the country, with the majority of imports coming from Sri Lanka and India. In addition to this, India and Sri Lanka are also the chief importers of all pharmaceuticals to Maldives for the past 5 years.

**2.1.5 PETROLEUM AND PETROLEUM PRODUCTS**

Fuel such as diesel, petrol, aviation gas and kerosene are the major types of petroleum products imported to Maldives. Among these, diesel is the most frequently imported fuel in the past five years and accounts for 72% of total fuel imports. Figure 8 displays the amounts of petroleum and its products imported between the years 2010-2014.

Electricity generation is the single largest use of imported fuel, and electricity generation for the capital Male' (Male', Villingili and Hulhumale') accounts for 57.65% of the total electricity generated of all the inhabited islands. Out of 337,531 tonnes of diesel imported in 2012, 39% was used to generate electricity in inhabited islands.

The amount of petroleum products re-exported from the country in the years 2010 to 2014 is displayed in Figure 9 below.

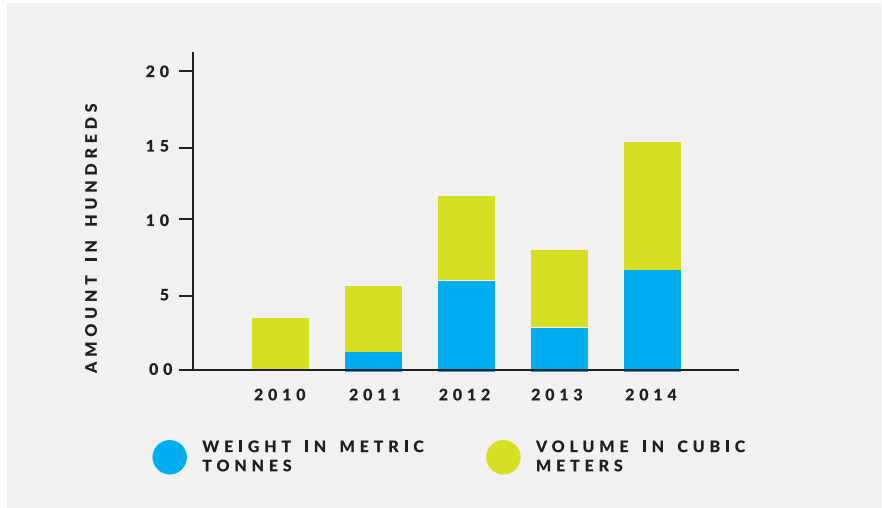


Figure 7: Amount of pharmaceuticals imported between 2010-2014 in weight and volume

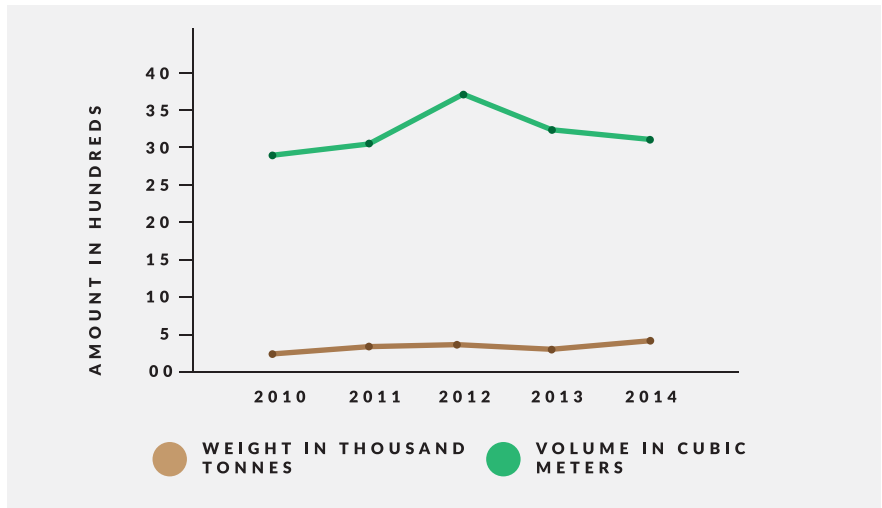


Figure 8: Import of petroleum and petroleum products into the country between 2010 and 2014

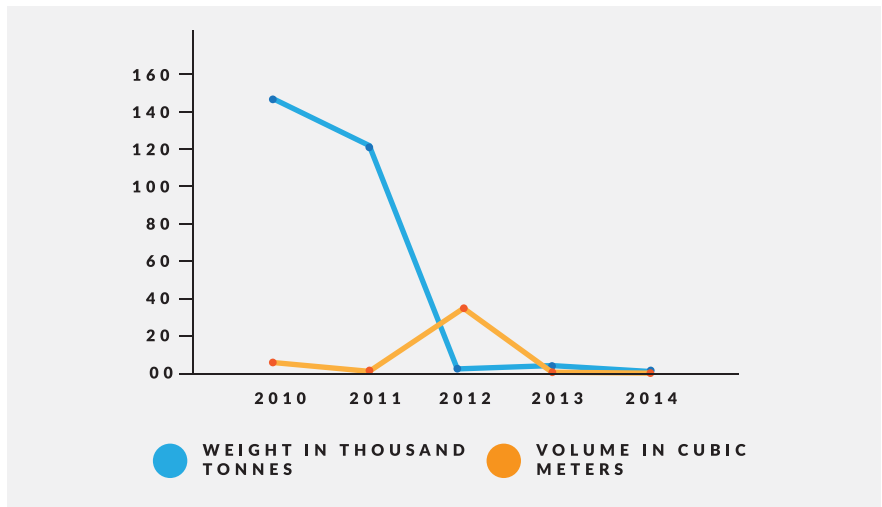


Figure 9: Amount of re-exported petroleum products by weight in cubic meters and thousands of metric tonnes

## 2.2 CHEMICAL USE AND OCCUPATIONAL HAZARDS

An overview of chemical use in major sectors and its occupational hazards are provided below.

### AGRICULTURE

Chemicals used in agriculture are primarily in the form of fertilizers and pesticides. The categories of chemicals used in Maldives range from fungicides, herbicides/algaecides, insecticides, plant growth regulators, rodenticides and weed killers.

Some farmers spray their crops with pesticide six to ten times in one season, which exceeds the manufacturer's recommendations. Intense pesticide spraying can leave chemical residues on the harvested crops. Agrochemicals can be acutely toxic if present in the food at high levels and may cause health risks with long-term exposure. It can also cause death of a number of beneficial insects and could result in the emergence of pest resistance.

Workers in the agricultural industry, for instance farmers, are particularly exposed to the toxic pesticides due to lack of awareness and proper handling of these chemicals.

### CONSTRUCTION AND BOAT BUILDING

Construction is a hazardous industry, generally associated with high rates of fatal and non-fatal accidents. Construction workers, mostly foreign laborers, are exposed to chemicals (such as solvents, paints, pesticides, glues, adhesives and etc.) at construction sites. Effects of exposure are exacerbated by the fact that the workers hardly use personal protection such as masks, goggles and gloves.

Fiber-glass boat building is also an expanding chemical based industry. Workers who labor in confined

spaces without proper protection and ventilation are exposed to chemicals such as uncured resin, hardeners, glass fiber, styrene, auxiliary agents and Fiberglass Reinforced Plastic dust. These are toxic chemicals where long term exposure can cause serious damages to the nervous system, liver and kidneys.

### TOURISM

This industry uses 4% of HCFC blends, with 2% of the total refrigerants used in Maldives. This sector also uses the most fossil fuels, and contributes most to GHG emissions in the country. According to MDNS, this sector imports the highest amounts of detergents into the country. High amount of pesticides are used on a daily basis in resorts to control mosquitoes

### FOOD INDUSTRY AND FISHERIES

The food industry is the major sector involved in using refrigerants, with reportedly 63% of HCFC use. The fisheries sector consumes 15-20% of the total refrigerants used in Maldives.

Chemicals such as pesticides are commonly used in households and resorts to control pests such as rats, cockroaches, ants and mosquitoes. Some examples include mosquito repellents, naphthalene moth balls, disinfectants, cockroach traps and antiseptic creams. Import of pesticides classed under WHO toxicity classes are banned with the exception of the following rodenticides of WHO class 1a (extremely hazardous) and 1b (highly hazardous)

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*WHO class 1a:*

*Brodifacoum, Bromadiolone, Difenacoum, Flocoumafen.*

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*WHO class 1b: Coumatetralyl*

---

However, they are available as ready-to-use baits and exist at low

concentrations and thus pose a low risk of exposure. Chemical pesticides are also used at resorts, where they practice regular spraying of chemicals to prevent mosquito outbreaks.

### HEALTH

Chemicals used for health purposes are pesticides and insecticides to control vector-borne diseases such as dengue fever and chikungunya.

ULV spraying of Malathion and Deltacide fogging is only advised during dengue outbreaks with permission from Health Protection Agency, however, continuous use of these chemicals are practiced in many of the islands.

Larvicide Bacillus thuringiensis Israeliensis (BTI) and Temphos are also used for the control and prevention of dengue.

Main chemicals used for health purposes are pharmaceuticals and laboratory re-agents. Healthcare workers can also be exposed to a variety of chemicals such as laboratory chemicals and chemicals used for cleaning and disinfection purposes and etc.

### OTHER

Workers and mechanics at several automobile repair garages throughout the country are also exposed to toxic chemicals used for degreasing, solvents and paint pigments and etc. In some islands, e.g. Male' City, where such garages are located within dense residential areas, even the public is exposed. Workers who handle waste/sewerage and workers at the port are also exposed to hazardous chemicals.

Figure 10 below displays the number of cases treated at the Indira Gandhi Memorial Hospital (IGMH) due to chemical related accidents/allergies from 2005-2011.

In this regard, the youngest patient to be treated was 1 year old in 2006 from toxic effects of an unidentified petroleum product, and the oldest patient was 76 years in 2006, from an injury or poisoning caused by corrosive acids or acid-like substances. The circumstances on how such accidents occurred were not recorded, but the above cases were registered according to the International Statistical Classification of Diseases and Related Health Problems (ICD) under 'Toxic effects of substances chiefly non-medicinal as to source' (ICD-9-CM codes 980-989).

THESE INCLUDE THE FOLLOWING,  
AMONG OTHERS:

*ICD-9-CM code 987: Toxic effects of other gases, fumes and vapors*

*ICD-9-CM code 981: Toxic effects of petroleum products*

*ICD-9-CM code 983: Toxic effects of corrosive aromatics, acids, and caustic alkalis*

### 2.3 STORAGE OF CHEMICALS AND RELATED ISSUES

MDNS inspects and approves chemical storage warehouses in the capital area of Male', Villingili, Hulhumale', Hulhule' and Thilafushi only. General warehouses are approved to store just chemicals and chemical products (in bulk or otherwise). However, some chemical products e.g. detergents and thinners are stored along with other products in the same warehouse. Hazardous/dangerous chemicals are always stored separately in individual racks.

Detailed information of these warehouses are not kept at MDNS,

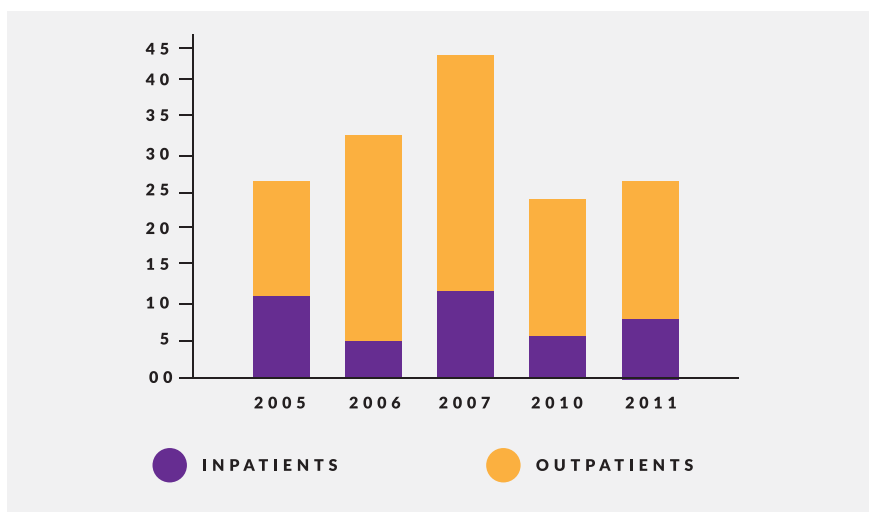


Figure 10: Number of cases treated at IGMH for chemical related accidents/allergies

since the criterion placed upon these warehouses are of general standards. The MDNS chemical warehouse approval standards can be viewed in the Annex 2. The standard is mainly for fire safety purposes.

Pharmaceutical warehouses are not inspected by MDNS unless other chemicals or chemical products are stored in the same warehouse.

The State Trading Organization (STO) Peoples' Choice Medicals holds the main stores of pharmaceuticals, with 103 STO pharmacies nationwide. The company supplies to Indira Gandhi Memorial Hospital and a number of other corporate clients, as well as regional hospitals and many other chemists and pharmacists in Male' and other islands.

STO has 3 medical warehouses, all located in K. Atoll and listed in Table 12. STO Peoples' Fuel and Lubricants also deals with the supply and sale of petroleum products. They supply Jet A1 aviation fuel to the Maldives Airports Company. Fuel Supplies Maldives pvt ltd (FSM) was established by STO and is involved in the distribution of fuels to the islands and consumers in Male'. The following Table 13 gives an overview of

the STO and FSM storage locations and capacity for petroleum products nationwide.



THE FOLLOWING TABLE 11 PRESENTS INFORMATION ON BULK CHEMICAL STORAGE AND CHEMICAL WAREHOUSING FACILITIES THAT HAVE BEEN APPROVED FOR CHEMICAL STORAGE BY MDNS IN THE COUNTRY IN 2014. THIS DOES NOT INCLUDE STORAGE FACILITIES AT INDIVIDUAL ENTERPRISES, PETROLEUM PRODUCT STORAGE WAREHOUSES OR SMALL SCALE USE OF CHEMICALS IN LABORATORIES, WHERE STORAGE FACILITIES WILL BE PART OF THE INSTALLATION.



**Table 11: Approved bulk chemical storage and chemical warehousing facilities in 2014**

TOTAL NO. OF FACILITIES	TYPE OF FACILITY	SIZE/ CAPACITY (VOLUME IN CUBIC METERS OR WEIGHT IN TONNES)	LOCATION AREA (PORT, INDUSTRIAL COMPLEX, URBAN, RURAL)	LABELING; HEALTH AND ENVIRONMENT PROTECTION MEASURES
33	Chemical storage warehouse	n/a	Urban, Industrial Complex	Fire safety protection measures.
1	Chemical storage warehouse and laboratory	n/a	Urban	Fire safety protection measures
1	Gas warehouse		Urban	Fire safety protection measures
	Petrol warehouse			
2	Laboratory	n/a	Urban	Fire safety protection measures
1	General warehouse	n/a	Urban	Fire safety protection measures
5	Shop	n/a	Urban	Fire safety protection measures

Data source: Ministry of Defence and National Security, 2014

TABLE 12. STO PEOPLES' FUEL AND LUBRICANTS ALSO DEALS WITH THE SUPPLY AND SALE OF PETROLEUM PRODUCTS.



**Table 12: State Trading Organization medical warehouses in Maldives**

LOCATION	TYPE	SQUARE FT
IGMH	Store	4578.94
Medicals Main	Go-down	8484.65
Head Office	Go-down	15499.42

TABLE 13 GIVES AN OVERVIEW OF THE STO AND FSM STORAGE LOCATIONS AND CAPACITY FOR PETROLEUM PRODUCTS NATIONWIDE.



**Table 13: STO and FSM location and capacity for petroleum products**

ISLAND NAME	COMPANY	DIESEL		PETROL		KEROSENE/ JET A-1	
		CAPACITY (LTR)	NO. OF TANK	CAPACITY (LTR)	NO. OF TANK	CAPACITY (LTR)	NO. OF TANK
K. Funadhoo	STO	20,832,333.00	6	4,640,732.00	2	825,179.00	5
G. Dh. Thinadhoo	STO	5,000.00	1	NIL	NIL	NIL	NIL
L. Kadhdhoo Airport	STO	NIL	NIL	NIL	NIL	18,000.00	2
G. Dh. Kaadedhoo Airport	STO	NIL	NIL	NIL	NIL	24,500.00	2
H. Dh. Hanimaadhoo Airport	STO	NIL	NIL	NIL	NIL	23,400.00	2
S. Gan	FSM	1,030,000.00	7	185,000.00	2	48,000.00	2
G. Dh. Thinadhoo	FSM	270,000.00	2	NIL	NIL	NIL	NIL
Fuvahmulah	FSM	36,000.00	1	NIL	NIL	NIL	NIL

THE FOLLOWING ARE THE HEALTH AND ENVIRONMENTAL MEASURES TAKEN BY STO AND FSM:

*Fuel tank cooling systems are used in all fuel tanks;*

*Fire alarm system and fire extinguisher attached at different location;*

*Fuel firms are separated off using fence net and barbed wire as per MNDF recommendations.*

## 2.4 CHEMICAL TRANSPORTATION

Issues related to chemical transportation are low in Maldives, since Maldives is not a supply chain center. Imported chemicals are mainly shipped by sea and upon arrival in the country, chemicals are once again transported to their respective destinations by sea. Upon arrival to the domestic terminals, chemicals are transported by trucks to their storage facilities.

THE FOLLOWING TABLE 14 DISPLAYS THE SUPPLY CHAIN FOR THE DISTRIBUTION AND TRANSPORTATION OF THE AFOREMENTIONED BULK CHEMICALS.



**Table 14: Supply chain for bulk distribution system and transport**

CHEMICAL TYPE	TYPE OF TRANSPORTATION FACILITY: MARITIME, AIR, ROAD, INLAND WATERWAY	APPROXIMATE CAPACITY (VOLUME IN CUBIC METERS OR WEIGHT IN TONS TRANSPORTED BY YEAR)	LABELING; HEALTH AND ENVIRONMENT PROTECTION MEASURES
Petroleum Products	Maritime, Road	N/A	N/A
Pesticides (agricultural, public health, and consumer use)	Maritime, Road	N/A	Manufacturer labels
Fertilizers	Maritime, Road	N/A	Manufacturer labels
Industrial chemicals (used in manufacturing/ processing facilities)	Maritime, Road	N/A	Manufacturer labels
Consumer chemicals	Maritime, Road	N/A	Manufacturer labels
Chemical Waste	N/A	N/A	N/A
Other chemicals (unknown/ mixed use)	N/A	N/A	N/A

## 2.5 SOURCES OF CHEMICAL WASTE GENERATION AND CAPACITY FOR DISPOSAL

Chemical wastes which are generated around commercial facilities and residences, can be thought to compose mainly of used oil. However, most waste generated in Maldives involves solid waste, which in itself is not directly related to the management of chemicals. Currently, most of liquid waste generated is poured in to the drainage system and solids are mixed with other waste.

Chemical waste management sites have not yet been established and a national waste audit has not been completed.

The ongoing Vandhoo Regional Waste Management project has proposed to segregate waste at the unloading platform. This operation has proposed to segregate and remove hazardous and toxic components (along with high value recyclables and inert fractions) both manually and mechanically. Segregation of waste to remove metals and other hazardous waste will reduce the hazardous metal loaded for incineration.

The Vandhoo operation proposes to divide a landfill into two parts, the first part for fly ash and bulky non-combustible waste, and the second part for the bottom ash. Fly ash and other hazardous materials will be disposed in one compartment of the landfill, whereas the other component will be utilized for storage of bottom ash.

No regular monitoring is carried out to assess the impact of any chemical leachate from dump-sites. The Maldives currently lacks the systems and procedures for the management, recycling and safe disposal of chemical waste.

## THE HAZARDOUS CHEMICAL WASTE MANAGEMENT IN HEALTHCARE FACILITIES ARE AS FOLLOWS

*No records are kept of hazardous chemical waste in health care facilities regarding its generation, treatment and disposal;*

*Almost all health centers and health posts in island communities practice segregation of sharp waste, infectious waste and general wastes at the source of waste generation (e.g. in wards, laboratories, labor rooms, operation theaters, etc.);*

*However, all waste types are mixed and burnt together at general waste sites or in waste burners;*

*Liquid wastes generated from X-ray film processing and laboratories are disposed in a separate soak pit;*

*Dental amalgams with mercury are no longer used in Male' (i.e. at IGMH, ADK, and other dental clinics). It is also not used at the 19 atoll hospitals/health centers throughout Maldives;*

*Hithadhoo Regional Hospital has sound methods for safe handling of mercury spillage and disposal of mercury wastes. However, no other health care facility has such systems in place;*

*Hospital and clinic waste from Male' is taken to and burnt in Thilafushi. Some atoll health facilities have burners and few incinerators, however, open burning is practiced with all types of health care waste;*

*Except usage of latex gloves, other protective gears such as aprons, eye glass, gum boots etc are not generally used.*

The amounts of chemical waste generated in the country is not segregated or recorded. It is unknown whether chemical waste is imported or exported, except for waste oil. In 2014, 17.5 metric tonnes of waste

oil was exported out of Maldives. Nevertheless, the amount of general waste transported to the main waste site in K.Thilafushi is recorded and the figures are shown in Table 15.

Owners of industrial chemicals that have passed the expiry date may apply to MDNS to get assistance and have to bear the logistical costs associated with the disposal process. Chemicals are disposed by the MNDF Fire and Rescue Service.

Previously, hazardous chemical wastes were disposed at K.Thamburudhoo.

However, currently there is no designated area for disposing chemicals and consequently no facility that fulfills environmental criteria for disposing such chemicals. There is no specific facility that specializes in disposing chemicals and related waste. At the moment, MNDF dilutes the waste chemicals and drain it to the ground or sea, due to lack of neutralizing chemicals and proper facilities for chemical disposal.

However, there are facilities to handle general solid waste.

TABLE 15 DISPLAYS DATA WHICH CURRENTLY EXIST IN THE COUNTRY REGARDING GENERATION AND TRADE OF CHEMICAL WASTE.

**Table 15: Amount of total waste transported in tonnes to the main waste site K.Thilafushi from 2003 to 2012, with the only difference made between industrial and domestic waste generated from Male'.**

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<b>Male'</b>										
<b>Industrial</b>	43,886	33,078	38,901	43,648	40,179	52,791	47,881	28,591	55,484	56,059
<b>Domestic</b>	60,611	67,247	71,380	65,752	71,776	81,931	75,668	73,443	71,507	89,797
<b>Villingili</b>	4,300	6,755	7,779	12,311	8,960	9,002	8,232	7,294	6,496	3,661
<b>Hulhumale'</b>	-	1,385	1,918	2,373	1,365	1,162	1,358	1,435	588	-
<b>K. Dhoonidhoo</b>	-	-	276	497	-	-	-	91	-	-
<b>Other islands</b>	-	375	56	-	-	-	-	-	-	-
<b>Ibrahim Nasir International Airport</b>	3,485	3,610	3,685	15,477	9,009	8,505	6,930	6,216	7,329	5,544
<b>Resorts</b>	27,625	30,105	28,810	127,932	137,298	137,298	139,671	134,001	124,446	111,720

TABLE 16 LISTS ALL THE ISLANDS CURRENTLY WITH AND WITHOUT WASTE MANAGEMENT CENTERS IN THE COUNTRY.

**Table 16: Island updates of Waste Management Centers (WMC)**

ATOLL	ISLANDS WITH WMC	ISLANDS WITHOUT WMC	ISLANDS WHERE ESTABLISHMENT OF WMC IS ONGOING
<b>North Thiladhunmathi (HA)</b>	Baarah, Dhidhdhoo*, Filladhoo, Hoarafushi, Ihavandhoo, Kelaa, Thurakunu, Utheemu, Vashafaru	Maarandhoo, Mulhadhoo, Muraidhoo, Thakandhoo, Uligamu,	-
<b>South Thiladhunmathi (HDh)</b>	Hanimaadhoo, Kulhudhuffushi*, Naivaadhoo, Nellaidhoo, Nolhivaranfaru	Finey, Hirimaradhoo, Kuburudhoo, Kumundhoo, Kuribi, Makunudhoo, Neykurendhoo, Nolhivaramu, Vaikaradhoo	-
<b>North Miladhunmadulu (Sh)</b>	Funadhoo*, Komandoo, Maroshi, Narudhoo	Bilehffahi, Feevah, Feydhoo, Kaditheemu, Lhaimagu, Noomaraa	Foakaidhoo, Goidhoo, Maugoodhoo, Milandhoo
<b>South Miladhunmadulu (N)</b>	Holhudhoo, Kedhikolhudhoo, Kudafari, Maafaru, Manadhoo*, Miladhoo, Velidhoo		Fodhdhoo, Hebadhoo, Landhoo, Lhohi, Maalhendhoo, Magoodhoo
<b>North Maalhosmadulu (R)</b>	Agolhitheemu, Alifushi, Fainu, Hulhudhuffaaruu, Iguraidhoo, Kinolhas, Maakurathu, Maduvvari, Meedhoo, Rasgetheemu, Rasmaadhoo, Ungufaaruu*, Vaadhoo	Kandholhudhoo	Innamaadhoo

Table 16: Island updates of Waste Management Centers (WMC)

ATOLL	ISLANDS WITH WMC	ISLANDS WITHOUT WMC	ISLANDS WHERE ESTABLISHMENT OF WMC IS ONGOING
South Maalhosmadulu (B)	Dharavandhoo, Dhonfanu, Eydhafushi*, Fehendhoo, Goidhoo, Hithaadhoo, Kamadhoo, Kendhoo, Kihaadhoo, Kudarikilu, Maalhos, Thulhaadhoo	Fulhadhoo	
Faadhippolhu (Lh)	Hinnavaru, Kurendhoo, Naifaru*, Olhuvelifushi	Maafilaafushi	
Male' Atoll (K)	Dhiffushi, Gaafaru, Gulhi, Guraidhoo, Himmafushi, Huraa, Kaashidhoo, Maafushi, Thulusdhoo*		
North Ari Atoll (AA)	Bodufolhudhoo, Feridhoo, Himandhoo, Maalhos, Mathiveri, Rasdhoo*, Ukulhas		Thoddoo
South Ari Atoll (ADh)	Hangnameedhoo, Dhagethi, Dhidhdhoo, Dhigurah, Fenfushi, Mandhoo	Omadhoo, Kuburudhoo	Maamigili, Mahibadhoo*
Felidhu Atoll (V)	Felidhoo*, Fulidhoo, Keyodhoo, Rakeedhoo, Thinadhoo		
Mulakatholhu (M)	Dhiggaru, Maduvari, Muli*, Naalaafushi, Raiymandhoo, Veyvah	Kolhufushi, Mulah	
North Nilandhe Atoll (F)	Biledhdhoo, Dharaboodhoo, Magoodhoo, Nilandhoo*	Feeali	
South Nilandhe Atoll (Dh)	Bandidhoo, Hulhudheli, Maaeboodhoo, Meedhoo, Rinbudhoo, Vaanee	Kudahuvadhoo*	
Kolhumadulu (Th)	Buruni, Vilufushi, Madifushi, Dhiyamigili, Guraidhoo, Kadoodhoo, Gaadhiffushi, Thimarafushi, Kinbidhoo, Omadhoo	Vandhoo, Hirilandhoo	Veymandoo*
Hadhdhunmathi (L)	Dhabidhoo, Fonadhoo*, Gan, Isdhoo, Kalhaidhoo, Maabaidhoo, Mundoo	Gaadhoo, Hithadhoo, Kunahandhoo, Maamendhoo, Maavah	
North Huvadhu Atoll (GA)	Dhaandhoo, Kanduhulhudhoo, Kolamaafushi, Maamendhoo, Nilandhoo, Viligili*	Dhiyadhoo, Kondey	Dhevadhoo, Gemanafushi
South Huvadhu Atoll (GDh)	Faresmaathodaa, Gadhdhoo, Rathafandhoo, Thinadhoo	Fiyoari, Hoadedhdhoo, Nadalaa, Vaadhoo	Madaveli*
Fuvahmulah (Gn)	Fuvahmulah*		
Addu Atoll (S)	Meedhoo, Hithadhoo*, Hulhudhoo	Feydhoo, Maradhoo, Maradhoo Feydhoo	

Currently, households do not segregate chemical waste from municipal waste, but there is a level of segregation at hospitals and health centers. STO Peoples' Choice Medicals dispose expired or defective medicines either in the presence of Ministry of Health MOH officials, or by STO personnel under the supervision of MOH. Liquid medicines are poured into a hole dug at the waste dumpsite, while the bottle is crushed and the packets are discarded at the site. Pills are removed from its packet/bottle, crushed and buried, while the packet/bottles are also crushed before discarding it at the waste dumpsite. ADK incinerates its own waste, while hospital waste from IGMH is collected by the City Council and disposed at Thilafushi.

No records have been kept on the amounts of chemical waste generated in the country. Male' City Council reports that waste previously used to be separated at the collection area, until 2008. Waste such as batteries, and electronics had separate collection slots, but these were either buried/burned together at Thilafushi. The Male' City Council currently manages waste from Male' and Villimale', and waste is disposed either in a low-lying landfill, causing harm to marine life, or by open-air incineration, releasing toxic smoke. Whilst fumes are released from burning plastic and etc., oil used to burn the rubbish also leak into the surrounding areas.

Due to the high permeability of limestone and absence of underground protection measures, leakage into the groundwater and into the sea is inevitable. PCBs and polychlorinated pesticides, and concentrations of chemical elements are expected to be found in the surrounding and underground areas.

## 2.5 UNINTENTIONALLY GENERATED CHEMICALS

Dioxins and furans are chemicals that are generated unintentionally as by-products of industrial processes. According to the Preliminary Inventory Report on POPs, dioxins and furans have not been assessed in any form in the Maldives in the past, however, it was estimated that burning mixed waste in landfills emit dioxins and furans in the range of approximately 1,000 micrograms TEQ /ton of material burnt. Uncontrolled domestic waste emits up to 1000 micrograms TEQ/ton of burnt waste. Therefore, if an average of 25,000 tons of waste (9% of total waste) was burnt per year at Thilafushi, the amount of dioxins and furans emitted to the air may be as high as 25 grams TEQ per year.

The implications of dioxins/furan residues from the fumes via rainwater and into the sea and food chain require careful assessment, but so far there have been difficulties in recording and collecting data on these chemicals at the dump site.

As of 2012, there were 189 power houses throughout the nation, operated by different utility providers. By the end of 2013, STELCO operated 28 power stations in 26 islands while FENAKA operated 146 power stations in 145 islands. There were 16 power stations operated in 16 islands by island councils and 3 power stations operated in 2 islands by private parties.

Burning oil at power houses can produce nitrogen oxides, carbon dioxide, and methane as well as mercury compounds and sulfur dioxide, depending on the sulfur and mercury content in the burned oil.

In some islands, the power houses are stationed in densely populated areas and therefore, the vicinity of the power houses are subjected to emissions such as smoke and carbon.

TABLE 17 BELOW PROVIDES THE ESTIMATED AMOUNTS OF AIR POLLUTANTS RELEASED IN THILAFUSHI AND THE WHO LIMITS FOR THE LISTED POLLUTANTS.

Table 17: Estimated air pollutions emitted by Thilafushi, based on calculations by UNEP in 2005

PARAMETER	WORLD HEALTH ORGANIZATION LIMITS (MICROGRAMS/M <sup>3</sup> )	ESTIMATED RANGE IN THILAFUSHI (MICROGRAMS/TON)
SO <sub>2</sub> (sulphur dioxide)	100	250-700
NO <sub>2</sub> (nitrogen dioxide)	100	350-650
HCHO (formaldehyde)	0.8	10-20
Pb (lead)	1	1-2
As (arsenic)	0.03	0.06-0.1
Hg (mercury)	0.01	0.1-0.3
Dioxins	13	300-1000

## 2.6 STOCKPILES, WASTE DEPOSITS AND CONTAMINATED SITES

A contaminated site is a site where contaminants occur at concentrations above background levels and pose or are likely to pose an immediate or long-term hazard to human health or environment, or a site where chemical levels exceed the levels specified in policies and/or regulations.

One of the major characteristics of the dumpsite is the regular release of smoke due to spontaneous fires. Populations residing around these dumpsites are affected. Communities at risk of exposure due to POPs include: *People living in the vicinity of dumpsites such as K.Thilafushi.*

*Personnel working in power utilities especially those close to storage sites for transformers which may be containing oil with PCBs*

**NO REGULAR MONITORING IS CARRIED OUT TO ASSESS THE IMPACT OF ANY CHEMICAL LEACHATE FROM DUMP-SITES.**

THE FOLLOWING TABLE 18 DISPLAYS THE DATA THAT CURRENTLY EXIST IN THE COUNTRY REGARDING OBSOLETE CHEMICAL STOCKPILES, CHEMICAL WASTE SITES AND CONTAMINATED SITES.

**Table 18: Obsolete chemical stockpiles, chemical waste sites and contaminated sites**

	GEOGRAPHICAL LOCATION	MAIN CONTENT BY CHEMICAL OR GROUPS OF CHEMICALS/WASTE	MAGNITUDE OF THE STOCKS; EG. SMALL, MEDIUM, OR LARGE.
<b>Obsolete Chemical Stockpiles</b>	n/a	n/a	n/a
<b>Chemical Waste Sites</b>	None	-	-
<b>Contaminated Areas</b>	Waste dump sites	Dioxins and Furans	n/a

## 2.7 TECHNICAL FACILITIES FOR RECOVERY AND RECYCLING OF CHEMICALS

THERE ARE NO FACILITIES FOR THE RECOVERY AND RECYCLING OF CHEMICALS IN THE COUNTRY AS SHOWN IN TABLE 19.

**Table 19: Facilities for recovery and recycling of chemicals and related waste**

LOCATION OF FACILITY/ OPERATION OR PROCESS	DESCRIPTION OF FACILITY/ OPERATION OR PROCESS	DISPOSAL OPERATION	CAPACITY OF THE FACILITY (IN METRIC TONS)	DOES THE FACILITY TREAT IMPORTED WASTES? YES/NO
None				

**2.8 ASSESSMENT**

Maldives imports all its chemicals and is not involved in the production of any chemicals.

The community currently requires a greater understanding of the consequences and best practices of commonly used chemicals. There are a lot of potential occupational hazards in the country pertaining to agrochemical and industrial use.

National data on accidental chemical poisoning in the country is underestimated, given the inadequate reporting mechanisms in regional hospitals and health centers.

It is important to create greater awareness in the community in order to limit the misuse of chemicals or to promote safety to reduce occupational hazards and otherwise.

There are chronic gaps with regard to chemical waste management in the country (e.g. collecting, treating, disposing), which is inconsistent with environmental and public health requirements.

There is a need for mechanisms to dispose of chemical residues from laboratories throughout the country. Currently hazardous chemical wastes generated in the country are disposed by MDNS upon request only.

There is an absence of sound mechanisms to discard PCB contaminated materials and oils in Maldives.

Currently, efforts to properly dispose and handle chemical waste are minimal and the country lacks secure hazardous chemical waste storage, treatment and disposal facilities.

**THERE ARE CHRONIC GAPS WITH REGARD TO CHEMICAL WASTE MANAGEMENT IN THE COUNTRY WHICH IS INCONSISTENT WITH ENVIRONMENTAL AND PUBLIC HEALTH REQUIREMENTS.**

"NOTE: AT THE TIME OF EDITING AND PUBLISHING, THE GOVERNMENT HAD ESTABLISHED A SEPARATE ENTITY, THE WASTE MANAGEMENT CORPORATION LIMITED (WAMCO) TO PROVIDE A PRACTICAL AND AN ENVIRONMENTALLY RESPONSIBLE AND SUSTAINABLE SOLID WASTE COLLECTION SERVICE. THE COMPANY IS TO OPERATE A WASTE TRANSPORTATION SYSTEM BETWEEN DESIGNATED WASTE COLLECTION POINTS AND WASTE PROCESSING AND DISPOSAL FACILITIES. MALE' CITY COUNCIL IS NO LONGER MANDATED TO CARRY OUT THE WASTE SERVICES FOR MALE'."

THE MAJOR GAPS AND ISSUES IDENTIFIED IN THE CHAPTER ARE SUMMARIZED IN BELOW TABLE 20



**Table 20: Gaps, issues and recommendations identified in chapter 2**

GAPS	ISSUES	RECOMMENDATIONS
<b>Underestimated national data on accidental chemical poisoning</b>	Community requires greater understanding of consequences and best practices of commonly used chemicals	Education and awareness to the public on potential occupational hazards
<b>Absence of sound mechanisms to discard PCB contaminated materials and oils in Maldives</b>	Lot of potential occupational hazards pertaining to agrochemical and industrial use	
<b>Lacks secure hazardous chemical waste storage, treatment and disposal facilities</b>	Inadequate reporting mechanisms in regional hospitals and health centers on chemical poisoning	
	Efforts to properly dispose and handle chemical waste are minimal.	





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## SOUND MANAGEMENT OF PRIORITY CARCINOGENIC CHEMICALS IN MALDIVES

The purpose of this chapter is to provide an overview of carcinogenic chemicals in Maldives.

### 3.1 CANCER PREVALENCE IN MALDIVES

Cancer comprises 8.3% of all deaths in the Maldives. Demographic health surveys reveal that women represent 72% of cancers cases and the prevalent group is 41-50 years. No official national record of cancer patients has been maintained in the Maldives thus far. However, the S. Meedhoo Health Centre has been keeping a record of cancer patients, with the first recorded case in 1960 in S. Meedhoo, and in 1975 in Hulhudhoo. This record lists the type of cancer, year of demise, or whether the person is currently seeking treatment.

### 3.2 INVENTORY OF CARCINOGENIC CHEMICALS

The International Agency for Research on Cancer (IARC) Monograph series, has classified human carcinogens for more than 40 years. The following is based on the list compiled by IARC of known carcinogens, which are currently imported to the Maldives.

*Asbestos in several forms*

*Formaldehyde*

*Nickel compounds as Sulphates of Nickel and Nickel Chloride*

*Cadmium compounds in the form of standard solutions*

*Chromium (IV) compounds in the form of a standard solution*

*Styrene*

THE TABLE 21 PROVIDES AN OVERVIEW OF CURRENTLY KNOWN POTENTIAL CARCINOGENS IMPORTED TO THE COUNTRY AND THEIR CANCER CLASSIFICATION AS PER THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (US EPA).

**Table 21: Potentially carcinogenic pesticides according to the US EPA which are currently being brought into Maldives**

CHEMICAL	CANCER CLASSIFICATION
<b>Acephate</b>	Group C: possible human carcinogen
<b>Alpha-Cypermethrin</b>	Group C: possible human carcinogen
<b>Amitraz</b>	Suggestive Evidence of Carcinogenic Potential
<b>Benomyl</b>	Group C--Possible Human Carcinogen
<b>Bifenthrin</b>	Group C--Possible Human Carcinogen
<b>Buprofezin</b>	Suggestive Evidence of Carcinogenicity, but Not Sufficient to Assess Human Carcinogenic Potential
<b>Captan</b>	Likely at prolonged, high level exposures, but not likely at dose levels that do not cause cytotoxicity and regenerative cell hyperplasia
<b>Carbaryl</b>	Likely to be Carcinogenic to Humans
<b>Carbendazim</b>	Group C--Possible Human Carcinogen
<b>Chlorothalonil</b>	Likely To Be Carcinogenic To Humans
<b>Cypermethrin</b>	Group C--Possible Human Carcinogen
<b>Diazinon*</b>	Group 2A: Probably carcinogenic to humans
<b>Dimethoate</b>	Group C--Possible Human Carcinogen
<b>Fipronil</b>	Group C--Possible Human Carcinogen
<b>Hexythiazox</b>	Likely To Be Carcinogenic To Humans
<b>Iprodione</b>	Likely to be Carcinogenic to Humans
<b>Malathion</b>	Suggestive Evidence of Carcinogenicity, but not sufficient to assess Human Carcinogenic Potential

**Table 21: Potentially carcinogenic pesticides according to the US EPA which are currently being brought into Maldives**

CHEMICAL	CANCER CLASSIFICATION
Mancozeb	Group B--Probable Human Carcinogen
Metaldehyde	Suggestive Evidence of Carcinogenic Potential
Nitrobenzene*	Reasonably anticipated to be carcinogenic to humans
Permethrin	Likely to be Carcinogenic to Humans
propineb	Likely To Be Carcinogenic To Humans
propoxur	Group B-- Probable Human Carcinogen
Propiconazole	Group C-- Possible Human Carcinogen
Tebuconazole	Group C-- Possible Human Carcinogen
Tetramethrin	Group C-- Possible Human Carcinogen
Trichlorfon (Trichlorphon)	Likely to be Carcinogenic to Humans (High Doses), Not Likely to be Carcinogenic to Humans (Low Doses)

\*Classified by IARC

Chemical carcinogens which currently exist in the country have not been identified. As such, an inventory of past and current uses of carcinogenic chemicals in Maldives is currently lacking.

### 3.3 ASSESSING THE RISKS OF CARCINOGENS

#### A) ASBESTOS

Asbestos is a proven carcinogen and can cause fatal respiratory diseases. Its risk arises from the inhalation of airborne asbestos fibers. Sealed and undamaged asbestos products do not pose a threat, and the risk from in-situ asbestos cement products is low (provided they are also in good condition). However, if the corrugated sheet becomes damaged, sawed, drilled, sanded or otherwise disturbed, the asbestos becomes friable and can pose a serious health hazard. Heat, weathering and aging may also weaken the sheets and release the toxic asbestos fiber dust into the air. The sheets must be kept wet during removal to avoid the asbestos fibers becoming airborne.

The Maldives Customs Service (MCS) does not restrict the importation

of asbestos materials or recognize asbestos as a hazardous substance. In 2014 asbestos was imported in the form of the following imports:

Corrugated sheets of asbestos – cement

Sheets of asbestos – cement

Tube & pipe – rigid

Tube & pipe fittings

Panel of asbestos

Tiles

Ceiling strip of asbestos

Cornices

Hose

Articles made of asbestos – cement

Footwear

Headgear

Clothing and clothing accessories

Fabricated asbestos fibers; mixtures with basic & magnesium carbonate; article of such

Mask

Tape

Cord and string whether or not plaited

Gland packing

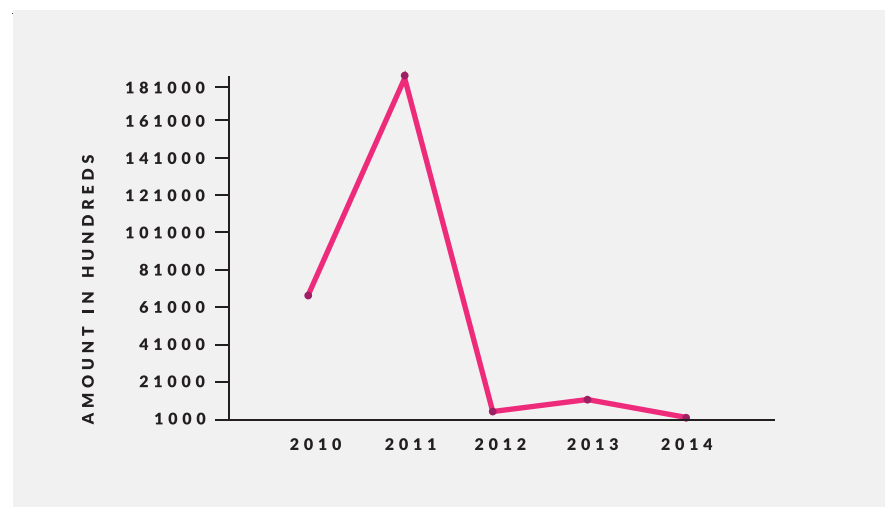


Figure 11: Asbestos sheets imports in square meters into the Maldives

*Fabrics of asbestos, knitted or woven*  
The usage of asbestos in Maldives seems to comprise mostly of relatively "low risk" cement products, mainly in the form of corrugated sheets and ceiling. Asbestos products are imported directly for construction, shipping and fisheries companies, and resort companies. However, the general trend for asbestos corrugated sheets has declined as shown in Figure 11 above.

## B) PESTICIDES

Pesticides are used widely for agricultural, health and household

purposes. However these substances are known to pose neurotoxic, endocrine disruptive and carcinogenic effects on humans. Humans are exposed to pesticides via air (inhalation), water (dermal exposure) and food (oral exposure). Various studies have found linkages between pesticides and cancer; however, the evidence is not strong enough to show a definite link between pesticides and cancer. Many detailed studies have also proved pesticide use as a risk factor for various forms of cancers, such as leukemia, lymphoma, brain tumors, breast cancer and prostate cancer. MOFA has currently posed restrictions

on certain pesticides based on their toxicity; however, there are no specific restrictions on pesticides with carcinogenic potential. Since 2011, more than 20 types of potentially carcinogenic pesticides were imported to the country and an increased trend of import for most of these carcinogenic pesticides was observed over the years. In 2013 alone 10.3 tonnes and 18.3m<sup>3</sup> of pesticides with carcinogenic potential were imported to the country.

TABLE 22 BELOW SHOWS THE AMOUNT OF POTENTIALLY CARCINOGENIC PESTICIDES IMPORTED TO MALDIVES FROM 2011 TO 2013.

Table 22: Amount of Imports of potentially carcinogenic pesticides from 2011-2013

COMPANY	2011		2012		2013	
	LTR	KG	LTR	KG	LTR	KG
Acephate	-	15.0	-	450.0	-	231.2
Alpha-Cypermethrin	-	-	140.0	-	612.0	-
Amitraz	3.0	-	20.0	-	-	-
Benomyl	-	6.0	-	-	-	-
Bifenthrin	47.3	-	91.2	-	131.0	-
Buprofezin	-	11.5	-	-	-	-
Captan	-	140.4	-	240.0	-	211.3
Carbaryl	-	487.5	8.5	187.6	-	2,733.2
Carbendazim	-	81.0	-	306.5	-	1,190.6
Chlorothalonil	144.8	6.6	340.0	-	1,439.4	-
Cypermethrin	5,828.4	1.5	8,046.7	20.0	9,947.0	-
Diazinon	680	185	232.4	680	1,540	47.5
Dimethoate	819.2	-	506.5	-	2,202.8	35.0
Fipronil	828.4	-	267.1	-	1,461.0	140.0
Hexythiazox	-	10.0	-	1.8	-	15.0
Iprodione	-	1.0	-	-	-	-
Malathion	2,948.0	-	496.0	-	300.0	-
Mancozeb	-	1,203.4	146.8	1,295.9	10.0	2,514.7
Metaldehyde	-	266.6	-	50.3	-	1,782.0

Table 22: Amount of Imports of potentially carcinogenic pesticides from 2011-2013

COMPANY	2011		2012		2013	
	LTR	KG	LTR	KG	LTR	KG
Nitobenzene	135	0	53	0	337.3	0
Permethrin	1,277.0	501.0	3,589.2	402.2	56.0	85.0
Propineb	-	812.0	0.6	1,154.8	-	758.6
Propoxur	1,100.0	-	-	-	300.0	-
Propiconazole	6.0	-	5.0	-	-	-
Tebuconazole	158.9	-	204.3	-	74.2	-
Tetramethrin	1.8	-	-	-	12.0	-
Thiamethoxam	-	169.8	16.0	71.8	212.0	553.4
Trichlorfon (Trichlorphon)	10.0	-	-	-	-	-
<b>Total</b>	<b>13,987.8</b>	<b>3,898.3</b>	<b>14,163.3</b>	<b>4,860.9</b>	<b>18,634.7</b>	<b>10,297.5</b>

### C) FORMALDEHYDE AND OTHER CHEMICALS

Formaldehyde is mainly used in pressed wood products such as plywood, and fiberboard, glues and adhesives, permanent-press fabrics, paper product coatings, and certain insulation materials and as intermediates in the synthesis of other chemicals. They are also used in the agricultural sector, laboratory reagents, cosmetics and photography in very small amounts. Exposure to formaldehyde is associated with various health complications such as respiratory disorders and chronic exposure has the potential to cause cancer. It's classified as a known carcinogen by the IARC and as a probable human carcinogen by US EPA.

Large amounts of resins and cosmetics are imported to Maldives annually. Formaldehyde imports for analytical purposes can be seen in Figure 12 below. A study done by UNEP on air pollutants displayed that 10-20 micrograms/tonnes of formaldehyde was released unintentionally in Thilafushi in 2005 alone.

Other known carcinogenic chemicals are imported to the country in the following quantities:

*Nickel compounds as Sulphates of Nickel and Nickel Chloride: 30.91 kg (from 2004-2013) (customs data)*

*Cadmium compounds in the form of standard solutions: n/a*

*Chromium (IV) compounds in the form of a standard solution: 5.10 ltr (from 2004-2013)*

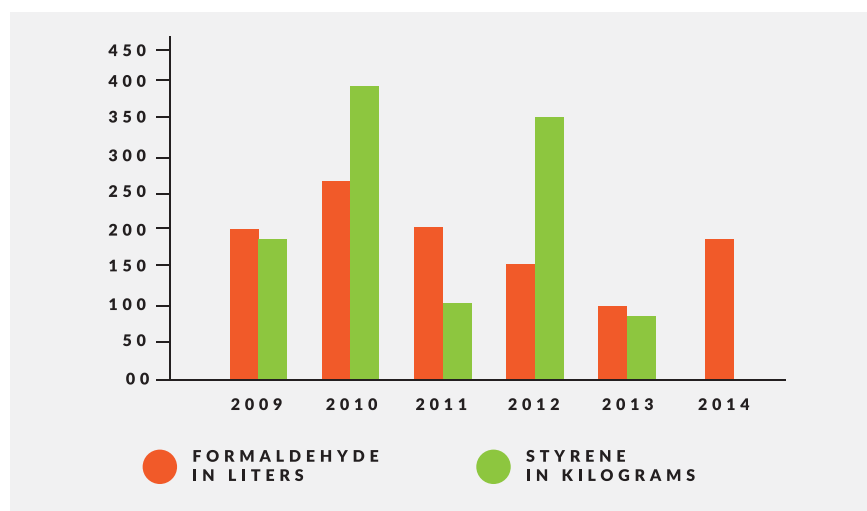


Figure 12: Imports of Formaldehyde and Styrene (2009 to 2014)

**3.4 ASSESSMENT**

Carcinogenic chemicals have not been addressed in the Maldives previously. Therefore, no management interventions have been developed for sound management of carcinogenic chemicals to date. However, due to the increased incidents of cancer in the past years, managing carcinogenic chemicals have become an emerging issue in the health sector.

Currently there is no control on importation, use and placing carcinogenic chemicals on the local market. Known carcinogenic chemicals such as asbestos and formaldehyde and pesticides with carcinogenic potential are currently imported to the country in significant amounts without any controls. Nevertheless, it is impossible to determine a concrete amount of and types of carcinogenic chemicals being used due to lack of specific data.

Issues such as lack of an inventory of carcinogenic chemicals, absence of a harmonized mechanism for managing chemicals and ambiguity of chemicals used by sector and exposed populations to carcinogenic chemicals remain a challenge for sound management of priority carcinogenic chemicals. To this regard, the lack of proper legal framework and enforcement of asbestos import into Maldives is a significant issue.

Moreover, lack of mechanisms for determining the usage and presence of pesticide residues in the environment need to be addressed for ensuring effective regulation of carcinogenic pesticides.

**NO MANAGEMENT INTERVENTIONS HAVE BEEN DEVELOPED FOR THE SOUND MANAGEMENT OF CARCINOGENIC CHEMICALS IN MALDIVES TO DATE.**

THE MAJOR GAPS AND ISSUES IDENTIFIED IN THE CHAPTER ARE SUMMARIZED IN TABLE 23.



**Table 23: Gaps, issues and recommendations identified in chapter 3**

GAPS	ISSUES	RECOMMENDATIONS
<b>No management interventions have been developed for the sound management of carcinogenic chemicals</b>	Lack of an inventory on carcinogenic chemicals	Stricter enforcement and/or prohibition of asbestos import. Or following international regulations.
<b>Lack of authentic and reliable importation data on carcinogenic chemicals make it impossible to determine the amounts and types being used</b>	Absence of a harmonized mechanism for managing carcinogenic chemicals	
	Ambiguity of carcinogenic chemicals used by sector and exposed populations	
	Increased cancer incidence	
	No control on importation, use and on placing carcinogenic chemicals on locals market. E.g. asbestos, formaldehyde, potentially carcinogenic pesticides	

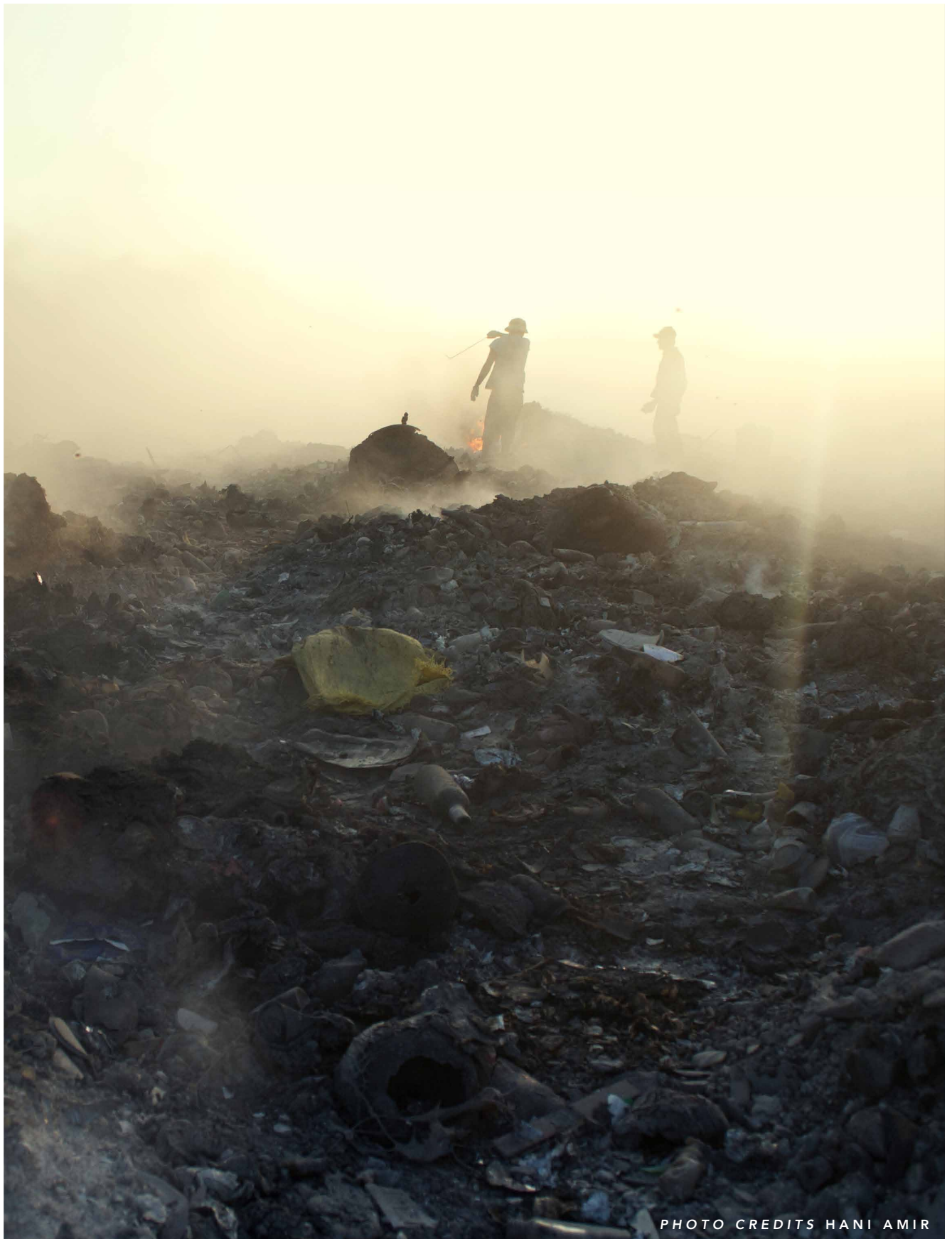


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## LEGAL INSTRUMENTS FOR MANAGING CHEMICALS

### 4.1 OVERVIEW OF KEY LEGAL INSTRUMENTS ADDRESSING THE MANAGEMENT OF CHEMICALS

*This chapter describes some of the instruments that currently address the various aspects of chemical management in the country.*

THE FOLLOWING TABLE 24 PROVIDES AN OVERVIEW OF THE CURRENT LEGAL INSTRUMENTS USED TO MANAGE CHEMICALS IN MALDIVES.

**Table 24: Legal instruments to manage chemicals**

LEGAL INSTRUMENT (TYPE, REFERENCE, YEAR)	RESPONSIBLE MINISTRIES OR BODIES	CATEGORY OF CHEMICALS, TYPE OF BY-PRODUCT, OR TYPE OF RELATED WASTE COVERED	CHEMICAL LIFE CYCLE STAGE COVERED	OBJECTIVES OF LEGAL INSTRUMENT	REGULATION IS MADE PURSUANT TO LAW NO:
<b>Environment Protection and Preservation Act – Law no. 4/93</b>	Environmental Protection Agency, Ministry of Environment and Energy	Harmful waste, oil, poisonous gases. Hazardous/toxic or nuclear wastes.	Use, Transport, Disposal	Requires the mandated government authorities to provide the necessary guidelines and advise on environmental protection in accordance with the prevailing conditions and needs of the country.	
<b>Substances prohibited to be brought into the Maldives – Law no 4/75</b>	Maldives Customs Service, Ministry of Defence and National Security	Chemicals, Acid, Poisons, Toxic Substances, Explosives	Import, Usage, Disposal, Storage	Regulating imports of prohibited substances.	
<b>Waste Management Regulation – Regulation no: 2013/R-58</b>	Environmental Protection Agency, Ministry of Environment and Energy	Hazardous waste (e.g. explosives, flammable liquid/solids, corrosives, toxic/poisonous substances/organic peroxides, etc) Special waste (e.g. combustible/ reactive/ corrosive/ poisonous waste)	Import, Export, Storage, Transport, Disposal	To implement national policies regarding waste management	EPPA - Law no. 4/93
<b>HCFC Regulation – Regulation no: 2010/R-19</b>	Ministry of Environment and Energy, Ministry of Defence and National Security, Ministry of Economic Development	HCFC and HCFC blends	Import, Sale, Use	To reduce and limit the import, use and sale of HCFC and HCFC blends starting from 2011 and bring a complete ban on these substances by 2020.	EPPA - Law No. 4/93
<b>Regulation on Protection and Conservation of Environment in the Tourism Industry</b>	Ministry of Tourism	Toxic or hazardous waste	Disposal	To protect the environment in the tourism industry	Law No. 2/99 (Maldives Tourism Act)



Table 24: Legal instruments to manage chemicals

LEGAL INSTRUMENT (TYPE, REFERENCE, YEAR)	RESPONSIBLE MINISTRIES OR BODIES	CATEGORY OF CHEMICALS, TYPE OF BY-PRODUCT, OR TYPE OF RELATED WASTE COVERED	CHEMICAL LIFE CYCLE STAGE COVERED	OBJECTIVES OF LEGAL INSTRUMENT	REGULATION IS MADE PURSUANT TO LAW NO:
<b>Draft Pesticides Bill</b>	Ministry of Fisheries and Agriculture	Pesticides	All stages	To regulate the management, use and distribution of pesticides with the objective of protecting human, animal and plant health and the marine and terrestrial environment.	
<b>Law on Drugs - Law no. 17/2011</b>	Ministry of Defence and National Security, Maldives Food and Drug Authority, Maldives Customs Service, National Drug Agency	Narcotic drugs and psychotropic substances	All stages	To regulate the production, import, export, trade, possession or handling of any narcotic drugs or psychotropic substances and precursor chemicals.	
<b>Regulation on Petrol Filling Stations</b>	Ministry of Defence and National Security	Petroleum products	Storage, Sale, Transport and Handling	To regulate the storage, handling, transport and sale of petroleum products.	Law no 4/75
<b>Draft Chemical Regulation</b>	Ministry of Defence and National Security	Hazardous chemicals	All stages,	To regulate the import, sale, use permits, safe handling, storage, and disposal of hazardous chemicals.	Law no 4/75
<b>Protection of Public Health Act - Law No. 7/2012</b>	Ministry of Health				
<b>Draft Chemical Weapons Bill</b>	Ministry of Defence and National Security	Chemical weapons	All stages	For the protection and regulation of chemical weapons	

#### 4.2 ADDITIONAL DETAILS ON KEY LEGAL INSTRUMENTS FOR CONTROL OF CHEMICALS

##### A) SUBSTANCES PROHIBITED TO BE BROUGHT INTO THE MALDIVES - ACT NO. 4/75

The objective of this Act is to deal with substances that are prohibited to be imported unless for government purposes, or only to be imported with special permission, or materials which are completely prohibited from being imported into the country.

##### CHEMICAL USE CATEGORIES COVERED:

*Chemical substances are under import, use and manufacture controls unless accompanied with a special permission from the Ministry of Defence and National Security. These include hazardous chemicals and chemical based toxins that do not fall under the category of explosives, but may be used as substances for chemical weapons.*

##### RESPONSIBLE MINISTRY/ ENFORCING AGENCY:

*The Ministry of Defense and National Security is the parent ministry, and the Maldives Customs Service is mandated to implement this Act.*

##### B) THE ENVIRONMENT PROTECTION AND PRESERVATION ACT OF MALDIVES – ACT NO. 4/93

The Environment Protection and Preservation Act is the main legal instrument in the Maldives used to manage environmental issues.

##### CHEMICAL USE CATEGORIES COVERED:

*Section 7 of the Act deals with waste disposal, oil and poisonous substances, and section 8 deals with the disposal of hazardous/ toxic or nuclear wastes*

*which are harmful to human health and the environment.*

##### RESPONSIBLE MINISTRY/ ENFORCING AGENCY:

*The Ministry of Environment and Energy is the custodian of this law.*

##### C) DRAFT PESTICIDES BILL

Pesticides Bill has been drafted and sent to the Attorney General's Office by MOFA. The primary objective of this Bill is to manage pesticides in the country at every stage of its chemical life cycle.

##### CHEMICAL USE CATEGORIES COVERED:

*Regulate the management of the importation, manufacture, distribution, sale, use and disposal of pesticides during all stages of their life cycle, with the aim of protecting human, animal and plant health, marine and terrestrial environment, and to promote sustainable agriculture in the country.*

##### RESPONSIBLE MINISTRY/ ENFORCING AGENCY:

*The Ministry of Fisheries and Agriculture is the authority responsible for enforcing this legislation. A Pesticides Unit will also be established to oversee this Act.*

##### D) LAW ON DRUGS – ACT NO. 17/2011

The Law on Drugs makes provisions for the prevention of the use, peddling and trafficking of drugs.

##### CHEMICAL USE CATEGORIES COVERED:

*Chapter 17 and 18 of the law deals with requirements for possession, use, trade in, distribution, import, export, manufacture and production of drugs and restricts this exclusively to medical*

*and scientific purposes. Article 182 of chapter 26, designates the authority to the National Drug Agency (NDA) and MOH to formulate policies and rules to regulate possession, use, trade in, distribution, import, export, manufacture and production of the aforementioned drugs.*

##### RESPONSIBLE MINISTRY/ ENFORCING AGENCY:

*National Drug Agency (Precursor substances), Maldives Food and Drug Authority (Approved drugs for medical purposes)*

##### E) HCFC REGULATION – REGULATION NO. 2010/R-19

This regulation is enacted by the Ministry of Environment and Energy by the rights vested from the EPPA 4/93, and seeks to manage HCFC usage and phase-out in line with the obligations under the Montreal Protocol on Substances that Deplete the Ozone Layer.

##### CHEMICAL USE CATEGORIES COVERED:

*This regulation formulates methods to achieve the established targets under Montreal Protocol, and to manage and control the importation, sale and usage of HCFC and HCFC blends.*

##### RESPONSIBLE MINISTRY/ ENFORCING AGENCY:

*This regulation is implemented and enforced by the Ministry of Environment and Energy*

##### F) THE REGULATION ON THE PROTECTION AND CONSERVATION OF ENVIRONMENT IN THE TOURISM INDUSTRY

This regulation stipulates the standards for the protection and conservation of

environment in the tourism industry. Its purpose is to encourage and facilitate sustainable development of tourism as well as protecting the environment.

**CHEMICAL USE CATEGORIES COVERED:**

---

*Cans and toxic or hazardous waste (such as battery and waste oil) must be separated and needs to be labeled as such. This regulation requires certain types of equipment to be installed in the islands as part of a condition of the license to operate the resort.*

**RESPONSIBLE MINISTRY/  
ENFORCING AGENCY:**

---

*Resort operators are mandated to adequately manage the waste generated at the resorts. The responsible authority is the Ministry of Tourism. Conservation of trees/ agricultural purposes falls within the mandate of the MOFA.*

**G) WASTE MANAGEMENT  
REGULATION - REGULATION NO.  
2013/R-58**

The purpose of this regulation is to implement national policies regarding waste management and to conserve the environment.

**CHEMICAL USE CATEGORIES COVERED:**

---

*This regulation covers the import, storage, transport, use/handling/ export and disposal of special waste that falls into category 1 and 2.*

Category 1 special waste is waste that has any of the following attributes:

- Waste generated from products having fire combustible sign;
- Reactive waste;
- Corrosive waste;
- Poisonous waste.

Category 2 special wastes are waste generated from the following:

- Engine oil;
- Batteries;
- Fiber resin;
- Pesticides;
- Rat poison;
- Paint and chemical solvents;
- Substances containing mercury;
- Electronics;
- Laboratory chemicals;
- Lead;
- Asbestos.

**RESPONSIBLE MINISTRY/  
ENFORCING AGENCY:**

---

The Environmental Protection Agency is responsible for enforcing this regulation.

**H) DRAFT CHEMICAL REGULATION**

This regulation was drafted from rights vested from the Law no. 4/75, under Article no. 5a(3). It was drafted in 2005 and has not yet been enacted.

**CHEMICAL USE CATEGORIES COVERED:**

---

*This regulation covers different aspects of hazardous chemical management such as its import, sale, use permits, safe handling, storage, and disposal.*

**RESPONSIBLE MINISTRY/  
ENFORCING AGENCY:**

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*This regulation will be implemented and enforced by the Ministry of Defence and National Security following its enactment.*

### 4.3 COVERAGE OF CHEMICALS LIFECYCLE STAGES BY EXISTING

#### LEGAL INSTRUMENTS

THE TABLE 25 PROVIDES AN OVERVIEW OF THE LEGAL INSTRUMENTS TO MANAGE CHEMICALS ACCORDING TO DIFFERENT STAGES OF ITS LIFECYCLE.

Table 25: Overview of legal instruments to manage chemicals by life cycle stage

CATEGORY OF CHEMICAL	IMPORT	PRODUCTION	STORAGE	TRANSPORT	DISTRIBUTION/ MARKETING	USE/ HANDLING	EXPORT	DISPOSAL
Pesticides (agricultural, public health and consumer use)	X		X	X	X	X		X
Fertilizers	X		X	X	X	X		X
Industrial Chemicals (used in manufacturing & processing facilities)	X		X	X	X	X		X
Petroleum products	X		X	X	X	X	X	X
Consumer products	X		X	X	X	X		X
Chemical Wastes	X		X	X		X	X	X
Others	X		X	X	X	X		X
Pharmaceuticals	X		X	X	X	X		X

#### 4.4 DESCRIPTION OF KEY ADMINISTRATIVE PROCEDURES FOR THE CONTROL OF CHEMICALS

According to Law No. 4/75, chemicals under the prohibited substances Act can be imported only after obtaining an official permit. Ministry of Defence and National Security is the responsible authority for granting permits for the importation of chemicals. All who plan to import chemicals into the country should apply to the Ministry to obtain prior approval. The application should include the name of the chemical, its quantity and its intended purpose along with the chemical manufacturer's material safety data sheet.

The existing Import Controls System implemented in the country covers Ozone Depleting Substances (ODS) (including hydrochloroflourocarbons (HCFCs) and blends), industrial chemicals, explosives, petrol, pesticides and chemical fertilizers,

pharmaceuticals, precursor chemicals and chemicals brought for laboratories. Importers of chemicals for agricultural purposes, chemicals of public health significance, precursor chemicals and ODS have to get a 'No Objection' (to import) letter from MOFA, MOH, NDA and MEE respectively prior to application for permits from MDNS. Permit for import is only given when the storage facility for the chemical in question meets the requirements of the chemical storage facility standards set by MDNS.

##### 4.4.1 CHEMICALS FOR AGRICULTURAL PURPOSES

All the chemicals brought for agricultural use purposes have to be officially registered with MFA. The importer has to apply a completed data sheet along with a fertilizer and pesticide import application form to MOFA. The application requires information on purpose of import,

country of consignment, quantity and other chemical related information (active ingredient, concentration, trade name).

MOFA does not object pesticides listed in the positive pesticides list. For new pesticides and chemical fertilizers, the chemical regulation unit of MOFA, reviews and performs technical activities related to evaluation of registration products before issuing a "No objection". A list of banned pesticides is provided in the Annex 4.

##### 4.4.2. CHEMICALS OF PUBLIC HEALTH SIGNIFICANCE

Chemicals of public health significance such as pharmaceuticals are regulated by the Ministry of Health. Pharmaceuticals and other chemicals used for other health purposes require permits for both import and sale.

MOH is responsible for granting a

'No Objection' letter for laboratory chemicals that can be imported and for permitting, registering and licensing the importers, distributors and retailers of pharmaceuticals.

The importers who wish to place new pharmaceuticals and other health related chemicals on the market or for use in Maldives need to submit data on chemicals to MFDA (a separate legal entity regulated by MOH) for registration and obtaining permits. Similarly, an approval is required from NDA for importers who wish to deal with precursor substances in the Maldives (a list of approved precursors is provided in the annex). The information categories required for registration of new products include:

*Pharmaceutical product information sheet – active ingredient, brand name, concentration strength;*

*Manufacturer related information;*

*Material safety data sheet;*

*Regulatory situation;*

*Use and handling related information.*

#### 4.4.3. OTHER CHEMICALS

Petroleum and ODS require permits to import. Approvals for import, export and use of these substances are issued by their respective authorities, i.e. approval for import and distribution of petrol from MDNS and ODS from MEE. Importers are required to submit information on the chemical to their respective authority, based on the material safety data, completed with:

*The purpose of use of the chemical;*

*Quantity and chemical related information of the product;*

*Country of consignment and distributors.*

#### 4.5 ASSESSMENT

There is currently no national legislation focusing specifically on chemical management. Since chemicals are imported into the country and not manufactured, the laws pertaining to chemicals concentrate mostly on its import. The Law on Drugs (Act no. 17/2011) and the Law on Items Prohibited to be brought in to Maldives (Act no. 4/75) regulates the import of

prohibited chemicals used as drugs, precursor chemicals or explosives.

Legislations regulating certain aspects of chemicals (such as disposal of hazardous wastes in the Waste Management Regulation) and draft bills of regulations specific chemicals (such as the Pesticides Bill and the Chemical Regulation) do exist in the country; however, they are not yet enforced or implemented properly due to lack of financial resources and political will.

Furthermore, currently there is no control on the quality of the chemicals and labeling. Requirements for inspecting chemical storage warehouses are also inadequate and there are no specific reporting requirements for chemical distributors, retailers and consumers. According to MOFA, banned pesticides are still being imported to Maldives without approval from MDNS. Thus, this needs to be addressed by employing a solid mechanism to inspect such chemicals at the time of import.

Moreover, there is no comprehensive mechanism for licensing distributors, users and retailers of chemicals (such as asbestos), except for chemicals used for pharmaceutical purposes.

THE MAJOR GAPS AND ISSUES IDENTIFIED IN THE CHAPTER ARE SUMMARIZED IN TABLE 26.

Table 26: Gaps, issues and recommendation identified in chapter 4

GAPS	ISSUES	RECOMMENDATIONS
<b>No national legislation on chemical safety</b>	Lack of political will and financial resources	
<b>No control on quality of the chemicals and labeling</b>	Legislation (e.g. chemical regulation) not yet enacted, or is not properly enforced (e.g. waste management regulation)	
<b>No specific reporting requirements for chemical distributors, retailers and consumers</b>	Requirements for inspecting chemical storage warehouse are inadequate	

## MINISTRIES, AGENCIES AND OTHER INSTITUTIONS MANAGING CHEMICAL

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The purpose of this chapter is to provide a description of mandates and programs of relevant ministries, agencies and other governmental institutions responsible for and concerned with various aspects of chemical management.

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### 5.1 RESPONSIBILITIES OF DIFFERENT MINISTRIES, AGENCIES AND OTHER GOVERNMENTAL INSTITUTIONS

In Maldives, the responsibilities of chemical management are divided between several authorities of government.

### 5.2 DESCRIPTION OF AUTHORITIES AND MANDATES

#### MINISTRY OF DEFENCE AND NATIONAL SECURITY (MDNS)

Tel. +960 3322601  
Website: www.defence.gov.mv

The MDNS regulates, amongst others, the import of dangerous chemicals into the country. Article 5 of the Act No. 4/75 states that all dangerous chemicals (except for fireworks), acids, and other poisonous items produced using these chemicals can only be imported into the country with written permission from the ministry and in accordance with such rules and regulations set out by the ministry. MDNS is also obliged by the CWC to monitor/control the flow of chemicals that are categorized as chemical weapons.

#### MALDIVES NATIONAL DEFENCE FORCE (MNDF)

Tel. +960 332 2607  
Website: www.mndf.gov.mv

The Maldives National Defence Force (MNDF) is the overarching agency dealing with the disposal of chemicals given that chemicals are seen as a safety and security issue. At the point of importation, MCS and MNDF inspect goods to ensure goods are in accordance with the list.

#### MALDIVES CUSTOMS SERVICE (MCS) Tel. 960 332 2001

E-Mail: customsmail@customs.gov.mv  
Website: www.customs.gov.mv

The MCS ensures that the regulations regarding the import of chemicals into the country are met and fulfilled. They verify that the chemicals imported into the country are authorized for importation, and withholds any chemicals without such authorization, and promptly discards it if required.

#### MINISTRY OF ENVIRONMENT AND ENERGY (MEE)

Tel. +960 301 8300  
Website: www.environment.gov.mv

MEE is responsible for the management and guidance of control of environmental hazards caused by chemicals such as HCFCs and HCFC blends by formulating a guideline to reduce and limit the import, use and sales and phasing it out completely by 2020.

#### ENVIRONMENTAL PROTECTION AGENCY (EPA)

Tel. +960 333 5949  
Website: www.epa.gov.mv

EPA is the regulatory body assigned to implement the laws and regulations pertaining to the environment sector. The Agency reviews and gives clearance to Environmental Impact Assessments as per the Environmental Impact Assessment Regulations.

#### MINISTRY OF HEALTH (MOH)

Tel. +960 332 8887  
E-Mail: mohf@health.gov.mv  
Website: www.health.gov.mv

The ministry is responsible for establishing policies for protection of public health. The following authorities are formed under MOH to work at the frontline to implement the Public Health Act, Law No. 7/2012.

#### MALDIVES FOOD AND DRUG AUTHORITY (MFDA)

Tel. +960 301 4322  
Website: www.mfda.gov.mv

MFDA is the competent authority for certifying the import and export items of food and drugs. Some of the responsibilities of MFDA with regard to chemicals include:

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Developing guidelines for food, water, medicine, chemicals, medical gas, vaccine, and other biological medical devices and diagnostics and radiation emitting devices;

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Carrying out laboratory investigation and certify the import and export items of food, water, medicine, chemicals, medical gas, vaccine, and other biological medical devices and diagnostics and radiation emitting devices;

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Monitoring the storage, production, and sales and distribution of items of food, water, medicine, chemicals,

medical gas, vaccine, and other biological medical devices and diagnostics and radiation emitting devices.

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**HEALTH PROTECTION AGENCY (HPA)**

Tel. +960 301 4494  
E-Mail: hpa@health.gov.mv  
Website: www.hpa.gov.mv

HPA is formed under the Public Health Act Law No. 7/2012 to establish policies for protection of public health and identify the parties responsible for its protection, to define how public health protection policies will be implemented and establish policies to limit basic rights ensured under the constitution of the Maldives to Maldivians and people residing in Maldives to protect public health. Some of the jurisdictions of the agency include the following:

Establish policies to protect public health in Maldives;

Identify communicable, dangerous and notifiable diseases and develop policies on how such diseases can be classified;

Identify lifestyle related diseases and non-communicable diseases, increase public awareness on such diseases and establish policies to protect the public from such diseases;

Establish policies to respond to public health emergencies;

Classify situations which may be harmful to health and establish methods to act in such a situation;

Establish roles and responsibilities of the island, atoll and city councils in protection of public health;

Make each Maldivian citizen a responsible and accountable person

with regard to public health protection.

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**NATIONAL DRUG AGENCY (NDA)**

Tel. +960 3328184  
E-Mail: nda@health.gov.mv  
Website: www.nda.gov.mv/home

NDA is the regulatory body assigned to implement the policies related to the law no. 17/2010 (the law on drugs). They are mandated to make regulations relating to the following:

Rules relating to the importation of precursor substances into the Maldives;

Rules providing for the issue of licenses to persons authorized to import precursor substances into the Maldives;

Rules relating to the registration of places and buildings designated for the import, export, manufacture, production, distribution, storage or transportation precursor substances;

Rules relating to documentation required for transactions relating to precursor substances;

Rules providing for keeping of records in relation to precursor substances or information required to be provided in relation to precursor substances and for the inspection of such records;

Rules relating to the labeling of containers of precursor substances.

**MINISTRY OF FISHERIES AND AGRICULTURE (MOFA)**

Tel. +960 332 2625  
E-Mail: info@fishagri.gov.mv  
Website: www.fishagri.gov.mv

General summary of the mandate of the Ministry of Fisheries and Agriculture regarding chemicals is as follows:

Developing standards and regulations related to the import and handling of pesticides and fertilizers;

Updating data regarding pesticides and chemical fertilizers (this will be facilitated and systematized by the proposed project activity "National Chemicals Management Database Development");

Issuing licenses for the import of pesticides and chemical fertilizers.

**5.3 ASSESSMENT**

The Act no. 4/75 is the main Act concerning chemicals in Maldives, which defines the obligations and rights of MDNS to regulate the importation of chemicals. There is no specific legislation defining obligations and rights of different parties and their authority for control of chemicals. Nevertheless chemicals administration is divided among four ministries, namely, MDNS, MOH, MEE and MOFA. Requirements for regulating chemicals by their respective ministries exist within their own spheres of authority as described above.

Currently there is a significant gap and lack of adequate regulatory mechanisms for managing chemicals. Though the ministries are mandated to regulate chemicals within their scope of authority, fragmentation of responsibilities among different authorities pose a challenge in managing chemicals.

It is necessary to establish a legal base especially designated for management of chemicals. There is need for a comprehensive law on chemicals, defining obligations and rights of different parties and their authority for control of chemicals, addressing occupational and public health, chemical disposal and all other aspects of chemical management.

THE MAJOR GAPS AND ISSUES IDENTIFIED IN THE CHAPTER ARE SUMMARIZED IN THE TABLE 27.



**Table 27: Gaps, issues and recommendations identified in chapter 5**

GAPS	ISSUES	RECOMMENDATIONS
<p><b>No specific legislation defining obligations and rights of different parties and their authority for control of chemicals.</b></p>	<p>Fragmentation of responsibilities among different authorities poses a challenge in managing chemicals.</p>	<p>There is a need for a comprehensive law on chemicals, defining obligations and rights of different parties and their authority for control of chemicals, addressing occupational and public health, chemical disposal and all other aspects of chemical management.</p>





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## RELEVANT ACTIVITIES OF INDUSTRY, PUBLIC INTEREST GROUPS AND RESEARCH SECTORS

*This chapter assesses the existence of any activities or available expertise of non-governmental organizations which may potentially support national efforts to manage chemicals, or who aim to improve the sectors' environmental performance and safe use and disposal of such chemicals as well as protect public health and the environment related to effects caused by the current chemicals use in Maldives.*

In order to effectively implement laws, regulations and national policies, the participation of community and private organizations is important. However, participatory chemicals management between the public, community, and other agencies is insufficient due to the lack of coordination mechanisms, human resources, and financial resources for promoting such participation.

Not many private organizations work in the area of chemical management, though, some of them like Male' Water and Sewerage Company (MWSC) have the technical capacity to do so. At the moment, some private companies discard its laboratory chemical wastes into the sea, however, if proper awareness and information is provided, this can be avoided.

THE CURRENT AVAILABILITY OF EXPERTISE OUTSIDE THE GOVERNMENT, IN THE FOLLOWING AREAS PERTAINING TO CHEMICAL MANAGEMENT IS SUMMARIZED IN TABLE 29.

**Table 28: Relevant NGOs**

NAME OF THE ORGANIZATION	SPECIFIC FOCUS	DESCRIPTION	CONTACT
<b>Maldives National Trade Unions Congress</b>	Labor rights	An organization working to strengthen and empower labor unions and workers associations in Maldives. The alliance represents, Maldives Labor Union, Pilots of Maldives, Maldives Port Workers Union, Teachers Association of Maldives and Tourism Employees Association of Maldives. These unions are involved in voicing out the fundamental rights and welfare of the workers and can be future advocates of chemical safety at the workplace.	Website: <a href="http://www.mntuc.org/">http://www.mntuc.org/</a>
<b>Maldives Association of Construction Industry</b>	Labor interests	Look after the interests of the contractors, laborers, employers, employees, the all technical and support staff plus collaborating on commercial and market interests of the construction industry and to generate public awareness for these interests both within the government and among the general public.	Website: <a href="http://maci.org.mv">maci.org.mv</a>
<b>Blue peace (NGO)</b>	Environmental sustainability	Blue peace acts as an advocate for, raising awareness of, and supports activities related to sustainable development and island conservation.	Tel. +960 771 2378 E-Mail: <a href="mailto:bluepeace.maldives@gmail.com">bluepeace.maldives@gmail.com</a> Website: <a href="http://www.bluepeacemaldives.org">www.bluepeacemaldives.org</a>
<b>ECOCARE Maldives (NGO)</b>	Environmental sustainability	ECOCARE Maldives works for the protection and sustainable development of the environment through public awareness programs, community based projects and other relevant activities.	Tel. +960 777 1504 E-Mail: <a href="mailto:contact@ecocare.mv">contact@ecocare.mv</a> Website: <a href="http://www.ecocare.mv">www.ecocare.mv</a>

Table 28: Relevant NGOs

NAME OF THE ORGANIZATION	SPECIFIC FOCUS	DESCRIPTION	CONTACT
Live & Learn (NGO)	Environmental education and public awareness	Live & Learn provides education, mobilizes communities, and facilitates supportive partnerships in order to help communities move towards a sustainable future. They focus on community based projects with a wide range of areas from waste reduction, human health, environmental governance, climate change to sustainable development.	Tel. +960 330 3585 E-Mail: Maldives@livelearn.org Website: www.livelearn.org/

Table 29 Summary of expertise outside of government

FIELD OF EXPERTISE	EXPERTISE AVAILABLE OUTSIDE OF GOVERNMENT					
	RESEARCH INSTITUTES (MNU)	UNIVERSITIES (MNU, VILLA)	INDUSTRY	ENVIRONMENTAL / CONSUMER	LABOR UNIONS	PROFESSIONAL ORGANIZATIONS
Data Collection	X	X	X	X	X	X
Testing of Chemicals	X	X	X	X		
Risk Assessment	X					X
Risk Reduction						X
Policy Analysis					X	X
Training and Education	X	X		X		X
Research on Alternatives						X
Monitoring	X	X	X			X
Follow up						
Enforcement (Inspection)					X	
Information to Workers					X	
Information to Public		X		X		

### 6.1 ASSESSMENT

Even though there aren't many organizations outside government working in the field of chemicals management in Maldives, there are a number of potential technical expert groups available. MWSC conduct laboratory tests of water samples using imported chemicals. All secondary private schools use chemicals in the laboratory for educational purposes.

Research institutes like MNU and other private institutions conduct information sessions, studies and research, but these are relatively few and vary in quality.

The level of cooperation between the government and non-governmental sectors in chemicals management so far has been minimal. The government is commencing actions in the field of chemicals management, but no

structural approach has been made to make optimal use of available expertise in the non-governmental sector.

THE MAJOR GAPS AND ISSUES IDENTIFIED IN THE CHAPTER ARE SUMMARIZED IN TABLE 30

Table 30: Gaps, issues and recommendations identified in chapter 6

GAPS	ISSUES	RECOMMENDATIONS
No structural approach has been made to make optimal use of available expertise in the non-governmental sector	Relatively few research institutes conduct information, studies and research on chemicals and they vary in quality	
	Level of cooperation between government and non-govt. sectors in chemical management has been minimal	

## INTER-MINISTERIAL COMMISSIONS AND COORDINATING MECHANISMS

*Managing chemicals involve a wide range of issues that can be addressed by several government ministries or agencies, as well as parties outside the government.*

*Currently, the only existing inter-ministerial commission regarding chemicals is the National Chemicals Management Committee (NCMC), whose overview is provided in Table 31.*

NATIONAL CHEMICALS MANAGEMENT COMMITTEE (NCMC), WHOSE OVERVIEW IS PROVIDED IN TABLE 31.

### 7.1 DESCRIPTION OF INTER-MINISTERIAL COMMISSIONS AND COORDINATING MECHANISMS

The NCMC is an inter-ministerial forum in which government departments are represented, and was established as a requirement under the SAICM project. A broad scope in types of chemicals is covered e.g. persistent organic pollutants, pesticides, chemicals used

in health-care facilities, industrial. The NCMC was established in 2014 and hold regular meetings; the committee has a stronger role in advising and information exchange than as a decision-making authority.

The committee mainly oversees the following two projects:

**1** The SAICM project “Strengthening Capacities for National SAICM Implementation in Maldives” developed by the Ministry of Environment and Energy with assistance from UNITAR and funded by QSPTF.

**2** “Enabling activities to facilitate early action on the implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs)”, developed by the Ministry of Environment and Energy with the assistance from UNIDO and funded by GEF.

The NCMC provide strategic guidance and direction to the projects, as well as substantive advice and guidance on efficient and timely execution of the projects. They help to resolve significant conflicts within the projects, and to negotiate a solution to major problems that may arise between the projects and external bodies. The Committee also review/establish national priorities for chemicals managements on a yearly basis, and promote and share

information on chemicals related activities of the respective members.

The responsibility for chemicals management in Maldives is dispersed among several authorities in areas of authorizing, transport and disposal and administration in case of emergencies. For instance, imported cargo containing any chemicals must come with a permit declaration form pre-authorized by the Maldives National Defence Force (MNDF). The information on this declaration form must correlate with the details provided with the imported shipment. Without this authorization, the shipment will not be cleared and will be withheld in coordination with the Maldives Ports Limited (MPL) in an MPL designated area, until the declaration form is presented to the MCS. If the imported chemical shipment is to be discarded, it will be promptly disposed under MNDF supervision in the presence of MCS, MPL and the importer.

Some regulations however, like the procedures mentioned above, overlap with different authorities, and thus inter-ministerial coordination is required. A joint effort between the Ministry of Environment and the MDNS, to collaborate and create a National Chemical Database, is currently being undertaken which will include information on chemicals that are imported into the country. The database development is part

**Table 31: Overview of NCMC**

MECHANISM	RESPONSIBILITIES	SECRETARIAT	MEMBERS	MANDATE/OBJECTIVE
National Chemical Management Committee	Oversees the following two projects: -The SAICM project “Strengthening Capacities for National SAICM Implementation in Maldives” -Enabling activities to facilitate early action on the implementation of the Stockholm Convention on POPs.	SAICM Project Team  POPs Project Team	MEE, MCS, MDNS, MNDF, Police, MNU, HPA, MTC, Waste Dept, MEE, EPA, MOFA, MFDA, MCC, Fenaka Corporation Ltd.	Will lobby high-level commitment to the objectives of the Stockholm Convention and SAICM and other chemical related forums. - Will provide a forum where different views and technical knowledge on specific issues of chemical management can be shared.

of the SAICM efforts, but is also an independent undertaking of MDNS and has been merged to strengthen inter-ministerial coordination.

## 7.2 ASSESSMENT

The participation of further institutions is still required. Chemical management has been a low priority issue within government agencies, which is further exacerbated by the lack of resources – both financial and technical expertise. Fragmented responsibilities are a barrier to improving inter-ministerial coordination. This leads to lack of information sharing.

The fragmented nature of legislation on chemicals also hampers its sound management. Rather than having a cohesive legal and regulatory framework for chemicals, legislative requirements are dispersed under sectoral laws (e.g. environment, agriculture, national security). This makes it difficult for ministries to avoid duplication of effort and results in inefficient use of resources.

### **THE RESPONSIBILITY FOR CHEMICALS MANAGEMENT IN MALDIVES IS DISPERSED AMONG SEVERAL AUTHORITIES IN AREAS OF AUTHORIZING, TRANSPORT AND DISPOSAL AND ADMINISTRATION IN CASE OF EMERGENCIES.**

THE MAJOR GAPS AND ISSUES IDENTIFIED IN THE CHAPTER ARE SUMMARIZED IN TABLE 32.



**Table 32: Gaps, Issues and recommendations identified in chapter 7**

GAPS	ISSUES	RECOMMENDATIONS
<b>Lack of resources (financial, technical/human resources)</b>	Duplication of efforts, results in inefficient use of resources	Develop a cohesive, legal and regulatory framework to manage chemicals
<b>Lack of chemical management information sharing mechanisms (inter-ministerial)</b>	Legislative requirements dispersed under sector laws	Develop integrated information sharing mechanisms

## INFORMATION MANAGEMENT, ACCESS AND USE

This chapter provides an overview of the information management capacity in Maldives with respect to sound chemical management and in particular the availability of data and how it is used for national and local chemical risk reduction.

### 8.1 SUFFICIENCY IN QUALITY AND QUANTITY OF AVAILABLE INFORMATION

THE FOLLOWING TABLE 33 DEMONSTRATES THE AVAILABLE INFORMATION ON CHEMICAL MANAGEMENT CURRENTLY IN THE COUNTRY. AS INDICATED, THE DATA REQUIRED FOR CHEMICAL MANAGEMENT IS INSUFFICIENT THROUGHOUT INSTITUTIONS.



Table 33: Sufficiency of available information (qualitative and quantitative)

DATA NEEDED FOR/TO	PESTICIDES (AGRICULTURAL, PUBLIC HEALTH, AND CONSUMER USE)	INDUSTRIAL CHEMICALS	CONSUMER CHEMICALS	CHEMICAL WASTES	OZONE DEPLETING SUBSTANCES	OTHER AREAS OF CHEMICALS CONCERN
Priority Setting	n/a	n/a	n/a	n/a	n/a	n/a
Assess Chemicals Impact under Local Conditions	n/a	n/a	n/a	n/a	n/a	n/a
Risk Assessment (Environment/Health)	n/a	n/a	n/a	n/a	n/a	n/a
Classification/ Labeling	n/a	n/a	n/a	n/a	n/a	n/a
Registration	n/a	n/a	n/a	n/a	n/a	n/a
Licensing	n/a	n/a	n/a	n/a	n/a	n/a
Permitting	X	X	X	X	X	X
Risk Reduction Decisions	n/a	n/a	n/a	n/a	n/a	n/a
Accident Preparedness/ Response	n/a	n/a	n/a	n/a	n/a	n/a
Poisoning Control	n/a	n/a	n/a	n/a	n/a	n/a
Emissions Inventories	n/a	n/a	n/a	n/a	n/a	n/a
Inspections & Audits (Environment/ Health)	n/a	n/a	n/a	n/a	n/a	n/a
Information to Workers	n/a	n/a	n/a	n/a	n/a	n/a
Information to the Public	n/a	n/a	n/a	n/a	n/a	n/a

## 8.2 SOURCES OF NATIONAL DATA AND THEIR ACCESS FORMAT

Data is collected to cater for specific and diverse requirements from government institutions. Thus, such data is not tailored to be easily interpreted for chemical management use.

THE FOLLOWING TABLE 34 INDICATES THE NATURE OF NATIONAL DATA RELATED TO CHEMICALS MANAGEMENT THAT IS AVAILABLE, AND PRACTICAL INFORMATION ON HOW TO GAIN ACCESS TO SUCH DATA.

**Table 34: Sources of national data, access and format**

TYPES OF DATA	LOCATION	WHO HAS ACCESS	HOW TO GAIN ACCESS	FORMAT
<b>Import statistics</b>	MCS-Tariffs and statistics MDNS MEE-National ozone unit MOFA- chemical regulation unit	Staff Supervisor	Inquiry, Write, Email	Database Document
<b>Export Statistics</b>	MCS-Tariffs and statistics	Staff Supervisor	Inquiry, Write, Email	Database
<b>Chemical Use Statistics</b>	n/a	n/a	n/a	n/a
<b>Industrial Accident Reports</b>	n/a	n/a	n/a	n/a
<b>Transport Accident Reports</b>	n/a	n/a	n/a	n/a
<b>Occupational health data (agricultural)</b>	n/a	n/a	n/a	n/a
<b>Occupational health data (industrial)</b>	n/a	n/a	n/a	n/a
<b>Poisoning statistics</b>	n/a	n/a	n/a	n/a
<b>Pollutant release and transfer register</b>	n/a	n/a	n/a	n/a
<b>Hazardous waste data</b>	n/a	n/a	n/a	n/a
<b>Register of Pesticides</b>	n/a	n/a	n/a	n/a
<b>Register of toxic chemicals</b>	n/a	n/a	n/a	n/a
<b>Inventory of existing chemicals</b>	MOFA- chemical regulation unit MCS-Tariffs and statistics MDNS	Staff Supervisors	Write, email	Database
<b>Register of imports</b>	MCS-Tariffs and statistics	Supervisors	Write, email	Database
<b>Register of carcinogens</b>	n/a	n/a	n/a	n/a

### 8.3 AVAILABILITY OF INTERNATIONAL LITERATURE AND DATABASES

THE FOLLOWING TABLES 35 AND 36 LIST SOME INTERNATIONAL DATABASES AND LITERATURE RESOURCES TO AID IN THE SOUND MANAGEMENT OF CHEMICALS.

Table 35: Availability of international literature

LITERATURE	LOCATION(S)	WHO HAS ACCESS AND IN WHAT FORM
<p><b>SAICM Information Clearing House:</b> Both a centralized place for news relevant to chemicals and a repository of core resources. The news is distributed in 6 main categories: knowledge and information, risk reduction, governance, capacity building, illegal international traffic, stakeholders.</p>	<a href="http://www.saicm.org/ich/">http://www.saicm.org/ich/</a>	Freely available to the public via internet
<p><b>Environmental Health Criteria Documents (WHO/IPCS):</b> Disseminates evaluations of the effects of chemicals on human health and the quality of the environment</p>	<a href="http://www.who.int/ipcs/publications/ehc/en/index.html">http://www.who.int/ipcs/publications/ehc/en/index.html</a>	Freely available to the public via internet
<p><b>Concise International Chemical Assessment Documents (WHO/IPCS):</b> Similar to Environmental Health Criteria Documents in providing internationally accepted review on human health and the environment chemicals/combinations on human health and environment. Summarizes the information considered critical for risk characterization in sufficient detail to allow independent assessment, but are concise not repeating all the information available on a particular chemicals.</p>	<a href="http://www.who.int/ipcs/publications/cicad/en/index.html">http://www.who.int/ipcs/publications/cicad/en/index.html</a>	Freely available to the public via internet
<p><b>International Chemical Safety Cards (ICSC) - WHO and ILO:</b> ICSC aims to promote the safe use of chemicals in the workplace and the main target users are therefore workers and those responsible for occupational safety and health. Regardless of the great similarities between ICSC and MSDS, they are not the same. The MSDS may be technically very complex and too extensive, and secondly it is a management document. The ICSC, on the other hand, sets out peer-reviewed information about substances in a more concise and single manner.</p>	<a href="http://www.ilo.org/dyn/icsc/showcard.home">http://www.ilo.org/dyn/icsc/showcard.home</a>	Freely available to the public via internet
<p><b>Decision Guidance for Prior Informed Consent (PIC) Chemicals (FAO/UNEP):</b> Formulations in this Guidance document may not necessarily be banned or severely restricted in any country, but have been included because of potential problems under conditions of use in developing countries. The pesticides concerned are all classified by WHO as extremely or highly hazardous, based on the concentration of the active ingredient and the formulations covered. This is intended to serve as a guide and to assist authorities in making a sound decision on whether to continue to import, or to prohibit import, of these chemicals because of health or environmental reasons.</p>	<a href="http://www.fao.org/docrep/w5715e/w5715e00.htm">http://www.fao.org/docrep/w5715e/w5715e00.htm</a>	Freely available to the public via internet.
<p><b>FAO/WHO Pesticides Safety Data Sheets</b> Contains basic information for safe use of pesticides. Gives basic toxicological information on individual pesticides. Priority for issue of PDSs is given to substances having a wide use in public health programs and/or in agriculture, or having a high or unusual toxicity record.</p>	<a href="http://apps.who.int/iris/">http://apps.who.int/iris/</a>	Freely available to the public via internet.
<p><b>Globally Harmonized System of Classification and Labeling of Chemicals (GHS):</b> Addresses the classification of chemicals by types of hazard and proposes harmonized hazard communication elements, including labels and Safety Data Sheets. It aims at ensuring that information on physical hazards and toxicity from chemicals available in order to enhance the protection of human health and environment during handling, transport and use of these chemicals.</p>	<a href="http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html">http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html</a>	Freely available to the public via internet
<p><b>OECD Guidelines for Testing of Chemicals:</b> A collection of internationally agreed test methods used by the government, industry and independent laboratories. They are used to determine the safety of chemicals and chemical preparation, including pesticides and industrial chemicals.</p>	<a href="http://www.oecd.org/chemical-safety/testing/oecdguidelines-forthetestingofchemicals.htm">http://www.oecd.org/chemical-safety/testing/oecdguidelines-forthetestingofchemicals.htm</a>	Freely available to the public via internet
<p><b>OECD Good Laboratory Practice Principles:</b> Developed to promote the quality and validity of test data used for determining the safety of chemicals and chemical products.</p>	<a href="http://www.oecd.org/official-documents/publicdisplay-documentpdf/?cote=env/mc/chem(98)17&amp;doclanguage=en">http://www.oecd.org/official-documents/publicdisplay-documentpdf/?cote=env/mc/chem(98)17&amp;doclanguage=en</a>	Freely available to the public via internet



Table 36 Availability of international databases

DATABASE	LOCATION(S)	HOW TO GAIN ACCESS
<b>WHO/IPCS INCHEM</b> Providing rapid access to internationally peer reviewed information on chemicals.	<a href="http://www.inchem.org/">http://www.inchem.org/</a>	Freely available to the public via internet
<b>WHO/IPCS Human Health Assessment Toolkit: Chemical Hazards</b> Provides users with guidance to identify, acquire and use the information needed to assess chemical hazards, exposures and the corresponding health risks. The toolkit has been developed for public health and environment professionals, regulators, industrial managers and other decision-makers with at least some training in the principles of risk assessment and who have a role in assessing and managing human health risks of chemicals.	<a href="http://www.who.int/ipcs/methods/harmonization/areas/ra_toolkit/en/">http://www.who.int/ipcs/methods/harmonization/areas/ra_toolkit/en/</a>	Freely available to the public via internet
<b>Chemicals Abstract Services Database (CAS)</b> Provides accurate and authoritative chemistry content.	<a href="http://www.cas.org/">http://www.cas.org/</a>	Paid subscription online.

### 8.3 ASSESSMENT

Maldives faces challenges in accessing chemical related data in a harmonized format. This is partly due to an absence of a single platform/database where chemical information is exchanged and disseminated. Data is collected in individual formats and on individual information systems. There are no formal mechanisms to share the collected data among stakeholders.

More environmental indicators need to be developed and data collected. However, given that significance is not placed on managing chemicals, Maldives falls short in prioritizing chemical information needs.

THE MAJOR GAPS AND ISSUES IDENTIFIED IN THE CHAPTER ARE SUMMARIZED IN TABLE 37.



Table 37: Gaps, issues and recommendations identified in chapter 8

GAPS	ISSUES	RECOMMENDATIONS
<b>Absence of a single platform/ database where chemical information is exchanged and disseminated</b>	Data is collected in individual formats and on individual information systems	Environmental indicators need to be developed and data needs to be collected
<b>No formal mechanisms to collect the data in a harmonized format</b>		Prioritize chemical information needs

## TECHNICAL INFRASTRUCTURE

*This chapter is an overview of technical infrastructure and the analytical capabilities of Maldivian chemical laboratories.*

### 9.1 OVERVIEW OF LABORATORY CAPACITY

In Maldives, the main laboratory used by the national administration is located in Male' at the National Health Laboratory at the Maldives Food and Drug Authority operating under the Ministry of Health. There are several other private and state-owned laboratories doing chemical analysis e.g. at the Male' Water and Sewerage Company, and at clinics and educational institutions.

TABLES 38 AND 39 PROVIDE AN OVERVIEW OF NATIONAL LABORATORY INFRASTRUCTURE FOR REGULATORY AND MONITORING CHEMICAL ANALYSIS.

**Table 38: Overview of laboratory infrastructure for regulatory chemical analysis**

NAME/DESCRIPTION OF LABORATORY	LOCATION(S)	EQUIPMENT/ANALYTICAL CAPABILITIES AVAILABLE	ACCREDITATION (IF YES, BY WHOM)	CERTIFIED GOOD LABORATORY PRACTICE (YES/NO)	PURPOSE
<b>National Health Laboratory, Maldives Food and Drug Authority, Ministry of Health</b>	Male', Maldives	AAS, AES, GF-AAS, AAS-hydride, HPLC, GC, FTIR, Spectrophotometers, UV-VIS, Titration, Gravimetric, Fluorometer, Elisa reader	Yes. To the ISO 17025:2005 standard by Bureau of Laboratory Quality Standards, DMSc, Thailand	No	Food & Drug Testing
<b>MWSC</b>	Villingili, Maldives	AES, Spectrophotometry, UV-VIS, Titration, UV-Fluorescence, Potentiometry, Luminescence	Yes. To the ISO 17025:2005 standard by DAC, Dubai	No	Water Testing

**Table 39: Overview of laboratory infrastructure for monitoring chemical analysis**

NAME/DESCRIPTION OF LABORATORY	LOCATION	EQUIPMENT/ANALYTICAL CAPABILITIES AVAILABLE	ACCREDITATION (IF YES, BY WHOM)	MAIN PURPOSE AND THE CHEMICAL SUBSTANCES ANALYZED	NUMBER OF SAMPLES/MONTH (SUBSTANCES ARE NOTED)
<b>National Health Laboratory, Maldives Food and Drug Authority, Ministry of Health</b>	Male', Maldives	AAS, AES, AAS-GF, AAS-hydride, HPLC, GC, FTIR, Spectrophotometers, UV-VIS, Titration, Gravimetric, Fluorometer, Elisa reader	Yes. To the ISO 17025:2005 standard by Bureau of Laboratory Quality Standards, DMSc, Thailand	Chemicals in water, food and pharmaceuticals (heavy metals, inorganics, physical etc.)	150 water samples per month (for all parameters) and 25 food samples per month (mostly histamine in fish)
<b>MWSC</b>	Villingili, Maldives	AES, Spectrophotometry, UV-VIS, Titration, UV-Fluorescence, Potentiometry, Luminescence	Yes. To the ISO 17025:2005 standard by DAC, Dubai	Chemicals and oil (inorganics, some organics, physical etc.) in supplied water, and on commercial basis	600 water samples per month (for different parameters)

## 9.2 ASSESSMENT

Maldives lacks adequate technical infrastructure for complex chemical analysis. The National Health Laboratory is the largest laboratory that exists nationwide for analyzing chemicals. It focuses on analyzing chemicals present in water, food and pharmaceuticals.

There are no existing means for analyzing environmental parameters such as air and soil quality except for soil test kits at the Maldives National University chemistry lab (and other small scale laboratories at schools). Laboratories in educational institutions are used only for training purposes.

There is an urgent need to improve the national capacity and infrastructure for chemical analysis. In this regard, enhancing existing laboratory capacity and their management structure, and to supply new equipment for staff training and quality control is necessary. In addition to this, it is important to note that currently, the sound management of laboratory chemical waste is low.

The lack of financing remains the biggest challenge to implement adequate infrastructure (e.g. laboratory equipment) in Maldives.

THE MAJOR GAPS AND ISSUES IDENTIFIED IN THE CHAPTER ARE SUMMARIZED IN TABLE 40.

**Table 40: Gaps, issues and recommendations identified in chapter 9**

GAPS	ISSUES	RECOMMENDATIONS
<b>Lacks adequate technical infrastructure for complex chemical analysis</b>	Need to improve the national capacity of technical infrastructure for chemical analysis	Enhance existing capacity of technical infrastructure
<b>Lack of adequate air and soil quality testing for complex chemical residue (e.g. pharmaceutical chemicals)</b>	Lack of financing to implement adequate technical infrastructure in laboratories.	

## RESOURCES AVAILABLE AND NEEDED FOR CHEMICALS MANAGEMENT

### 10.1 RESOURCES AVAILABLE IN GOVERNMENT MINISTRIES/ INSTITUTIONS FOR CHEMICALS MANAGEMENT

The following chapter focuses on existing resources available within the government and non-governmental organizations related to various aspects of chemical management.

Specific responsibilities such as risk assessment for regulation or food standards, enforcement of designated areas of legislation such as inspection, pesticide residues in food, monitoring for health impact, monitoring the environmental impact are outlined below.

THE FOLLOWING TABLE 41 PROVIDES AN OVERVIEW OF THE EXISTING RESOURCES AVAILABLE WITHIN THE MINISTRIES AND AGENCIES, WHICH SPECIFICALLY ADDRESS THE GOVERNMENTAL RESPONSIBILITIES WITH RESPECT TO THE SOUND MANAGEMENT OF CHEMICALS.

**Table 41: Resources available in government ministries/institutions**

MINISTRY / AGENCY CONCERNED	SPECIFIC RESPONSIBILITIES FOR WHICH RESOURCES ARE ALLOCATED	NO. OF PROFESSIONAL STAFF INVOLVED	TYPE OF EXPERTISE AVAILABLE	FINANCIAL RESOURCES AVAILABLE
<b>Ministry of Defence and National Security</b>	Security, emergency response, monitoring import/export of chemicals, control and disposal	n/a	Science experts, Technical expertise, Trained staff	n/a
<b>Maldives Customs Service</b>	Regulations on import/export	n/a	Chief Customs Officers as chemical experts	n/a
<b>Ministry of Health (Maldives Food and Drug Authority)</b>	Application, control of pharmaceuticals and food safety	n/a	n/a	n/a
<b>Department of National Planning</b>	Planning, import/export supply	n/a	n/a	n/a
<b>Ministry of Fisheries &amp; Agriculture</b>	Application, regulation and approval	n/a	n/a	n/a
<b>Ministry of Environment &amp; Energy</b>	Assessment, analysis, monitoring	n/a	Analytical expert, Environmental expert, Chemical expert	n/a
<b>Ministry of Economic Development</b>	Control on import/export	n/a	Staff not trained in chemical management.	n/a
<b>Maldives Transport Authority</b>	Transport	n/a	n/a	n/a

## 10.2 RESOURCES NEEDED BY GOVERNMENT INSTITUTIONS TO FULFILL RESPONSIBILITIES RELATED TO CHEMICALS MANAGEMENT.

THE FOLLOWING TABLE 42 PROVIDES AN OVERVIEW OF RESOURCE NEEDS WITHIN THE NATIONAL GOVERNMENT, IN ORDER TO FULFILL THEIR RESPONSIBILITIES FOR CHEMICALS MANAGEMENT.

**Table 42: Resources needed in government ministries/institutions to fulfill responsibilities related to chemical management**

MINISTRY/AGENCY	RESPONSIBILITY TO BE ALLOCATED	PROFESSIONAL STAFF REQUIRED	TRAINING REQUIREMENTS
<b>Ministry of Defence and National Security</b>	Monitoring and supervision	Staff trained in chemical management	Risk assessment capability, emergency response, monitoring capacity
<b>Maldives Customs Service</b>	Control on export/import	Staff trained in chemical management	Packing and identification capacity
<b>Ministry of Health</b>	Usage, storage, transport and treatment	Pharmaceutical expert, Biochemical expert, Staff trained in chemical management	Use, chemical analysis and monitoring capacity, health risk assessment capability, emergency response (health sector emergency response plan developed by HPA)
<b>Ministry of Fisheries &amp; Agriculture</b>	Usage, storage, transport and monitoring supervision	Agrochemical expert, Staff trained in chemical management	Chemical analysis, usage, storage
<b>Ministry of Environment &amp; Energy</b>	Assessment, analysis, monitoring	Staff trained in chemical management	Analytical expert, Environmental expert, Chemical expert
<b>Ministry of Economic Development</b>	Import/export limitations	Chemical experts and training in chemical management	Identification capacities, storage and transport
<b>Ministry of Transport &amp; Civil Aviation</b>	Storage and packing	Chemical expert and training in chemical management	Transport, use and storage capacities

## 10.3 ASSESSMENT

Overall, the authorities have departments to address issues such as chemical use and import regulations, but lack capacity in the form of experts in managing chemicals (i.e. concerns regarding hazardous waste disposal).

Assigning skilled chemical staff to specific departments is essential to strengthen the national chemical management capacity.

It is also necessary to mobilize and facilitate the necessary resources for the sound management of chemical waste.

THE MAJOR GAPS AND ISSUES IDENTIFIED IN THE CHAPTER ARE SUMMARIZED IN TABLE 43

**Table 43: Gaps, issues and recommendations identified in chapter 10**

GAPS	ISSUES	RECOMMENDATIONS
<b>Lack of human resource or technical capacity</b>	Lack of expertise in handling and disposing hazardous chemical waste	Assign staff skilled in chemical management
	Lacks enough staff trained in chemical management	Mobilize and facilitate necessary resources to manage chemical waste

**CHAPTER 11**

**AWARENESS/  
UNDERSTANDING OF  
WORKERS AND THE  
PUBLIC; AND  
TRAINING AND  
EDUCATION OF  
TARGET GROUPS AND  
PROFESSIONALS**

*Raising awareness on potential risks, safety and other aspects associated with chemicals is an important component of chemicals management. The dissemination of the existing legal instruments related to the management, safe handling, and use of chemicals for farmers, workers, and public at large has been rarely operated through mass media.*

**AWARENESS PROGRAMS ON  
CHEMICALS CONDUCTED BY  
HPA TO TARGET GROUPS AND  
PROFESSIONALS**

*The HPA has conducted awareness programs focusing on occupational health and safety, targeting various stakeholders. These awareness programs include;*

*Workshops on Occupational Health and Safety held in 2011 and 2013.*

*Training workshop for proper handling and safe management of chemicals for garage workers in Male' held in 2009.*

*Stakeholders' workshop on Occupational Health in Maldives held in 2008.*

**A GUIDE TO HEALTH AND SAFETY AT  
CONSTRUCTION SITES**

A handbook on occupational health and safety in the construction industry has been published by Maldives Association of Construction Industry (MACI) to assist all employers, workers and clients in the construction industry to help them meet the required standards. The guide recommends developing and implementing effective control measures and policies to ensure the safe handling of chemicals or hazardous substances, correct storage procedures, safe transportation procedures, and safe disposal procedures. The guide cautions workers involved in working with asbestos to wear respiratory protection.

**EDUCATION TO THE GENERAL  
PUBLIC**

Primary level education institutions in Maldives provide basic knowledge to students on good practices on environment management including waste management and chemical usage. The secondary level education provides three streams of options, either Business, Arts or Science stream. The science stream comprise of the subject Chemistry which involves sub units on chemical usage and management.

The first government tertiary institution in Maldives, Maldives National University (MNU), provides an undergraduate program in Environmental Management, which was initiated and funded by the Maldives Environment Management Project of the Ministry of Environment and Energy. This program offers studies in environmental chemistry and waste management including pollution prevention.

**11.1 ASSESSMENT**

Overall, the level of awareness among the workers and public regarding chemical safety issues remain low in general. With the absence of chemical production and related industries and also due to the small number of people working in the chemical related areas, it should not be too difficult to spread awareness to the direct workers and general public regarding chemical safety issues. However, the geographical distribution of the islands is a challenge to this regard. Another issue is the absence of research conducted on the contaminated sites regarding the level of impacts on ground water.

**SOME RECOMMENDATIONS ARE:**

*Carry out awareness and training programs targeting various stakeholders;*

*Provision of an environmentally friendly alternative for the current methods of disposal;*

*Research and surveys on the current level of usage of hazardous waste;*

*Research on health and environmental impacts of chemical use.*

THE MAJOR GAPS AND ISSUES IDENTIFIED IN THE CHAPTER ARE SUMMARIZED IN TABLE 44



**Table 44: Gaps, issues and recommendations identified in chapter 11**

GAPS	ISSUES	RECOMMENDATIONS
<b>Lack of research conducted on the contaminated sites regarding the level of impacts on ground water</b>	Low level of awareness among workers and public regarding chemical safety issues	Spread awareness among workers and the general public regarding chemical safety issues.
	Geographical distribution of islands is a challenge in spreading awareness	

## INTERNATIONAL LINKAGES

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*Maldives is a party to a number of international treaties, conventions, and agreements concerned with the management of chemicals. This chapter identifies those chemicals management stakeholders in Maldives, both within and outside of Government, that have linkages with international organizations or that participate in international agreements concerned with the management of chemicals.*

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### 12.1 CO-OPERATION AND INVOLVEMENT WITH INTERNATIONAL ORGANIZATIONS, BODIES AND AGREEMENTS.



MALDIVES IS SIGNATORY TO THE FOLLOWING CONVENTIONS DEALING WITH ENVIRONMENTAL CHEMICALS SAFETY. AN OVERVIEW IS PROVIDED IN TABLE 45.

**Table 45 Participation in international agreements/procedures related to chemicals management**

INTERNATIONAL AGREEMENTS	PRIMARY RESPONSIBLE AGENCY	DATE OF RATIFICATION	FOCAL POINTS
Globally harmonized system for the classification and labelling of chemicals - (GHS)	Maldives Customs Service		
OPCW Organization for the Prohibition of Chemical Weapons. -Chemicals Weapons Convention (same as Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction)	Ministry of Defence and National Security	1994	National Authority: Lieutenant Colonel Ibrahim Hilmy Designation: Principal Director Directorate of International Defence Cooperation, Ministry of Defence and National Security Tel. +960 3322161 Fax +960 3332689 E-mail intsec@defence.gov.mv  Permanent Representative: His Excellency Mr Ahmed Sareer Permanent Representative to the OPCW, Ambassador Extraordinary and Plenipotentiary Mailing Address: 800 Second Avenue, Suite 400 E NY 10017 New York, United States of America (the) Tel. + 1 212 599 61 95; +1 212 599 61 94 Fax + 1 212 661 6405 Email info@maldivesmission.com
The Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer	Ministry of Environment and Energy	Vienna Convention 1988 Montreal Protocol 1988	Name: Miruza Mohamed Designation: Director Institution: Ministry of Environment and Energy Postal address: Green Building, Handhuvarree Hingun, Maafannu 20392 Male Maldives Phone: + 960 3018 366 Fax: +960 3018 301 e-mail: miruza.mohamed@environment.gov.mv

Table 45 Participation in international agreements/procedures related to chemicals management

INTERNATIONAL AGREEMENTS	PRIMARY RESPONSIBLE AGENCY	DATE OF RATIFICATION	FOCAL POINTS
<p><b>Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade</b></p>	<p>Ministry of Environment and Energy</p>	<p>2006</p>	<p>Official Contact Point Name: Ms. Fazeela Ahmed Shaheem Designation: Legal Officer Institution: Ministry of Environment and Energy Postal address: Green Building, Handhuvaaree Hingun, Maafannu 20392 Male Maldives Phone: + 960 3018 370 Fax: +960 3018 301 Email: fazeela.shaheem@environment.gov.mv</p> <p>Designated National Authority Contact Point: Name: Ms. Fazeela Ahmed Shaheem Designation: Legal Officer Institution: Ministry of Environment and Energy Postal address: Green Building, Handhuvaaree Hingun, Maafannu 20392 Male Maldives Phone: + 960 3018 370 Fax: +960 3018 301 Email: fazeela.shaheem@environment.gov.mv</p>
<p><b>Stockholm Convention on Persistent Organic Pollutants (POPs)</b></p>	<p>Ministry of Environment and Energy</p>	<p>2006</p>	<p>National Focal Point Name: Ms. Fazeela Ahmed Shaheem Designation: Legal Officer Institution: Ministry of Environment and Energy Postal address: Green Building, Handhuvaaree Hingun, Maafannu 20392 Male Maldives Phone: + 960 3018 370 Fax: +960 3018 301 Email: fazeela.shaheem@environment.gov.mv</p> <p>Official contact Point: Name: Ms. Fazeela Ahmed Shaheem Designation: Legal Officer Institution: Ministry of Environment and Energy Postal address: Green Building, Handhuvaaree Hingun, Maafannu 20392 Male, Maldives Phone: + 960 3018 370 Fax: +960 3018 301 Email: fazeela.shaheem@environment.gov.mv</p>
<p><b>Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal</b></p>	<p>Ministry of Environment and Energy</p>	<p>1992</p>	<p>Competent Authority: Ministry of Environment and Energy Postal address: Green Building, Handhuvaaree Hingun, Maafannu 20392 Male Maldives Phone: + 960 3018 300 Fax: +960 3018 301 Email: fazeela.shaheem@environment.gov.mv</p> <p>Name: Ms. Fazeela Ahmed Shaheem Designation: Legal Officer Institution: Ministry of Environment and Energy Postal address: Green Building, Handhuvaaree Hingun, Maafannu 20392 Male Maldives Phone: + 960 3018 370 Fax: +960 3018 301 Email: fazeela.shaheem@environment.gov.mv</p>
<p><b>International Convention for the Prevention of Pollution from Ships (MARPOL Convention at IMO with annex 1 and 2) '73/'78</b></p>		<p>Ratified but has not enacted any enabling legislation to give effect to the Convention.</p>	

Table 45 Participation in international agreements/procedures related to chemicals management

INTERNATIONAL AGREEMENTS	PRIMARY RESPONSIBLE AGENCY	DATE OF RATIFICATION	FOCAL POINTS
International Convention for Safety of Life at Sea (SOLAS Convention at IMO) 74		Ratified but has not enacted any enabling legislation to give effect to the Convention.	
ILO Convention	Ministry of Human Resources, Youth and Sports	Joined in 2009	
United Nations Framework Convention on Climate Change and the Kyoto Protocol	Ministry of Environment and Energy	1998	
The Strategic Approach to International Chemicals Management (SAICM)	Ministry of Environment and Energy		Miruza Mohamed Designation: Director Institution: Ministry of Environment and Energy Postal address: Green Building, Handhuvaaree Hingun, Maafannu 20392 Male Maldives Phone: + 960 3018 366 Fax: +960 3018 301 e-mail: miruza.mohamed@environment.gov.mv
Single Convention on Narcotic Drugs, 1961, as amended by the Protocol Amending the Single Convention on the Narcotics Drugs			National Drug Agency
United Nations Convention on Psychotropic Substances		2000	National Drug Agency
United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances	Ministry of Defence and National Security	1989	Ministry of Defence and National Security

Maldives, being a party to the Montreal Protocol on Substances that Deplete the Ozone Layer, is obligated to phase out Ozone Depleting Substances (ODS) such as CFCs, Methyl Bromide, Halons and HCFCs. Maldives has successfully banned the import of CFCs since 2008, as well as Methyl Bromide, Bromochloromethane, Halons and Methylchloroform.

All refrigerant gases imported into the country are monitored through a licensing system coordinated by the Ministry of Environment and Energy and Maldives Customs Service. The next step for Maldives in achieving the Montreal Protocol goals is to phase out HCFCs.

The 'Male' Declaration on Control and Prevention of Air Pollution and Its Likely Transboundary Effects for South Asia' was adopted to cope with the issue of

transboundary air pollution in South Asia in 1998. The Male' Declaration Project is being implemented in eight countries (Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Sri Lanka and Pakistan). This regional instrument is developed for trans-boundary pollution prevention and control.

Furthermore, efforts have been undertaken at a global level to control mercury emissions with the Minamata Convention on Mercury. Mercury is a hazardous pollutant that has adverse environmental and neurological effects when released into the water and air. The Maldives intends to ratify the Convention.

Maldives participates in a number of international organizations, some of which are listed in Table 46 along with the year of membership.

SOME INTERNATIONAL AGREEMENTS REQUIRE NATIONAL CAPACITY IN THE AREAS SPECIFIED IN TABLE 47.

**Table 46: Maldives membership in selected international organizations**

INTERNATIONAL ORGANIZATION	YEAR
Global Environment Facility (GEF)	1994
United Nations Environment Programme (UNEP)	1972
World Trade Organization (WTO)	1995
South Asia Co-operative Environment Programme (SACEP)	1981
Food and Agriculture Organization (FAO)	1971
World Health Organization (WHO)	1965
International Maritime Organization (IMO)	1967
United Nations Development Programme (UNDP)	1965
United Nations Industrial Development Organization (UNIDO)	1988
World Organization for Animal Health (OIE)	2007
Islamic Development Bank (IDB)	1980
Asian Development Bank (ADB)	1978
International Fund for Agriculture Development (IFAD)	1980
International Monetary Fund (IMF)	1978
Economic and Social Commission for Asia and the Pacific (ESCAP)	1976
United Nations Population Fund (UNFPA)	1965
United Nations Children's Fund (UNICEF)	1971
International Development Association (IDA)	1978



Table 47: National capacity or requirements under international agreements

ISSUE	BASEL	STATUS	CWC	STATUS	FAO CODE	STATUS	ROTTERDAM	STATUS	STOCKHOLM	STATUS	VC/MP	STATUS
Focal points	+++	Yes	+	Yes			+++	Yes	+++	Yes		
Inter-ministerial Coordination												
Stakeholder Involvement									+++	Yes		
Resource Mobilization	++	-	+++	-					+++	Yes	+++	Yes
Technical assistance	+++	Yes	+++	Yes			+++	Yes	+++	Yes	+++	Yes
Training / Skills building	+	-							+++	Yes	+++	Yes
Technology transfer	+++	-							+++	n/a	+++	Yes
Development of alternatives			+	-			+++	-	+++	-	VC ++ MP +++	-
Evaluation of implementation	+	-	+++	Yes			+++	Yes	+++	n/a	+++	Yes
Capacity for chemical analysis/monitoring			+	-	++				+++	-		
Enforcement of regulations/decisions	+++	Yes	+++	Yes	++				+++	-	+++	Yes
Access to Justice												
Capacity for Rehabilitation Of Contaminated Sites and Poisoned persons					++				+++	-		
(G) Effective Education Programs	+	-	+	-					+++	Yes	+++	Yes
(H) Capacity to Respond to emergencies	++	-	+++	-								

Key: +++ Specific obligation, ++ Specific recommendations, + General reference

THE TABLE 48 LISTS SOME TECHNICAL ASSISTANCE CURRENTLY ONGOING AT A NATIONAL LEVEL, RELATED TO ASPECTS OF CHEMICAL MANAGEMENT.



**Table 48: Participation in relevant Technical Assistance Projects**

NAME OF PROJECT	INTERNATIONAL/BILATERAL DONOR AGENCY INVOLVED	RELEVANT ACTIVITIES
<b>Persistent Organic Pollutants</b>	GRF/UNIDO	Analysis, awareness and inventory reports.
<b>HCFC Phase-out Management Plan (HPMP)</b>	UNEP	Regulation, awareness, training and legislation reform
<b>National Chemical Profile Development National Chemical Database Development SAICM</b>	UNITAR	Preparation of chemical profile, Capacity assessment and priority objectives setting, Awareness

## 12.2 ASSESSMENT

Maldives participates in international agreements and conventions as well as in projects which provide technical and financial assistance. Such projects usually aim to build the national capacity. However, certain factors contribute to the impossibility of sustaining the projects targeted at aspects of chemical management. These include:

*Lack of political drive or motivation;*

*Delays in policy making and implementation of legislation;*

*Delays in signing and/or ratification of international conventions.*

THE MAJOR GAPS AND ISSUES IDENTIFIED IN THE CHAPTER ARE SUMMARIZED IN TABLE 49



**Table 49: Gaps, issues and recommendations identified in chapter 12**

GAPS	ISSUES	RECOMMENDATIONS
<b>Lack of political drive or motivation</b>	Inability to sustain international projects	
	Delays in policy-making and implementation of legislation	
	Delays in signing or ratification of international conventions	

## CONCLUSION

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The following are the main conclusions from the current analysis:

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### 1

Legal instruments to regulate import, storage, transport, use and disposal of chemicals of chemicals are lacking or inadequate. Existing laws and regulations (such as the Waste Management Regulation) are not fully implemented. This is partly due to lack of technical capacity and financial resources/skewed allocation of finances. Accelerating the enactment of laws is slow (such as the Chemical Regulation, draft Pesticides Bill) due to lack of commitment and responsibility in comprehending the real impacts of such laws.

### 2

There is a definite need to strengthen and improve the coordination among major governmental and non-governmental stakeholders. Lack of national coordination is the biggest problem resulting in duplication of efforts or unresolved and conflicting mandate issues regarding different aspects of chemical management.

### 3

Although the country has sufficient human resources, a lack of trained staff/technical capacity in areas of chemical management is still observed. Technical infrastructure, due to lack of equipment cannot examine more complex chemicals.

### 4

There is an absence and an urgent need for a program to develop an infrastructure for chemical waste collection and disposal.

### 5

There is a need for a national harmonized and structured information system on chemicals management. A lack of baseline data and research is also observed.

### 6

There is insufficient awareness among the policy makers, public and other stakeholders on chemical use impacts on human health and the environment, thus there is a great need for educational and awareness raising programs

### 7

There is an absence of facilities to respond to chemical accidents, for instance poison centers and hotlines. There is a need for emergency programs on poisoning as well as other emergency issues involving chemicals such as fires, explosions, etc.



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The Harmonized System (HS) Codes are developed by the World Customs Organization to assign specific HS Codes to the individual chemicals or groups of chemicals.

HS Codes are a common standard adopted worldwide, to describe the type of commodity. All commodities that enter or crosses most international borders have to be declared to customs by means of this code.

CHAPTER	ELEMENTS
Chapter 28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes
	<b>i. Chemical Elements</b>
	<b>01</b> Fluorine, chlorine, bromine and iodine
	<b>02</b> Sulphur, sublimed or precipitated; colloidal sulphur
	<b>03</b> Carbon (carbon blacks and other forms of carbon not elsewhere specified or included)
	<b>04</b> Hydrogen, rare gases and other non-metals
	<b>05</b> Alkali or alkaline-earth metals; rare-earth metals, scandium and yttrium, whether or not intermixed or interalloyed; mercury
	<b>ii. Inorganic acids and inorganic oxygen compounds of non-metals</b>
	<b>06</b> Hydrogen chloride (hydrochloric acid); chlorosulphuric acid
	<b>07</b> Sulphuric acid; oleum
	<b>08</b> Nitric acid; sulphonitric acids
	<b>09</b> Diphosphorus pentoxide; phosphoric acid; polyphosphoric acids, whether or not chemically defined
	<b>10</b> Oxides of boron; boric acids
	<b>iii. Halogen or sulphur compounds of non-metals</b>
	<b>12</b> Halides and halide oxides of non-metals
	<b>13</b> Sulphides of non-metals; commercial phosphorus trisulphide
	<b>iv. Inorganic bases and oxides, hydroxides and peroxides of metals</b>
	<b>14</b> Ammonia, anhydrous or in aqueous solution
	<b>15</b> Sodium hydroxide (caustic soda); potassium hydroxide (caustic potash); peroxides of sodium or potassium
	<b>16</b> Hydroxide and peroxide of magnesium; oxides, hydroxides and peroxides, of strontium or barium
	<b>17</b> Zinc oxide; zinc peroxide
	<b>18</b> Artificial corundum, whether or not chemically defined; aluminium oxide; aluminium hydroxide
	<b>19</b> Chromium oxides and hydroxides

CHAPTER	ELEMENTS
	<b>20</b> Manganese oxides
	<b>21</b> Iron oxides and hydroxides; earth colours containing 70 % or more by weight of combined iron evaluated as Fe <sub>2</sub> O <sub>3</sub>
	<b>22</b> Cobalt oxides and hydroxides; commercial cobalt oxides
	<b>23</b> Titanium oxides
	<b>24</b> Lead oxides; red lead and orange lead
	<b>25</b> Hydrazine and hydroxylamine and their inorganic salts; other inorganic bases; other metal oxides, hydroxides and peroxides
	<b>V. Salts and peroxy salts, of inorganic acids and metals</b>
	<b>26</b> Fluorides; fluorosilicates, fluoroaluminates and other complex fluorine salts
	<b>27</b> Chlorides, chloride oxides and chloride hydroxides; bromides and bromide oxides; iodides and iodide oxides
	<b>28</b> Hypochlorites; commercial calcium hypochlorite; chlorites; hypobromites
	<b>29</b> Chlorates and perchlorates; bromates and perbromates; iodates and periodates
	<b>30</b> Sulphides; polysulphides, whether or not chemically defined
	<b>31</b> Dithionites and sulphonylates
	<b>32</b> Sulphites; thiosulphates
	<b>33</b> Sulphates; alums; peroxosulphates (persulphates)
	<b>34</b> Nitrites; nitrates
	<b>35</b> Phosphinates (hypophosphites), phosphonates (phosphites) and phosphates; polyphosphates, whether or not chemically defined
	<b>36</b> Carbonates; peroxocarbonates (percarbonates); commercial ammonium carbonate containing ammonium carbamate
	<b>37</b> Cyanides, cyanide oxides and complex cyanides
	<b>39</b> Silicates; commercial alkali metal silicates
	<b>40</b> Borates; peroxoborates (perborates)
	<b>41</b> Salts of oxometallic or peroxometallic acids
	<b>42</b> Other salts of inorganic acids or peroxyacids (including aluminosilicates whether or not chemically defined), other than azides
	<b>Vi. Miscellaneous</b>
	<b>43</b> Colloidal precious metals; inorganic or organic compounds of precious metals, whether or not chemically defined; amalgams of precious metals
	<b>44</b> Radioactive chemical elements and radioactive isotopes (including the fissile or fertile chemical elements and isotopes) and their compounds; mixtures and residues containing these products
	<b>45</b> Isotopes other than those of heading 2844; compounds, inorganic or organic, of such isotopes, whether or not chemically defined
	<b>46</b> Compounds, inorganic or organic, of rare-earth metals, of yttrium or of scandium or of mixtures of these metals
	<b>47</b> Hydrogen peroxide, whether or not solidified with urea
	<b>48</b> Phosphides, whether or not chemically defined, excluding ferrophosphorus
	<b>49</b> Carbides, whether or not chemically defined
	<b>50</b> Hydrides, nitrides, azides, silicides and borides, whether or not chemically defined, other than compounds which are also carbides of heading 2849
	<b>52</b> Inorganic or organic compounds of mercury, whether or not chemically defined, excluding amalgams
	<b>53</b> Other inorganic compounds (including distilled or conductivity water and water of similar purity); liquid air (whether or not rare gases have been removed); compressed air; amalgams, other than amalgams of precious metals

CHAPTER	ELEMENTS
Chapter 29	<b>Organic chemicals</b>
	<b>I. Hydrocarbons and their halogenated, sulphonated, nitrated or nitrosated derivatives</b>
	01 Acyclic hydrocarbons
	02 Cyclic hydrocarbons
	03 Halogenated derivatives of hydrocarbons
	04 Sulphonated, nitrated or nitrosated derivatives of hydrocarbons, whether or not halogenated
	II. Alcohols and their halogenated, sulphonated, nitrated or nitrosated derivatives
	05 Acyclic alcohols and their halogenated, sulphonated, nitrated or nitrosated derivatives
	06 Cyclic alcohols and their halogenated, sulphonated, nitrated or nitrosated derivatives
	III. Phenols, phenol-alcohols, and their halogenated, sulphonated, nitrated or nitrosated derivatives
	07 Phenols; phenol-alcohols
	08 Halogenated, sulphonated, nitrated or nitrosated derivatives of phenols or phenol-alcohols
	<b>IV. Ethers, alcohol peroxides, ether peroxides, ketone peroxides, epoxides with a three-membered ring, acetals and Whemi-acetals, and their halogenated, sulphonated, nitrated or nitrosated derivatives</b>
	09 Ethers, ether-alcohols, ether-phenols, ether-alcohol-phenols, alcohol peroxides, ether peroxides, ketone peroxides (whether or not chemically defined), and their halogenated, sulphonated, nitrated or nitrosated derivatives
	10 Epoxides, epoxyalcohols, epoxyphenols and epoxyethers, with a three-membered ring, and their halogenated, sulphonated, nitrated or nitrosated derivatives
	11 Acetals and hemiacetals, whether or not with other oxygen function, and their halogenated, sulphonated, nitrated or nitrosated derivatives
	<b>V. Aldehyde-function compounds</b>
	12 Aldehydes, whether or not with other oxygen function; cyclic polymers of aldehydes; paraformaldehyde
	13 Halogenated, sulphonated, nitrated or nitrosated derivatives of products of heading 2912
	<b>VI. Ketone-function compounds and quinone-function compounds</b>
14 Ketones and quinones, whether or not with other oxygen function, and their halogenated, sulphonated, nitrated or nitrosated derivatives	
<b>VII. Carboxylic acids and their anhydrides, halides, peroxides and peroxyacids and their halogenated, sulphonated, nitrated or nitrosated derivatives</b>	
15 Saturated acyclic monocarboxylic acids and their anhydrides, halides, peroxides and peroxyacids; their halogenated, sulphonated, nitrated or nitrosated derivatives	
16 Unsaturated acyclic monocarboxylic acids, cyclic monocarboxylic acids, their anhydrides, halides, peroxides and peroxyacids; their halogenated, sulphonated, nitrated or nitrosated derivatives	
17 Polycarboxylic acids, their anhydrides, halides, peroxides and peroxyacids; their halogenated, sulphonated, nitrated or nitrosated derivatives	
18 Carboxylic acids with additional oxygen function and their anhydrides, halides, peroxides and peroxyacids; their halogenated, sulphonated, nitrated or nitrosated derivatives	
<b>VIII. Esters of inorganic acids of non-metals and their salts, and their halogenated, sulphonated, nitrated or nitrosated derivatives</b>	
19 Phosphoric esters and their salts, including lactophosphates; their halogenated, sulphonated, nitrated or nitrosated derivatives	
20 Esters of other inorganic acids of non-metals (excluding esters of hydrogen halides) and their salts; their halogenated, sulphonated, nitrated or nitrosated derivatives	

CHAPTER	ELEMENTS
	<p><b>IX. Nitrogen-function compounds</b></p> <p><b>21</b> Amine-function compounds</p> <p><b>22</b> Oxygen-function amino-compounds</p> <p><b>23</b> Quaternary ammonium salts and hydroxides; lecithins and other phosphoaminolipids, whether or not chemically defined</p> <p><b>24</b> Carboxamide-function compounds; amide-function compounds of carbonic acid</p> <p><b>25</b> Carboxyimide-function compounds (including saccharin and its salts) and imine-function compounds</p> <p><b>26</b> Nitrile-function compounds</p> <p><b>27</b> Diazo-, azo- or azoxy-compounds</p> <p><b>28</b> Organic derivatives of hydrazine or of hydroxylamine</p> <p><b>29</b> Compounds with other nitrogen function</p> <p><b>X. Organo-inorganic compounds, heterocyclic compounds, nucleic acids and their salts, and sulphonamides</b></p> <p><b>30</b> Organo-sulphur compounds</p> <p><b>31</b> Other organo-inorganic compounds</p> <p><b>32</b> Heterocyclic compounds with oxygen hetero-atom(s) only</p> <p><b>33</b> Heterocyclic compounds with nitrogen hetero-atom(s) only</p> <p><b>34</b> Nucleic acids and their salts, whether or not chemically defined; other heterocyclic compounds</p> <p><b>35</b> Sulphonamides</p> <p><b>XI. Provitamins, vitamins and hormones</b></p> <p><b>36</b> Provitamins and vitamins, natural or reproduced by synthesis (including natural concentrates), derivatives thereof used primarily as vitamins, and intermixtures of the foregoing, whether or not in any solvent</p> <p><b>37</b> Hormones, prostaglandins, thromboxanes and leukotrienes, natural or reproduced by synthesis; derivatives and structural analogues thereof, including chain modified polypeptides, used primarily as hormones</p> <p><b>XII. Glycosides and vegetable alkaloids, natural or reproduced by synthesis, and their salts, ethers, esters and other derivatives</b></p> <p><b>38</b> Glycosides, natural or reproduced by synthesis, and their salts, ethers, esters and other derivatives</p> <p><b>39</b> Vegetable alkaloids, natural or reproduced by synthesis, and their salts, ethers, esters and other derivatives</p> <p><b>XIII. Other organic compounds</b></p> <p><b>40</b> Sugars, chemically pure, other than sucrose, lactose, maltose, glucose and fructose; sugar ethers, sugar acetals and sugar esters, and their salts, other than products of heading 2937, 2938 or 2939</p> <p><b>41</b> Antibiotics</p> <p><b>42</b> Other organic compounds</p>
Chapter 30	<p><b>Pharmaceutical products</b></p> <p><b>01</b> Glands and other organs for organo-therapeutic uses, dried, whether or not powdered; extracts of glands or other organs or of their secretions for organo-therapeutic uses; heparin and its salts; other human or animal substances prepared for therapeutic or prophylactic uses, not elsewhere specified or included</p> <p><b>02</b> Human blood; animal blood prepared for therapeutic, prophylactic or diagnostic uses; antisera, other blood fractions and immunological products, whether or not modified or obtained by means of biotechnological processes; vaccines, toxins, cultures of micro-organisms (excluding yeasts) and similar products</p> <p><b>03</b> Medicaments (excluding goods of heading 3002, 3005 or 3006) consisting of two or more constituents which have been mixed together for therapeutic or prophylactic uses, not put up in measured doses or in forms or packings for retail sale</p>

CHAPTER	ELEMENTS
	<p><b>04</b> Medicaments (excluding goods of heading 3002, 3005 or 3006) consisting of mixed or unmixed products for therapeutic or prophylactic uses, put up in measured doses (including those in the form of transdermal administration systems) or in forms or packings for retail sale</p> <p><b>05</b> Wadding, gauze, bandages and similar articles (for example, dressings, adhesive plasters, poultices), impregnated or coated with pharmaceutical substances or put up in forms or packings for retail sale for medical, surgical, dental or veterinary purposes</p> <p><b>06</b> Pharmaceutical goods specified in note 4 to this chapter</p>
Chapter 31	<p><b>Fertilizers</b></p> <p><b>01</b> Animal or vegetable fertilisers, whether or not mixed together or chemically treated; fertilisers produced by the mixing or chemical treatment of animal or vegetable products</p> <p><b>02</b> Mineral or chemical fertilisers, nitrogenous</p> <p><b>03</b> Mineral or chemical fertilisers, phosphatic</p> <p><b>04</b> Mineral or chemical fertilisers, potassic</p> <p><b>05</b> Mineral or chemical fertilisers containing two or three of the fertilising elements nitrogen, phosphorus and potassium; other fertilisers; goods of this chapter in tablets or similar forms or in packages of a gross weight not exceeding 10 kg</p>
Chapter 32	<p><b>Tanning or dyeing extracts; dyes, pigments, paints, varnishes, putty and mastics</b></p> <p><b>01</b> Tanning extracts of vegetable origin; tannins and their salts, ethers, esters and other derivatives</p> <p><b>02</b> Synthetic organic tanning substances; inorganic tanning substances; tanning preparations, whether or not containing natural tanning substances; enzymatic preparations for pre-tanning</p> <p><b>03</b> Colouring matter of vegetable or animal origin (including dyeing extracts but excluding animal black), whether or not chemically defined; preparations as specified in note 3 to this chapter based on colouring matter of vegetable or animal origin</p> <p><b>04</b> Synthetic organic colouring matter, whether or not chemically defined; preparations as specified in note 3 to this chapter based on synthetic organic colouring matter; synthetic organic products of a kind used as fluorescent brightening agents or as luminophores, whether or not chemically defined</p> <p><b>05</b> Colour lakes; preparations as specified in note 3 to this chapter based on colour lakes</p> <p><b>06</b> Other colouring matter; preparations as specified in note 3 to this chapter, other than those of heading 3203, 3204 or 3205; inorganic products of a kind used as luminophores, whether or not chemically defined</p> <p><b>07</b> Prepared pigments, prepared opacifiers and prepared colours, vitrifiable enamels and glazes, engobes (slips), liquid lustres and similar preparations, of a kind used in the ceramic, enamelling or glass industry; glass frit and other glass, in the form of powder, granules or flakes</p> <p><b>08</b> Paints and varnishes (including enamels and lacquers) based on synthetic polymers or chemically modified natural polymers, dispersed or dissolved in a non-aqueous medium; solutions as defined in note 4 to this chapter</p> <p><b>09</b> Paints and varnishes (including enamels and lacquers) based on synthetic polymers or chemically modified natural polymers, dispersed or dissolved in an aqueous medium</p> <p><b>10</b> Other paints and varnishes (including enamels, lacquers and distempers); prepared water pigments of a kind used for finishing leather</p> <p><b>11</b> Prepared driers</p> <p><b>12</b> Pigments (including metallic powders and flakes) dispersed in non-aqueous media, in liquid or paste form, of a kind used in the manufacture of paints (including enamels); stamping foils; dyes and other colouring matter put up in forms or packings for retail sale</p> <p><b>13</b> Artists', students' or signboard painters' colours, modifying tints, amusement colours and the like, in tablets, tubes, jars, bottles, pans or in similar forms or packings</p> <p><b>14</b> Glaziers' putty, grafting putty, resin cements, caulking compounds and other mastics; painters' fillings; non-refractory surfacing preparations for façades, indoor walls, floors, ceilings or the like</p> <p><b>15</b> Printing ink, writing or drawing ink and other inks, whether or not concentrated or solid</p>

CHAPTER	ELEMENTS
Chapter 33	<p><b>Essential oils and resinoids; perfumery, cosmetic or toilet preparations</b></p> <p><b>01</b> Essential oils (terpeneless or not), including concretes and absolutes; resinoids; extracted oleoresins; concentrates of essential oils in fats, in fixed oils, in waxes or the like, obtained by enfleurage or maceration; terpenic by-products of the deterpenation of essential oils; aqueous distillates and aqueous solutions of essential oils</p> <p><b>02</b> Mixtures of odoriferous substances and mixtures (including alcoholic solutions) with a basis of one or more of these substances, of a kind used as raw materials in industry; other preparations based on odoriferous substances, of a kind used for the manufacture of beverages</p> <p><b>03</b> Perfumes and toilet waters</p> <p><b>04</b> Beauty or make-up preparations and preparations for the care of the skin (other than medicaments), including sun-screen or suntan preparations; manicure or pedicure preparations</p> <p><b>05</b> Preparations for use on the hair</p> <p><b>06</b> Preparations for oral or dental hygiene, including denture fixative pastes and powders; yarn used to clean between the teeth (dental floss), in individual retail packages</p> <p><b>07</b> Pre-shave, shaving or aftershave preparations, personal deodorants, bath preparations, depilatories and other perfumery, cosmetic or toilet preparations, not elsewhere specified or included; prepared room deodorisers, whether or not perfumed or having disinfectant properties</p>
Chapter 34	<p><b>Soap, organic surface-active agents, washing preparations, lubricating preparations, artificial waxes, prepared waxes, polishing or scouring preparations, candles and similar articles, modeling pastes, "dental waxes" and dental preparations with a basis of plaster</b></p> <p><b>01</b> Soap; organic surface-active products and preparations for use as soap, in the form of bars, cakes, moulded pieces or shapes, whether or not containing soap; organic surface-active products and preparations for washing the skin, in the form of liquid or cream and put up for retail sale, whether or not containing soap; paper, wadding, felt and nonwovens, impregnated, coated or covered with soap or detergent</p> <p><b>02</b> Organic surface-active agents (other than soap); surface-active preparations, washing preparations (including auxiliary washing preparations) and cleaning preparations, whether or not containing soap, other than those of heading 3401</p> <p><b>03</b> Lubricating preparations (including cutting-oil preparations, bolt or nut release preparations, anti-rust or anti-corrosion preparations and mould-release preparations, based on lubricants) and preparations of a kind used for the oil or grease treatment of textile materials, leather, furskins or other materials, but excluding preparations containing, as basic constituents, 70 % or more by weight of petroleum oils or of oils obtained from bituminous minerals</p> <p><b>04</b> Artificial waxes and prepared waxes</p> <p><b>05</b> Polishes and creams, for footwear, furniture, floors, coachwork, glass or metal, scouring pastes and powders and similar preparations (whether or not in the form of paper, wadding, felt, nonwovens, cellular plastics or cellular rubber, impregnated, coated or covered with such preparations), excluding waxes of heading 3404</p> <p><b>06</b> Candles, tapers and the like</p> <p><b>07</b> Modelling pastes, including those put up for children's amusement; preparations known as 'dental wax' or as 'dental impression compounds', put up in sets, in packings for retail sale or in plates, horseshoe shapes, sticks or similar forms; other preparations for use in dentistry, with a basis of plaster (of calcined gypsum or calcium sulphate)</p>
Chapter 35	<p><b>Albuminoidal substances; modified starches; glues; enzymes</b></p> <p><b>01</b> Casein, caseinates and other casein derivatives; casein glues</p> <p>Albumins (including concentrates of two or more whey proteins, containing by weight more than 80 % whey proteins, calculated on the dry matter), albuminates and other albumin derivatives</p> <p><b>03</b> Gelatin (including gelatin in rectangular (including square) sheets, whether or not surface-worked or coloured) and gelatin derivatives; isinglass; other glues of animal origin, excluding casein glues of heading 3501</p> <p><b>04</b> Peptones and their derivatives; other protein substances and their derivatives, not elsewhere specified or included; hide powder, whether or not chromed</p> <p><b>05</b> Dextrins and other modified starches (for example, pregelatinised or esterified starches); glues based on starches, or on dextrins or other modified starches</p> <p><b>06</b> Prepared glues and other prepared adhesives, not elsewhere specified or included; products suitable for use as glues or adhesives, put up for retail sale as glues or adhesives, not exceeding a net weight of 1 kg</p>

CHAPTER	ELEMENTS
Chapter 36	<p><b>07</b> Enzymes; prepared enzymes not elsewhere specified or included</p> <p><b>Albuminoidal substances; modified starches; glues; enzymes</b></p> <p><b>01</b> Casein, caseinates and other casein derivatives; casein glues</p> <p>Albumins (including concentrates of two or more whey proteins, containing by weight more than 80 % whey proteins, calculated on the dry matter), albuminates and other albumin derivatives</p> <p><b>03</b> Gelatin (including gelatin in rectangular (including square) sheets, whether or not surface-worked or coloured) and gelatin derivatives; isinglass; other glues of animal origin, excluding casein glues of heading 3501</p> <p><b>04</b> Peptones and their derivatives; other protein substances and their derivatives, not elsewhere specified or included; hide powder, whether or not chromed</p> <p><b>05</b> Dextrins and other modified starches (for example, pregelatinised or esterified starches); glues based on starches, or on dextrins or other modified starches</p> <p><b>06</b> Prepared glues and other prepared adhesives, not elsewhere specified or included; products suitable for use as glues or adhesives, put up for retail sale as glues or adhesives, not exceeding a net weight of 1 kg</p> <p><b>07</b> Enzymes; prepared enzymes not elsewhere specified or included</p>
Chapter 37	<p><b>Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations</b></p> <p><b>01</b> Propellant powders</p> <p><b>02</b> Prepared explosives, other than propellant powders</p> <p><b>03</b> Safety fuses; detonating fuses; percussion or detonating caps; igniters; electric detonators</p> <p><b>04</b> Fireworks, signalling flares, rain rockets, fog signals and other pyrotechnic articles</p> <p><b>05</b> Matches, other than pyrotechnic articles of heading 3604</p> <p><b>06</b> Ferro-cerium and other pyrophoric alloys in all forms; articles of combustible materials as specified in note 2 to this chapter</p>
Chapter 38	<p><b>Photographic or cinematographic goods</b></p> <p><b>01</b> Photographic plates and film in the flat, sensitised, unexposed, of any material other than paper, paperboard or textiles; instant print film in the flat, sensitised, unexposed, whether or not in packs</p> <p><b>02</b> Photographic film in rolls, sensitised, unexposed, of any material other than paper, paperboard or textiles; instant print film in rolls, sensitised, unexposed</p> <p><b>03</b> Photographic paper, paperboard and textiles, sensitised, unexposed</p> <p><b>04</b> Photographic plates, film, paper, paperboard and textiles, exposed but not developed</p> <p><b>05</b> Photographic plates and film, exposed and developed, other than cinematographic film</p> <p><b>06</b> Cinematographic film, exposed and developed, whether or not incorporating soundtrack or consisting only of soundtrack</p> <p><b>07</b> Chemical preparations for photographic uses (other than varnishes, glues, adhesives and similar preparations); un-mixed products for photographic uses, put up in measured portions or put up for retail sale in a form ready for use</p> <p><b>08</b> Insecticides, rodenticides, fungicides, herbicides, anti-sprouting products and plant-growth regulators, disinfectants and similar products, put up in forms or packings for retail sale or as preparations or articles (for example, sulphur-treated bands, wicks and candles, and fly-papers)</p> <p><b>09</b> Finishing agents, dye carriers to accelerate the dyeing or fixing of dyestuffs and other products and preparations (for example, dressings and mordants), of a kind used in the textile, paper, leather or like industries, not elsewhere specified or included</p> <p><b>10</b> Pickling preparations for metal surfaces; fluxes and other auxiliary preparations for soldering, brazing or welding; soldering, brazing or welding powders and pastes consisting of metal and other materials; preparations of a kind used as cores or coatings for welding electrodes or rods</p> <p><b>11</b> Anti-knock preparations, oxidation inhibitors, gum inhibitors, viscosity improvers, anti-corrosive preparations and other prepared additives, for mineral oils (including gasoline) or for other liquids used for the same purposes as mineral oils</p>



CHAPTER	ELEMENTS
	<b>12</b> Prepared rubber accelerators; compound plasticisers for rubber or plastics, not elsewhere specified or included; anti-oxidising preparations and other compound stabilisers for rubber or plastics
	<b>13</b> Preparations and charges for fire-extinguishers; charged fire-extinguishing grenades
	<b>14</b> Organic composite solvents and thinners, not elsewhere specified or included; prepared paint or varnish removers
	<b>15</b> Reaction initiators, reaction accelerators and catalytic preparations, not elsewhere specified or included
	<b>16</b> Refractory cements, mortars, concretes and similar compositions, other than products of heading 3801
	<b>17</b> Mixed alkylbenzenes and mixed alkyl-naphthalenes, other than those of heading 2707 or 2902
	<b>18</b> Chemical elements doped for use in electronics, in the form of discs, wafers or similar forms; chemical compounds doped for use in electronics
	<b>19</b> Hydraulic brake fluids and other prepared liquids for hydraulic transmission, not containing or containing less than 70 % by weight of petroleum oils or oils obtained from bituminous minerals
	<b>20</b> Anti-freezing preparations and prepared de-icing fluids
	<b>21</b> Prepared culture media for the development or maintenance of micro-organisms (including viruses and the like) or of plant, human or animal cells
	<b>22</b> Diagnostic or laboratory reagents on a backing, prepared diagnostic or laboratory reagents whether or not on a backing, other than those of heading 3002 or 3006; certified reference materials
	<b>23</b> Industrial monocarboxylic fatty acids; acid oils from refining; industrial fatty alcohols
	<b>24</b> Prepared binders for foundry moulds or cores; chemical products and preparations of the chemical or allied industries (including those consisting of mixtures of natural products), not elsewhere specified or included
	<b>25</b> Residual products of the chemical or allied industries, not elsewhere specified or included; municipal waste; sewage sludge; other wastes specified in note 6 to this chapter
	<b>26</b> Biodiesel and mixtures thereof, not containing or containing less than 70 % by weight of petroleum oils or oils obtained from bituminous minerals

Translation of chemical warehouse standards set by the Ministry of Defence and National Security.

**1**

Warehouse doors must be fire-resistant for at least ½ hour.

**2**

Warehouse must be properly ventilated with exhaust fans directed at the top of the building, with its controls easily accessible from the outside.

**3**

Current wiring of the warehouse must be used with BS 6099/BSEN 55086 or at globally accepted equivalent standard conduit pipes.

**4**

All control switches must be placed outside the warehouse.

**5**

Fire exits must be strategically placed so as to directly exit oneself out of the warehouse.

**6**

Warehouse ceiling must be made of gypsum board or cement board.

**7**

Sufficient space for movement must be allocated between every 2 cupboards/racks, and all walkways must be clear of any obstacles.

**8**

Extremely hazardous chemicals should be stored separately in a metal cupboard/safe.

**9**

Chemical categories (fire hazards, explosive hazards, multi-fuel hazards) must be stored separately and accordingly.

**10**

Other types of goods are not allowed to be stored in chemical warehouses.

**11**

A pre-specified amount and type of fire extinguishers must be placed.

**12**

If partitions are placed, they must be made of material that are fire resistant for at least 1 ½ hours.

list of chemicals (for agricultural use) set by the Ministry of Fisheries and Agriculture, which can be imported into the country.

COMMON NAME	TRADE NAME	CHEMICAL CATEGORY	TOXICITY CLASS
Acephate	Herthene, ORthene, Surrender SP	Insecticide	II
Acetamiprid	Mospilan, DhanPreet SP	Insecticide	II
Azadirachtin	Azatin, Neemoil, Azamax EC	Insecticide	EPA IV
Azamethiphos	Zazaflly, Alfacron	Insecticide	III
Beta-cyfluthrin	Bulldock, responser	Insecticide	II
Beta-cypermethrin	Chinmix, Cyperil	Insecticide	II
Carbosulfan	Marshal	Insecticide	II
Cartap hydrochloride	Fast, Padan	Insecticide	II
Chlorfluazuron	Atabron, Helix	Insecticide	III
Chlorpyrifos	Rider, Cyren 40, Dursban, ChlorpyrifosEC, ElephantEC, LorsbanEC, Patta-sEC, JudoEC, DecaEC	Insecticide	II
Cyfluthrin	Baythroid, Solfac	Insecticide	II
Cypermethrin	Cybil, Cymbush, Ripcord, CyperguardEC, White Gold EC, Bentacide EC	Insecticide	II
Delatamethrin	Spark, Decis, Butox, Residex EC	Insecticide	II
Dimetilan	Snip	Insecticide	IV
Esfenvalerate	Asana, Sumi-alpha	Insecticide	II
Etofenoprox	Trebon	Insecticide	III
Fenobucarb	BPMC, Bassa, Osbac	Insecticide	II
Fenthion	Lebaycid, Baytex, FentexEC, Vanish EC	Insecticide	
Hydramethylnon	Siege, Combat, Maxforce	Insecticide	
Imidacloprid	Admire, Confidor, Gaucho, VegaraSL, Quickbayt, ImidolSL, Imidacloprid-SC, KohinoorSL, ProvadoWG, QuickBait, Gaucho WG GR, Inidan SL	Insecticide	
Indoxacarb	Avaunt	Insecticide	II
Permethrin	Ambush, Coopex, Dragon	Insecticide	II
Phenothrin	Sumithrin	Insecticide	V
Phoxim	Baythion, Volaton	Insecticide	V
Propoxur	Baygon, Unden	Insecticide	II
Prothiophos	Tokuthion		II
S-bioallethrin	Esbiol		III
Tebufenozide	Mimic	Insecticide	III
Temephos	Abate	Insecticide	V
Tetramethrin	Neo-Pynamin Omnicide, PermexME, DeadynaEC, Biotrin EC	Insecticide	V
Thiamethoxam	Actara, Agita WG	Insecticide	II
Trichlorfon	Dipterex, Cekufon, Danex	Insecticide	II
Vegetable oil	White summer oil	Insecticide	III
Flubendiamide	Fame SL, Takumi WG	Insecticide	
Trichlorfon	Dipterex LC	Insecticide	

COMMON NAME	TRADE NAME	CHEMICAL CATEGORY	TOXICITY CLASS
<b>Fenitrothion</b>	Sumithion CS	Insecticide	
<b>Thiocyclam</b>	Evisect WP	Insecticide	
<b>Boric Acid</b>	Cockroach killer RB, HosanDangoKonkuGokin Jan	Insecticide	
<b>Spinetoram</b>	Endure SC	Insecticide	
<b>Propamocarb + Fosetyl</b>	Previcur SL	Insecticide	
<b>Spinosad 2.5%</b>	Success SC	Insecticide	
<b>d-d-T Cyphenothrine</b>	Gokirato	Insecticide	
<b>D-Phenothrin</b>	Sumithrin EC	Insecticide	
<b>Alphacypermethrin</b>	Tenopa SC	Insecticide	
<b>Citronella oil</b>	Massaup Insect	Insecticide	
<b>Difenacoum</b>	FentrolRB, Roban Wax blocks RB	Insecticide	
<b>Oxymethoxam</b>	Agita WG	Insecticide	
<b>Pyriproxyfen</b>	Sumilarv	Insecticide	
<b>Alanycarb</b>	Orion EC	Insecticide	
<b>Aluminium Phosphide</b>	Phostoxin TB	Insecticide	
<b>Abamectin, AvermectinB1</b>	Zoro, Dynamic, MigEC, JEtEC, MAsket EC	Insecticide/ Acaricide	IV
<b>Bifenthrin</b>	Bista, Talstar	Insecticide/ Acaricide	II
<b>Buprofezin</b>	Applaud	Insecticide/ Acaricide	V
<b>Diazinon</b>	Diodin, Basudin, Diazol	Insecticide/ Acaricide	II
<b>Dimethoate</b>	Terbo, Rogor, Perfekthion, DimethoateEC, Tafgor EC	Insecticide/ Acaricide	II
<b>Ethion</b>	Commando, Cethion, Ethiol	Insecticide/ Acaricide	II
<b>Fenvalerate</b>	Sumicidine	Insecticide/ Acaricide	II
<b>Fipronil</b>	Regent	Insecticide/ Acaricide	II
<b>Formothion</b>	Anthio	Insecticide/ Acaricide	II
<b>Lufenuron</b>	Match	Insecticide/ Acaricide	III
<b>Malathion</b>	Newmala, Celthion, Malatox	Insecticide/ Acaricide	III
<b>Phenthoate</b>	Leader, Cidial, Paphthion	Insecticide/ Acaricide	II
<b>Pirimiphos-methyl</b>	Actellic	Insecticide/ Acaricide	III
<b>Profenofos</b>	Calcron, Selecron, Curacron	Insecticide/ Acaricide	II
<b>Pyrethrins</b>	Pynosect, Alfadex, Pycon, Hortico insect killer, Pyrethrum, Giaguar flies, Foval CE	Insecticide/ Acaricide	II
<b>Quinalphos</b>	Ekalux	Insecticide/ Acaricide	II
<b>Carbaryl</b>	Win, Sevin, Savit, Kevin WP	Insecticide/ Plant growth regulator	II
<b>Piperonylbutaoxide</b>	Butacide, Pybuthrin	Insecticide/ Synergist	EPA IV
<b>Dazomet</b>	Basamid Granular	Insecticide/ Nematicide/ Fungicide/ Herbicide	III
<b>Dicofol</b>	Kelthane	Acaricide	III

COMMON NAME	TRADE NAME	CHEMICAL CATEGORY	TOXICITY CLASS
Hexythiazox	Nissorun, Cesar, Zeldox	Acaricide	V
Sodium borate	Borax	Insecticide/ Fungicide/ Herbicide	V
Sulphur	Kumulus, Maksul, Thiovit, HaymiteDF, SupramaxWP, Mitex WP	Acaricide/ Fungicide	V
Aluminium Sulphate	Alum	Molluscicides	V
Metaldehyd	Meta powder		III
Brodifacoum	Klerat wax block, BrodyGrain, BrodyFlakes, Mortein Rat Kill RB	Rodenticides	Ia
Bromadiolone	Ratox, Ratibrom – 2 Fresh Bait, Ratibrom -2 Grain, SED – R		Ia
Coumatetralyl	Recumin, Recumin ready bait RB, Recumin Paste 0.0375PA, Coumarac W/W		Ib
Difenacoum	Roban, FentrolRB, Roban Wax blocks RB		Ia
Wafarin	Ratsak double Strength		Ib
Flocoumafen	Storm		Ia
Alpha Chloralose	Alfamat, Aphosal, Murex	Rodenticide/ Bird Repellent	II
Polybutene	Hot Foot Bird Repellent	Rodenticide/ Bird Repellent	
Benomyl	Benlate	Fungicide	III
Bordeaux mixture	Poltigila	Fungicide	III
Captan	Captan	Fungicide	V
Carbendazim	Bullet, HO-Guard WP, CarbezimWP, BavistinWP, Crop guard WP	Fungicide	III
Chlorothalonil	Daconil, Kavach WP	Fungicide	V
Copper oxychloride 500g/kg	Cobox, HelmoxyWP, Hortico Tomato dust WP	Fungicide	III
Cuprous oxide	Perenox	Fungicide	II
Cymoxanil	Curzate	Fungicide	III
Difenoconazole	Score	Fungicide	III
Dodine	Dodene	Fungicide	III
Folpet	Folpane	Fungicide	V
Isoprothiolane	Fuji-One	Fungicide	III
Mancozeb	Dithane M-45, Marco WP, Mancozeb WP	Fungicide	V
Maneb	Dithane M-22	Fungicide	V
Metalaxyl	Ridomil	Fungicide	III
Propineb	Antracol	Fungicide	V
Tebuconazole	Folicur	Fungicide	III
Thiram	Pomarsolfort, CGThiramWP, Canker WG	Fungicide	III
Trichodermaviride	Bioderma	Fungicide	V
Trifloxystrobin	Flint	Fungicide	V
Copper Sulphate 300g/kg	Vitax WP	Fungicide	
Iprodione	Rovral WP	Fungicide	

COMMON NAME	TRADE NAME	CHEMICAL CATEGORY	TOXICITY CLASS
Cyprodinil & Fludioxonil	Switch	Fungicide	
Chlorothalonil	Kavach WP	Fungicide	
Formaldehyde	Formaldehyde	Fungicide/Bactericide	II
Copper Sulphate	Copper Sulphate	Fungicide/ Algicide	II
Copper Hydroxide	Kocide, Funguran WP	Fungicide/ Bactericide/ Nematicide	III
Thiophanate-methyl	Topsin	Fungicide/ Wound Protectant	V
Bacillus thuringiensis	Delfin, Vectorbac EC	Thuricide	III
Enrofloxacin (for veterinary use)	Baytril	Bacterial Antibiotics	V
Streptomycin Sulphate	Kanker-X	Bacterial Antibiotics	V
1-naphthylacetic acid & thiram	Secto Rooting Powder	Plant Growth Regulators	III
Ethephon	Thrill EC	Plant Growth Regulators	V
Indol 3-butyric acid	Clonex Rooting Hormone Gel, Rapid Root	Plant Growth Regulators	III
Nitrobenzene	Bloom Flower-N	Plant Growth Regulators	III
Vitamin B1 & Alphanaphthalene acetic acid	Fruit Fix	Plant Growth Regulators	V
Phthalimide	Metabolite of folpet	Breakdown Product	V
Phospholipid	Surfactant	Wetting Agent for Pesticides	V
Acetochlor dichlorimid	Surpass	Herbicides	II
Ferrous Sulphate	Ferroussulfat	Herbicides	V
Pirimsulfuron-methyl	Becon	Herbicides	IV
Triclopyr, triethylamine, picloram	Tordon Gold	Herbicides	III
Gulfosinate Ammonium	Basta SL	Herbicides	
Dimethyl benzyl ammonium chloride 50-80%	Hortisept Pro	Germicide	
Diflubenzuron	Flubex Flow EC	Larvicide	

### Classification of pesticide toxicity

- Ia** Extremely hazardous
- Ib** Highly hazardous
- II** Moderately hazardous
- III** Slightly hazardous
- V** Active ingredients unlikely to present hazards in normal use

## ANNEX

## 04

## ANNEX 4 - Banned or Severely Restricted Chemicals

THE FOLLOWING TABLE LISTS BANNED OR SEVERELY RESTRICTED CHEMICALS IN THE COUNTRY.

NAME OF CHEMICAL	TRADE NAME	CHEMICAL TYPE	TOXICITY CLASS	LEVEL OF RESTRICTION	DETAILS OF RESTRICTION
<b>1,1,2,2-tetra chloroethane</b>	Acetylene tetrachloride (fumigant)	Insecticide	Ib	Banned	
<b>aldrin</b>	Octalene , Aldrex	Insecticide	Ib	Banned	
<b>azinophosmethyl</b>	AZN	Insecticide	Ib	Banned	
<b>azinphos-methyl</b>	Gusathion	Insecticide	Ib	Banned	
<b>benfuracarb</b>	Oncol , Furacon	Insecticide	Ib	Banned	
<b>camphechlor</b>	Toxaphene	Insecticide	Ib	Banned	
<b>chlordane</b>	Octachlor	Insecticide	II	Banned	
<b>chlordecone</b>	Kepone	Insecticide	Ib	Banned	
<b>chlorethoxyfos</b>	Fortress	Insecticide	EPA I	Banned	
<b>chlormephos</b>	Dotan	Insecticide	Ia	Banned	
<b>coumaphos</b>	Asuntol	Insecticide	Ia	Banned	
<b>DDT</b>	Anofex, Neocide, Chlorophenthoate	Insecticide	Ib	Banned	
<b>dieldrin</b>	Octalox, dieldrex, dieldrite	Insecticide	Ia	Banned	
<b>endosulfan</b>	Thiodan (very highly toxic to fish)	Insecticide	II	Banned	PIC/POPs
<b>endothion</b>	Endocide	Insecticide	Ib	Banned	
<b>endrin</b>	Hexadrin, Endrix, Mendrin	Insecticide	Ia	Banned	
<b>ethylene dichloride</b>	Bualta , Busan 77	Insecticide	I	Banned	
<b>ethylene oxide</b>	Oxirane (fumigant)	Insecticide	Ia	Banned	
<b>flucythrinate</b>	Cybolt , Cythrin, Pay-off	Insecticide	Ib	Banned	
<b>fonofos</b>	Dyfonate	Insecticide	Ia	Banned	
<b>furathiocarb</b>	Deltanet, Promet	Insecticide	Ib	Banned	
<b>gamma-HCH (hexachloro-cyclohexane)</b>	Gamma-Col , Lindane	Insecticide	II	Banned	
<b>Glyphosate</b>	Round Up/ Spark	Herbicides	V		
<b>heptachlor</b>	Heptamul, Heptox, Hepta	Insecticide	II	Banned	
<b>heptenophos</b>	Hostaquick, Ragadan	Insecticide	Ib	Banned	
<b>isophenphos</b>	Oftanol,	Insecticide	Ib	Banned	
<b>isoxathion</b>	Karphos,	Insecticide	Ib	Banned	
<b>lumbda-cyhalothrin</b>	Karate (very highly toxic to fish)	Insecticide	II	Banned	
<b>methylene chloride</b>	Dichloromethane (fumigant)	Insecticide	II	Banned	

NAME OF CHEMICAL	TRADE NAME	CHEMICAL TYPE	TOXICITY CLASS	LEVEL OF RESTRICTION	DETAILS OF RESTRICTION
<b>mirex</b>	Mirex	Insecticide	Ib	Banned	
<b>nicotine</b>	Nico Soap	Insecticide	Ib	Banned	
<b>oxydemeton-methyl</b>	Metasystox R,	Insecticide	Ib	Banned	
<b>parathion-methyl</b>	Folidol, Metacide, Fostox	Insecticide	I	Banned	
<b>pirimiphos-ethyl</b>	Primicid	Insecticide	Ib	Banned	
<b>RU 15525</b>	Kadethrin	Insecticide	Toxic to fish	Banned	
<b>sodium selenate</b>	Selenic acid, Disodium salt	Insecticide	Ib	Banned	
<b>tebupirimifos</b>	Phostebupirim	Insecticide	Ia	Banned	
<b>azinphos-ethyl</b>	Gusathion A	Insecticides/ acaricides	Ib	Banned	
<b>butoxycarboxim</b>	Plant Pin	Insecticides /acaricides	Ib	Banned	
<b>chlorfenvinphos</b>	Birlane, Sapona, Apachlor	Insecticides/ acaricides	Ia	Banned	
<b>demeton-S-methyl</b>	Metasystox	Insecticides/acari- cides	Ib	Banned	
<b>dichlorves</b>	Dedevap, Nogos, Vapona	Insecticides/acari- cides	Ib	Banned	
<b>dicrotophos</b>	Bidrin	Insecticides/acari- cides	Ib	Banned	
<b>disulfoton</b>	Disyston, Frumin AL, Solvirex	Insecticides/acari- cides	Ia	Banned	
<b>EPN</b>	EPN	Insecticides/acari- cides	Ia	Banned	
<b>formetanate</b>	Carzol, Dicarzol	Insecticides/acari- cides	Ib	Banned	
<b>formothion</b>	Anthio	Insecticides/acari- cides	II	Banned	
<b>mecarbam</b>	Murfotox	Insecticides/acari- cides	Ib	Banned	
<b>mephosfolan</b>	Cytrolane	Insecticides/acari- cides	Ia	Banned	
<b>methamidophos</b>	Monitor, Tamaron, Patrole	Insecticides/acari- cides	Ib	Banned	
<b>methidathion</b>	Supracide, Suprathion	Insecticides/acari- cides	Ib	Banned	
<b>methomyl</b>	Lannate	Insecticides/acari- cides	Ib	Banned	
<b>mevinphos</b>	Phosdrin, Duraphos	Insecticides/acari- cides	Ia	Banned	
<b>monocrotophos</b>	Azodrin, Nuvacron, Crotos, Monocron	Insecticides/acari- cides	Ib	Banned	
<b>naled</b>	Dibrom, Bromex	Insecticides/acari- cides	EPA I	Banned	



NAME OF CHEMICAL	TRADE NAME	CHEMICAL TYPE	TOXICITY CLASS	LEVEL OF RESTRICTION	DETAILS OF RESTRICTION
omethoate	Folimat	Insecticides/acari-cides	Ib	Banned	
parathion	Fostox E, E605	Insecticides/acari-cides	I	Banned	
phosphamidon	Dimecron	Insecticides/acari-cides	Ia	Banned	
polychloroterpenes	Strobane	Insecticides/acari-cides	III	Banned	
propramphos	Safrotin	Insecticides/acari-cides	Ib	Banned	
sulfotep	Bladafum	Insecticides/acari-cides	Ia	Banned	
thiofanox	Dacamox	Insecticides/acari-cides	Ib	Banned	
thiometon	Ekatin	Insecticides/acari-cides	Ib	Banned	
vamidothion	Kilval	Insecticides/acari-cides	Ib	Banned	
ethylene dibromide	Dibrome	Insecticide/Nemat-icide	I	Banned	
ethoprophos	Mocap	Insecticide/Nemat-icide	Ia	Banned	
isazofos	Miral	Insecticide/Nemat-icide	Ib	Banned	
terbufos	Contraven, Counter, Cyanater	Insecticide/Nemat-icide	Ia	Banned	
carbofuran	Furadan, Curatter , Carbodan	Insecticide/Nemat-icide	Ib	Banned	
azobenzene	Azofume, Diazene	Acaricide	Ib	Banned	
chlordimeform	Fundal, Galecron	Acaricide	II	Banned	
cyhexatin	Acarstin , Aracnol F, Mitacid	Acaricide	III	Banned	
cyhexatin	Acarstin , Arancol F	Acaricide	III	Banned	
dienochlor	Pentac	Acaricide	EPA I	Banned	
propargite	Omite	Acaricide	EPA I	Banned	
aldicarb	Temik	Insecticide/Acari-cide/Nematicide	Ia	Banned	PIC
aldoxycarb	Standak	Insecticide/Acari-cide/Nematicide	EPA I	Banned	
fensulfothion	Dasanit, Terracur P	Insecticide/Acari-cide/Nematicide	I	Banned	
oxamyl	Vydate	Insecticide/Acari-cide/Nematicide	Ib	Banned	
phorate	Agromet	Insecticide/Acari-cide/Nematicide	I	Banned	
triazophos	Hostathion	Insecticide/Acari-cide/Nematicide	Ib	Banned	

NAME OF CHEMICAL	TRADE NAME	CHEMICAL TYPE	TOXICITY CLASS	LEVEL OF RESTRICTION	DETAILS OF RESTRICTION
<b>DNOC</b>	Ibertox, Trifocide, Trifrina	Insecticide/ Acaricide/ Fungicide/ Herbicide	Ib	Banned	
<b>pentachlorophenol</b>	Dowcide, Penta, Penchlorol	Insecticide/ Fungicide/ Herbicide/ Acaricide	Ib	Banned	
<b>tar oil</b>	Cade Oil	Insecticide/ Fungicide/ Herbicide/ Acaricide	Toxic to fish	Banned	
<b>methiocarb</b>	MesuroI	Insecticide/ Acaricide/ Molluscicide/ Bird Repellent	Ib	Banned	
<b>calcium arsenate</b>	Chip-Cal, Pancal, MMA	Insecticide/ Molluscicide	Ib	Banned	
<b>1,2-dibromo-3-chloropropane (DBCP)</b>	1,2-dibromo-3-chloropropane (DBCP)	Nemagon, Fumazone, Nemaforme	II	Banned	Groundwater contaminant
<b>fenamiphos</b>	fenamiphos	Nemacur	Ia	Banned	Groundwater contaminant
<b>methyl isocyanate</b>	MIC	Nematicide/ Fungicide/ Insecticide/ Herbicide	Ib	Banned	
<b>methyl isothiocyanate</b>	Trapex	Nematicide/ Fungicide/ Insecticide/ Herbicide	Ib	Banned	
<b>2-phenylphenol</b>	Torsite, Ortho phenylphenol	Fungicide	Toxic to fish	Banned	
<b>benomyl</b>	Benlate	Fungicide	III	Banned	
<b>blasticidin-S</b>	Bla-S	Fungicide	Ib	Banned	
<b>cadmium chloride</b>	Caddy	Fungicide	Ib	Banned	
<b>captafol</b>	Difolaten, Difosan, Crisfolaten	Fungicide	Ia	Banned	
<b>dodine</b>	Cyprex , Melprex, Venturol	Fungicide	EPA I	Banned	
<b>edifenphos</b>	Hinosan	Fungicide	Ib	Banned	
<b>ethyl mercury chloride</b>	Ceresan, Hexasan	Fungicide	Ib	Banned	
<b>hexachlorobenzene</b>	Anticarie, Co-op-hexa, Sanocide	Fungicide	Ia	Banned	
<b>mercuric chloride</b>	Corrosive sublimate, Fungchex	Fungicide	Ib	Banned	
<b>mercuric oxide</b>	Mercuric Oxide Red	Fungicide	Ib	Banned	
<b>methyl mercury hydroxide</b>	Methylmercury hydroxide	Fungicide	Ia	Banned	
<b>oxine-copper</b>	Quinolate	Fungicide	EPA I	Banned	
<b>phenylmercury acetate</b>	Agrosan, Unisan	Fungicide	Ia	Banned	
<b>phenylmercury salicylate</b>	Phenylmercury Salicylate	Fungicide	Ia	Banned	
<b>mercurous chloride</b>	Calomel, Turf fungicide	Fungicide/Insecticide	II	Banned	
<b>phenylmercury acetate</b>	Unisan	Fungicide/Insecticide	Ia	Banned	

NAME OF CHEMICAL	TRADE NAME	CHEMICAL TYPE	TOXICITY CLASS	LEVEL OF RESTRICTION	DETAILS OF RESTRICTION
calcium polysulfide	Lime Sulfur	Fungicide/ Insecticide/ Acaricide	EPA I	Banned	
2,4,5-T	Brochofox, Decamine Veon	Herbicide	Ib	Banned	
acrolein	Magnacide	Herbicide	EPA I	Banned	
cadusafos	Rugby , Apache	Herbicide	Ib	Banned	
dinoseb	Premerge, Aretit, Ivosit	Herbicide	Ib	Banned	
Agroxone	MCPA	Herbicide	EPA I	Banned	
naptalam	Alanap	Herbicide	EPA I	Banned	
nitrofen	Tok, Tokkorn	Herbicide	Ib	Banned	
paraquat	Gramaxone	Herbicide	EPA I	Banned	
dimethipin	Harvade	Herbicide/ Plant Growth Regulator	EPA I	Banned	
hydrogen cyanide	Cymag	Insecticide/ Rodenticide	Ib	Banned	
phosphine	Ratol , Phostoxin, Quickphos	Insecticide/ Rodenticide	EPA I	Banned	
potassium arsenite	Potassiumarsenite	Insecticide/ Herbicide/ Rodenticide	Ib	Banned	
sodium arsenite	Arzeen, Weedeath	Insecticide/ Herbicide/ Rodenticide	Ib	Banned	
alpha-naphthyl thiourea	Antu	Rodenticides	Ia	Banned	
anticoaglant + salmonella	Biorat	Rodenticides	Ia	Banned	
chlorophacinone	Caid, Liphadione, Redentin	Rodenticides	Ia	Banned	
diphacinone	Diphacine, Gold Crest, Rodent Cake	Rodenticides	Ia	Banned	
thallium (I)tetraoxosulfate	Thalious Sulphate	Rodenticides	Ia	Banned	
thallium sulfate	Thallium	Rodenticides	Ia	Banned	
strychnine	Strychnine Alkaloid	Rodenticide/ Avicide	Ib	Banned	
methyl bromide	Celfume, Embafume, Arkitropin	Soil Sterilant/ Fumigant Fungicide	EPA II	Banned	
Arsenic compounds		Pesticide-Miscellaneous		Banned	
Cadmium Compounds		Pesticide-Miscellaneous		Banned	
Inorganic Mercury Compounds		Pesticide-Miscellaneous		Banned	
Organic Mercury Compounds		Pesticide-Miscellaneous		Banned	
Selenium Compounds		Pesticide-Miscellaneous		Banned	
Thallium Compounds		Pesticide-Miscellaneous		Banned	

NAME OF CHEMICAL	TRADE NAME	CHEMICAL TYPE	TOXICITY CLASS	LEVEL OF RESTRICTION	DETAILS OF RESTRICTION
CFC 11		Chlorofluorocarbon Gases		Banned	Following the criteria established by the Montreal Protocol on Substances that Deplete the Ozone Layer
CFC 12		Chlorofluorocarbon Gases		Banned	Following the criteria established by the Montreal Protocol on Substances that Deplete the Ozone Layer
Halon-1211		Halon gases		Banned	Following the criteria established by the Montreal Protocol on Substances that Deplete the Ozone Layer
Halon-1301		Halon gases		Banned	Following the criteria established by the Montreal Protocol on Substances that Deplete the Ozone Layer
Halon-2402		Halon gases		Banned	Following the criteria established by the Montreal Protocol on Substances that Deplete the Ozone Layer
1,1,1-Tri Chloroethane (methylchloroform) $\text{Ch}_3\text{CCl}_3$		Methyl Chloroform		Banned	Following the criteria established by the Montreal Protocol on Substances that Deplete the Ozone Layer
Bromochloromethane ( $\text{CH}_2\text{BrCl}$ )		Bromochloromethane		Banned	Following the criteria established by the Montreal Protocol on Substances that Deplete the Ozone Layer
Methyl Bromide		Methyl Bromide		Banned	Following the criteria established by the Montreal Protocol on Substances that Deplete the Ozone Layer

### Classification of pesticide toxicity

- Ia** Extremely hazardous
- Ib** Highly hazardous
- II** Moderately hazardous
- III** Slightly hazardous
- V** Active ingredients unlikely to present hazards in normal use

ANNEX 5 - The following table below lists precursor chemicals.

PRECURSOR CHEMICALS

N-acetylanthranilic acid also known as N-Acetylo- aminobenzoic acid

Ephedrine also known as  $\beta$ -Hydroxy-N-methylamphetamine

Ergometrine also known as Ergonovine or Ergobasine or [8 $\beta$ (S)]-9-10-Didehydro-N-(2-hydroxy-1-methylethyl)-6-methyl-6-methylergoline-8-carboxamide

Ergotamine also known as 12'-Hydroxy-2'-methyl-5'-a-(phenylmethyl) ergotaman-3',6',18'-trinone

Isosafrole also known as 1,2-(Methylenedioxy)-4-propenylbenzene

Lysergic acid also known as 9,10-Didehydro-6-methylergoline-8 $\beta$ -carboxylic acid

3,4-methylenedioxyphenyl-2-propanone

Norephedrine

1-Phenyl-2-propanone also known as Phenylacetone

Piperonal also known as 3,4-(Methylenedioxy)benzaldehyde or Piperonylaldehyde

Pseudoephedrine

Pseudoephedrine also known as  $\beta$ -Hydroxy-Nmethylamphetamine

Safrole also known as 4-Allyl-1,2- methylenedioxybenzene

Acetic anhydride also known as Acetic oxide

Acetone also known as 2-Propanone or Dimethyl ketone

Anthranilic acid also known as o-Aminobenzoic acid

Ethyl ether also known as Ether or Diethyl ether or Ethyl oxide or Diethyl oxide or Ethoxyethane or

1,1'-Oxybisethane

Hydrochloric acid

Methyl ethyl ketone also known as 2-Butanone

Phenylacetic acid also known as Benzeneacetic acid or  $\beta$ -Toluic acid

Piperidine also known as Hexahydropyridine

Potassium permanganate

Sulphuric acid

Toluene also known as Methylbenzene or phenylmethane

## TERMS OF REFERENCE

### NATIONAL CHEMICALS MANAGEMENT COMMITTEE

#### BACKGROUND

Maldives places great importance to the wellbeing of humans and the environment. Maldives is a Party to many chemicals-related conventions and agreements such as the Montreal Protocol on Substances that Deplete the Ozone Layer, Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal, Stockholm Convention on Persistent Organic Pollutants (POPs), and Rotterdam Convention on the Prior Informed Consent Procedure; and is a member of, inter alia, the Intergovernmental Forum on Chemical Safety and Strategic Approach to International Chemicals Management (SAICM).

Regarding institutional and legal arrangements, chemicals that are imported for agricultural purposes need to be approved by the Ministry of Fisheries and Agriculture before the Ministry of Defence and National Security authorizes importation. The same principle applies to chemicals used for public health issues/medical sector (other than pharmaceuticals which are under the mandate of the Ministry of Health and Family) and ozone depleting substances (ODS), with prior approval necessary from the Maldives Food and Drug Authority and Ministry of Environment and Energy respectively.

Ministry of Fisheries and Agriculture, which is mandated to control and monitor the import, usage, and sound disposal of pesticides in Maldives is currently formulating a pesticide regulation that

will help improve the management of pesticides in Maldives. The draft law consists of a list of banned pesticides that includes the POPs listed under the Stockholm Convention, pesticides listed under the Rotterdam Convention, and WHO class I-III pesticides. However, the industrial chemicals listed under these conventions, such as PCBs and asbestos, still need to be similarly addressed in Maldives. National data on related usage and import of these and other chemicals also needs to be strengthened.

Playing an important role in chemicals management, Maldives' 1993 Environment Protection and Preservation Act (Law no. 4/93) has special provisions on the environmentally sound management of hazardous waste, chemicals, and oil. However, the implementation and monitoring of these particular provisions has been a challenge due to the lack of a national chemicals database or even a general baseline indicating the usage and disposal of these chemicals.

While there is currently no production of chemicals in Maldives, during the last decade, the import of chemicals has increased vastly. The main usage of chemicals in Maldives is in the agricultural industry, construction, boat building, and to a lesser extent in resorts development and maintenance. Though other uses may not have been recognised yet, generation of chemical waste through agriculture, construction, and electronic waste is present in Maldives. With the diversification of the economy in the future, chemicals management issues are likely to become increasingly important.

Faced with a wide range of issues pertaining to chemicals management, the need for developing an integrated and coordinated approach to national chemicals management has become a priority for the Maldives.

#### PURPOSE AND OBJECTIVES OF THE COMMITTEE

Chemicals management encompasses a broad range of issues and each of which are addressed by a number of or different ministries, agencies as well as parties outside of government. Therefore, in order to achieve a more integrated national approach to chemicals management, a coordinating mechanism is desirable through which the various actors can exchange information, coordinate activities that are complementary or inter-related, and, in certain instances, make joint decisions or, in the longer-term, develop national policy.

The National Chemicals Management Committee (NCCMC) will mainly oversee the following two projects.

**1**  
The Strategic Approach to International Chemicals Management (SAICM) project "Strengthening Capacities for National SAICM Implementation in Maldives" developed by the Ministry of Environment and Energy with the assistance from UNITAR and funded by the Quick Start Programme Trust Fund (QSPTF).

**2.**  
"Enabling Activities to facilitate early action on the implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs)" developed by the Ministry of Environment and Energy with the assistance from UNIDO and funded by Global Environment Facility (GEF).

It will provide guidance, advice, and support for the execution of the projects and to the lead agency and national project coordinators (e.g. through the review of regular reports and monitoring and evaluation activities), facilitate coordination of project activities among national stakeholders, and oversee the implementation of the projects.

It will also play an important role in further resource mobilization for the implementation of "next steps" based on project results.

#### MANDATE

The NCMC is an inter-ministerial forum in which all the relevant government departments, non-governmental organizations, the labor sector and industry organizations are represented to increase transparency and collaboration among ministries, clarify the respective mandates and competencies of the various agencies, facilitate a sharing of information and resources (e.g. databases, equipment), and foster a comprehensive approach to the management of chemicals that addresses all stages of the chemical life cycle. The NCMC will also lobby high-level commitment to the objectives of the Stockholm Convention and SAICM and other chemical related forums. Major decisions with relevant to the projects will be finalized by the NCMC. The NCMC will provide a forum where different views and technical knowledge on specific issues of chemicals management can be shared. The roles of the NCMC include:

a) Provide strategic guidance and direction to the projects, ensuring it remains within any specified constraints of time, scope and budget.

b) Provide substantive advice and guidance on efficient and timely execution of the projects.

c) Resolve significant conflicts within the projects, and negotiate a solution to major problems that may arise between the projects and external bodies.

d) Endorse the detailed work plans and schedules for the projects.

e) Review and approve project reports

and monitoring and evaluation reports.

f) Review and comment on the project's sectoral task teams' composition and work plans.

g) Appraise the project progress and make recommendations for next steps (Identify and recommend follow-up actions).

h) Promote and discuss regulation mechanisms on chemicals management.

i) Share information on chemicals related activities of the respective members and ensure coordination.

j) Review/establish on a yearly basis national priorities for chemicals management and possible follow up action.

k) Identify resources for implementation of awareness raising and training programmes.

#### COMMITTEE MEMBERS

The NCMC comprises of x members from relevant government departments, non-governmental organizations, the labor sector and industry organizations. The Ministry of Environment and Energy will be responsible for establishing the Committee. The members of the NCMC will be nominated by the respective institutions. The State/Deputy Minister of MEE will chair the NCMC. The NCMC will include members from the following sectors.

- Ministry of Environment and Energy
- Environmental Protection Agency
- Ministry of Fisheries and Agriculture
- Ministry of Health
- Ministry of Transport and Communication

- Ministry of Youth and Sports
- Maldives Customs Service
- National Bureau of Statistics
- Local Government Authority
- Ministry of Defense and National Security
- Pesticide Industry Associations
- Industrial Chemicals Industry Associations
- Maldives National University
- Hospitals
- State Electric Company Limited
- Blue peace (representing CSOs)
- Maldives Association of Construction Industry

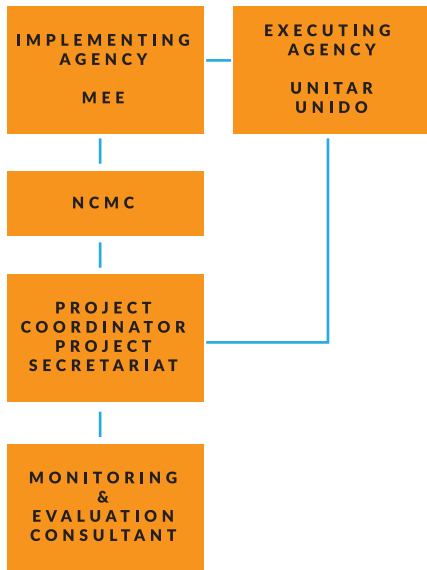
#### ALTERNATE MEMBERS

Each organization may designate an alternate member to represent in his or her stead. The Alternate Member representing in the stead of a Committee Member shall have the same rights, privileges and responsibilities as such Committee Members.

Alternate Members should also possess the same competencies and have the capacity to perform the same responsibilities as the Committee Members in accordance with the 'Committee Member Roles and Responsibilities', as outlined in section 7 below.

**STRUCTURE**

The Projects will be implemented over 2 years by the Ministry of Environment and Energy. The Secretariat of the Committee will comprise members from the two projects.



**RESPONSIBILITIES**

**COMMON RESPONSIBILITIES OF THE COMMITTEE MEMBERS**

*Participating in the committee meetings*

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*Reporting to the committee secretariat*

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*Reporting to respective constituencies*

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*Providing expertise and relevant input information*

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*Contributing to the preparation of project deliverables*

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*Implementing tasks as agreed by the committee*

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**COMMITTEE CHAIR'S RESPONSIBILITIES**

*Monitoring and reporting on progress and outcomes regarding the project*

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*Facilitating committee meetings*

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*Ensuring balanced input from all members as appropriate*

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**COMMITTEE SECRETARIAT'S RESPONSIBILITIES**

*Coordinating the committee*

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*Arranging and preparing committee meetings*

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*Providing facilities and materials for the committee meetings*

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*Preparing and distributing reports for committee meetings*

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*Recording minutes of the committee meetings and submitting to the committee chair*

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*Acting as focal point through which information flows*

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*Work in close cooperation with the chair of the committee*

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*Overall coordination of the committee; preparation of meeting agendas, minutes and documents; information collection, distribution, exchange and archiving; and maintenance of links with all relevant stakeholders and members of the committee*

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**ROLE OF UNITAR AND UNIDO**

UNITAR is Executing Agency for the SAICM QSPTF project. Specifically, UNITAR will provide international support for project activities such as guidance and training material for all project activities, resource person(s) to attend the training workshops and endorsement meetings for project activities and document development and the National Forum, etc. UNITAR will also be contributing to the major outputs and project management. This relationship will be governed by a Memorandum of Understanding.

**THE RESPONSIBILITIES OF UNIDO INCLUDE THE FOLLOWING**

*Ensure the efficient project implementation to anchor effective timely delivery of project outcomes within the project resource;*

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*Monitor and supervise the development of the NIP in the Republic of Maldives, working in close co-operation with the National Project Coordinator;*

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*Ensure that there is an exchange of experience and expertise between countries of the region;*

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*Upon request of the NEA, appoint other international technical experts, wherever possible drawn from the region, for specific project tasks;*

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*Organize evaluations in line with UNIDO's evaluation policy at the end of the first year (mid-term) and the completion of the project;*

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**CALLING COMMITTEE MEETINGS  
REGULAR MEETINGS**

The NCMC shall have a minimum of two meetings per year. All the meetings will be held at MEE. Meetings will generally be kept to 1-3 hours in length. Notice of the time and place of each regular meeting of the NCMC shall be provided to the NCMC at least 30 days in advance of the meeting.

**EMERGENCY MEETINGS**

In case of a chemical accident or any other issue which requires NCMC consensus, NCMC members shall be provided with a time and place of the urgent meeting at the earliest possible notice.

**CONDUCT OF MEETINGS****GENERAL CONDUCT AT MEETINGS**

Meetings will generally be conducted by the NCMC Chair.

All NCMC meetings shall convene at the stated time and commence immediately in accordance with the agenda as adopted.

The NCMC Chair shall call upon NCMC Members, Alternate Members or designated delegates by their individual name and function.

When the meeting floor is open for discussion, the NCMC Chair shall call upon NCMC Members, Alternate Members or designated delegates in the order in which they signal their desire to speak.

**ATTENDANCE AT MEETINGS**

Attendance by NCMC Members and Alternate Members shall be recorded at the start of each NCMC meeting by the Secretariat.

**AGENDA OF MEETINGS**

The Project Coordinator shall be responsible for setting the agenda for meetings in consultation with the Chair. An Agenda with related documentation shall be circulated to NCMC Members at least 2 weeks in advance of a scheduled NCMC meeting by the Secretariat.

**ANNEX****07****STANDARD OPERATING  
PROCEDURE AT  
THE CHEMICAL  
REGULATION AND  
LICENSING UNIT - MFA**

The Chemical Regulation and Licensing unit approves chemical fertilizers and pesticides imported to aid and boost the agriculture industry in Maldives. The unit operates under the agriculture division at the Ministry of Fisheries and Agriculture.

**PURPOSE:**

To approve chemicals imported by farmers at agricultural islands for agricultural purposes and chemicals imported for sale and distribution.

**SCOPE OF WORK:**

Permitting import of chemicals  
Things to look out for before approving:

Confirming that all information requirements on the pesticide/fertilizer form has been met. Requesting re-application of form if found incomplete.

Determining whether all documents listed in the pesticide/fertilizer form has been submitted and complied with.

Granting approval for import if the request has been made for a chemical on the positive list of chemicals. If unlisted, and if not already banned then issuing approval upon review by

technical experts.

If the request has been made for a banned chemical, notifying that the application has been declined.

If the request has been made for a previously unaddressed chemical, then evaluating the application to assess the labeling and ingredients prior to authorization of import.

Issuing approval if the chemical meets the standard for import. Notice of issuance of import permit.

Filing the form of the chemical granted approval.

technical experts.

## NAMES AND ADDRESSES OF ORGANIZATIONS

### MINISTRIES AND AUTHORITIES

#### MINISTRY OF ENVIRONMENT AND ENERGY

Green Building, Handhuvaree Hingun,  
Maafannu Male', Maldives  
Tel: +960 301 8300, Fax: +960 301 8301  
Email: secretariat@environment.gov.mv

#### ENVIRONMENTAL PROTECTION AGENCY

Ameenee Magu, Maafannu, Male',  
Maldives  
Tel: +960 333 5949, Fax: +960 333 5953  
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#### MALDIVES ENERGY AUTHORITY

Ameenee Magu, Male'  
Tel: +960 301 9100, Fax: +960 301 8576  
Email: secretariat@mea.gov.mv

#### MINISTRY OF FISHERIES AND AGRICULTURE

7th Floor, Velaanaage Office Building,  
Male', Maldives  
Tel: +960 332 2625, Fax: +9606558  
Email: info@fishagri.gov.mv

#### MINISTRY OF DEFENCE AND NATIONAL SECURITY

Tel: +960 332 2601, Fax: +960 332 5525  
Email: admin@defence.gov.mv

#### MALDIVES NATIONAL DEFENCE FORCE

Bandaara Koshi, Ameeru ahmed Magu,  
Male', Maldives  
Tel: +960 332 2607, Fax: +960 332 2496  
Email: media@mndf.gov.mv

#### MINISTRY OF HEALTH

Roashanee Building (4th Floor), Sosun  
Magu, Henveiru, Male', Maldives  
Tel: +960 332 8887, Fax: +960 332 8889  
Email: mohf@health.gov.mv

#### HEALTH PROTECTION AGENCY

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Tel: +960 331 4494, Fax: +960 331 4484  
Email: hpa@health.gov.mv

#### MALDIVES FOOD AND DRUG AUTHORITY

Roashanee Building (4th Floor), Sosun  
Magu, Henveiru, Male', Maldives  
Tel: +960 301 4322, Fax: +960 301 4300  
Email: mfdadmin@health.gov.mv

#### MINISTRY OF ECONOMIC DEVELOPMENT

Boduthakurufaanu Magu, Male',  
Maldives  
Tel: +960 332 3668, Fax: +960 332 3840  
Email: info@trade.gov.mv

#### MALDIVES POLICE SERVICE

Shaheed Hussain Adam Building,  
Boduthakurufaanu Magu, Male',  
Maldives  
Tel: +960 332 2111, Fax: +960 331 3281  
Email: info@police.gov.mv

#### MINISTRY OF FINANCE AND TREASURY

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Maldives  
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Email: admin@finance.gov.mv

#### NATIONAL BUREAU OF STATISTICS

Ministry of Finance and Treasury,  
Ameenee Magu, Male', Maldives  
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#### MALDIVES CUSTOMS SERVICE

Aminath Liusha (Chief Customs Officer)  
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Male', Maldives  
Tel: +960 333 4193, Fax: +960 332 2633  
Email: customsmail@customs.gov.mv

#### MALE' CITY COUNCIL

Galolhu, Majeedhee Magu, Male',  
Maldives  
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Website: www.malecity.gov.mv

#### WASTE MANAGEMENT SECTION

Secretariat of the Male' City Council  
Maafaithakurufaanu Magu, Male',  
Maldives  
Tel: +960 332 3859, Fax: +960 331 3801  
Email: admin@wms.gov.mv

#### MALDIVES NATIONAL UNIVERSITY

Rahdhebai Hingun, Male', Maldives  
Tel: +960 334 5101  
Email: www.mnu.edu

#### BUSINESS AND INDUSTRY ORGANIZATIONS

#### MALDIVES NATIONAL CHAMBER OF COMMERCE

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#### MALDIVES WATER AND SEWERAGE COMPANY

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Male', Maldives  
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Website: www.mwsc.com.mv

#### MALDIVES ASSOCIATION OF CONSTRUCTION INDUSTRY

Ground floor, Port Complex, Hilaalee  
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#### FENAKA CORPORATION LIMITED

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#### INDHIRA GANDHI MEMORIAL HOSPITAL

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Email: info@mhsc.com.mv



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# MNCP

MALDIVES NATIONAL CHEMICAL  
PROFILE



MINISTRY OF ENVIRONMENT & ENERGY  
REPUBLIC OF MALDIVES

