



Overview of Mapping of Chemical Accident Safety Management in Egypt (Short Diagnosis Report)



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List of Acronyms:

ENCPC	Egypt Cleaner Production Centre
ERS	(Emergency Response Sheet)
DDT	(dichlorodiphenyltrichloroethane)
FEI	(Federation of Egyptian Industries)
GDP	(gross domestic product)
EEAA	(Egyptian Environmental Affairs Agency)
SAICM	(Strategic Approach for International Chemicals Management)
UNEP	(United Nations Environment Programme)
CAPP	(Chemical Accident Prevention and Preparedness)
MSEA	(Ministry Of State for Environmental Affairs)
HS	(Hazard Substances)
MOHP	(Ministry Of Health and Population)
WHO	(World Health organization)
MIFT	(Ministry of Industry and Foreign Trade)
WTO	(World Trade Organization)
MoHUUC	(Ministry of Housing Utilities and Urban Communities)
MOWR	(Ministry OF Water Resources)
CAS	(Chemical Abstracts Service)
FAO	(Food and Agriculture Organization)
ILO	(International Labor Organization)
OPCW	(Organization for the Prohibition of Chemical Weapons)
POPS	(Persistent Organic Pollutants)

EEPP	(Egyptian Environmental Policy Program)
MSDS	(Material Safety Data Sheet)
ICA	(Industrial Control Authority)
IDA	(Industrial Development Authority)
EOS	(Egyptian Organization for Standardization and Quality)
RBOs	(Regional Branch Offices)
EMUs	(Environmental Management Units)
IFCS	(Intergovernmental Forum on Chemical Safety)
APELL	(Awareness and Preparedness for Emergencies at the Local Level)
SMEs	(Small and Medium Enterprises)
EHSIMS	Egyptian Hazardous Substances Information Management System
SDC	Swiss Agency for Development & Cooperation
SEAM	Sustainable Environmental Assessment and Management
DFID	(Department for International Development)
FINNIDA	Finnish International Development Agency
NIP	National Implementation Plan
GEF	Egyptian Environmental Facility
EPF	Egyptian Protection Fund
CPA	Civil Protection Authority
NGO	Non-governmental organizations
PPP	Public-Private Partnership

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1-Background

Every year hundreds of new chemicals are created and introduced into market in many products and industry branches through complex supply chains. The production and processing of chemicals lead to generation of waste and emissions, causing environmental and health impacts, as well as a risk for chemical accidents. This situation called for new and innovative chemicals management approaches.

Virtually, all countries have facilities where hazardous chemicals are produced, used, stored, transported or otherwise handled. It is important to understand where these facilities are located and whether there are sufficient protections in place to reduce the likelihood of an accident (such as a fire, spill or explosion) and to minimize the harm to people, the environment and property if an accident should occur. Some hazardous installations may be obvious, such as a refinery or large manufacturing facility. But significant chemical accidents can also occur at places which may be less apparent such as a chlorine release from a refrigeration facility, a dust explosion at a grain silo, a cyanide spill from mining operations, a fire at a warehouse that intermittently holds pesticides, hundreds of small propane tanks exploding at a distribution facility, a derailment of a train carrying a number of different chemicals to a neighboring country, or an unexpected detonation of dynamite at a construction company.

Taking into account that many developing countries have very weak system for chemical accident prevention and preparedness (CAPP), UNEP established the **Flexible Framework Initiative** in 2007 in light of an action point from the SAICM (Strategic Approach for International Chemicals Management) **Global Plan of Action**, which calls for the development of collaborative practically-oriented tools for chemical accident prevention and in order to support any country that wishes to review and, as appropriate, improve its programmes or policies related to prevention of, and preparedness for, accidents at hazardous installations. This project is developed in the scope of UNEP's Flexible Framework Initiative.

The size of the national industrial sector in Egypt is growing, as the Industrial Development Authority reported: there are 40,000 industrial facilities in Egypt, which vary in scale (<http://www.ida.gov.eg/ida/ehsa2eyaat.html>).

Such kind of development (increasing the facilities number) has a significant impact on the environment.

The chemical sector is one of the most important and strategic industrial sectors and serves all the other industrial sectors in Egypt. The industry in Egypt contributes with 21% of the environmental damage cost, representing 1.4 billion (1999-2000) (The World Bank, EPAPII, 2006). Industrial activities are among the major sources of air, water and soil pollution. It is estimated that the industrial sector in Egypt generates solid waste in the range of 4 to 4.5 million tons per year and industrial hazardous waste at 100,000-150,000 tons per year (the National Environmental Action Plan, 2002).

Most of the industrial hazardous waste comes from three main governorates; Greater Cairo where the industry represents 51% of the total industrial activities followed by Sharkeya governorate and then Alexandria. All other governorates follow these first three ones. (Egyptian Environmental Affairs Agency, 2004). Many of the chemical accidents are not reported to the authorities, especially in small and medium enterprises.

Many chemical accidents occur due to a lack of appropriate system for sound chemicals management in Egypt. This could be due to the following:

- Lack of information on the types, quantities and application of chemical wastes in Egypt;
- Lack of adequate chemical safety practices;
- Lack of knowledge on the technologies used for the chemicals waste management;
- Lack of market oriented business model for chemicals waste in Egypt.

2- Objective of Present Assignment

The objective of this assignment is to conduct a quick diagnosis study to the existing situation of chemical accident prevention and preparedness in Egypt by focusing on the main challenges and opportunities. Furthermore, the present assignment aims at mapping the main stakeholders and their roles in implementing a national Chemical Accident Prevention and Preparedness (CAPP) framework.

3-Approach and Methodology of Assignment

The present short diagnosis study will be conducted taking into consideration the UNEP approach for successful implementation of Chemical Accident Prevention and Preparedness (CAPP) Programme Projects in several developing countries and countries with economies in transition. In this context, the study will focus on summarizing and mapping the available relevant information on chemical accident prevention and preparedness in Egypt including general mapping and analysing the role of all relevant competent stakeholders. Furthermore, way forward and recommendation steps to improve chemical accident. The study will be conducted by a technical team of ENCPCs staff with high specialization in the topic of chemicals and chemicals accident prevention.

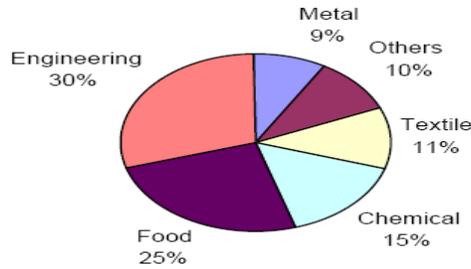
4-Overview of Industrial Sector in Egypt

The industrial sector in Egypt contributes to about 35% of the Egyptian GDP and employs approximately 25% of the workforce. Data from different sources has shown that as of January 2005, the number of industrial establishments, excluding the micro facilities, has reached about 24,000. There are eight main industrial sectors in Egypt including:

- Food industry (production of edible oil, canned and preserved food, dairy products, sugar, beverages, tobacco and animal fodder)
- Chemical Industry (Cement, coke, fertilizers, dyeing chemicals, paints, pesticides, paper, tanning, plastics and rubber)
- Textiles (spinning, weaving, finishing, manufacture of
- garments)
- Engineering (machinery, motor vehicles, electric machinery,
- medical instrumentation and transport equipment)
- Wood industry (furniture)
- Metal industry (Steel, Welding, metal processing, forging,
- Foundries, fabricated metals and basic metals)
- Non-metallic minerals and refractories (ceramics, salt
- refining, tiles, marble and other rocks)
- Pharmaceutical industry

Over 45% of Egypt's industrial facilities are located in Greater Cairo in areas such as Shoubra Elkheima, Helwan, South of Cairo and Mostorod. Greater Cairo and

Alexandria includes about 70% of the total number of small, medium and large industrial facilities in Egypt. .



Relative Production Value of the Different Sectors

4.1 Overview of The Chemical Sector (Manufactures of Chemicals) in Egypt

The Chemical Industries is considered one of the largest industrial sectors; it includes 7 main subsectors, which are Plastics, Rubber, Paper, Detergents, Paints, Miscellaneous, Chemicals, Fertilizers and Glass. The Medium and Small Enterprises represent around 85% of the total number of sector companies. Exports of Chemical Industries sector reached LE 18,6 billion in 2009 and LE 14,4 billion in 2010 till August (8 months). The number of companies reached 1167 with a labor force estimated at 83000 workers. The exports value till end of August 2010 reached around LE 14.4 billion with an increase of 28% over the same period of 2009. The total investments of registered companies in the sector reached about LE 35 billion.

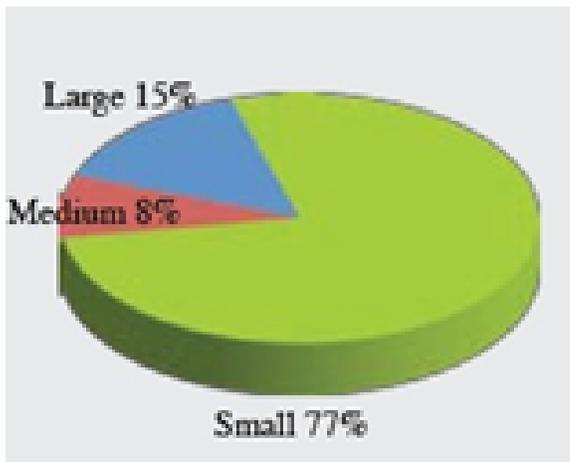


Figure1: Chemical Sector Export Value (IMC, 2010)



Figure 2 Chemicals Companies Classification by size(IMC,2010)

4.2 Overview of the Other Industrial Sectors (User of Chemicals)

The survey is targeting main industrial sectors (user of chemicals in their processes) as follows: engineering sector, Textile sector, furniture, tanning, metallurgical sector, and printing sector

4.2.1 Engineering Sector

Engineering sector companies represents 21% of total industrial companies. The engineering sector is considered to be one of the biggest industrial sectors that include 9 different sub-sectors which are: Automotive, Home Electrical Appliances, Feeding Industries, Machineries and Equipments, Medical Devices, Electronics, Cables and Lighting, Metal Furniture, Households and Metal Forming. The Total number of Engineering Companies registered has reached 1300 companies, with total employment of more than 120 thousand workers and the total exports value has reached LE 7.8 billion. The total investments of registered companies have reached approximately LE 28 billion.

4.2.2 Furniture and Wood industries sector:

Currently 75% of Egypt's wood furniture exports are oriented towards the Middle East (the fastest growing market during the 1990s), Europe (particularly the UK, France, Italy and Spain) and the United States. According to 2009 figures Egypt's production of furniture reached \$ 3 billion, with an export value of \$ 296 million. The total registered companies 1315 and exports of registered companies are estimated at LE 438 million and the total investments of registered companies: LE 1,600 million.

4.2.3 Leather and Tanning Industrial sector:

Leather Tanning Industry is one of the promising industries in Egypt. This sector has been radically developed through establishing a modern compound in Robbiki region to attract national leather industry through encouraging the relocation of leather tanneries from Magra El Oyon region to Robbiki. The added value of the Egyptian product can be thus increased towards achieving competitiveness in the global market.

The leather products industry and footwear industry have the same importance and receive the same attention in Egypt. Two compounds are currently being established. The first in 10th of Ramadan City accommodating 100 factories and the other in Morgham region in Alexandria accommodating 50 factories. Those two compounds could achieve a growth rate that would enable the Egyptian industry to benefit from opportunities available in global markets. The industry has achieved progress during the past four years. Production was estimated at LE 546 million in

2005 reaching LE 818 million in 2006. It reached LE 853 million by the end of 2007 and LE 1021 million by the end of 2008. By 2009, it achieved LE 799 million. Exports reached 766 million until August 2010. The sector has an export target of LE 2000 million by the year 2013. The number of registered companies: 573 companies and exports of the sector: LE 766 million and investments of IMC registered companies: LE 1100 million

4.2.4 Textile Sector

The textile industry is one of the most important sources for foreign exchange in Egypt. The industry also accounts for 30% of Egypt's industrial production, 15% of its non petroleum exports and 30% of local employment, as Egypt has a number of competitive advantages; competitive labor costs and locally available raw materials.

The total companies registered are 1145 and the Total Value of sector exports reached LE 10.334 million total investments

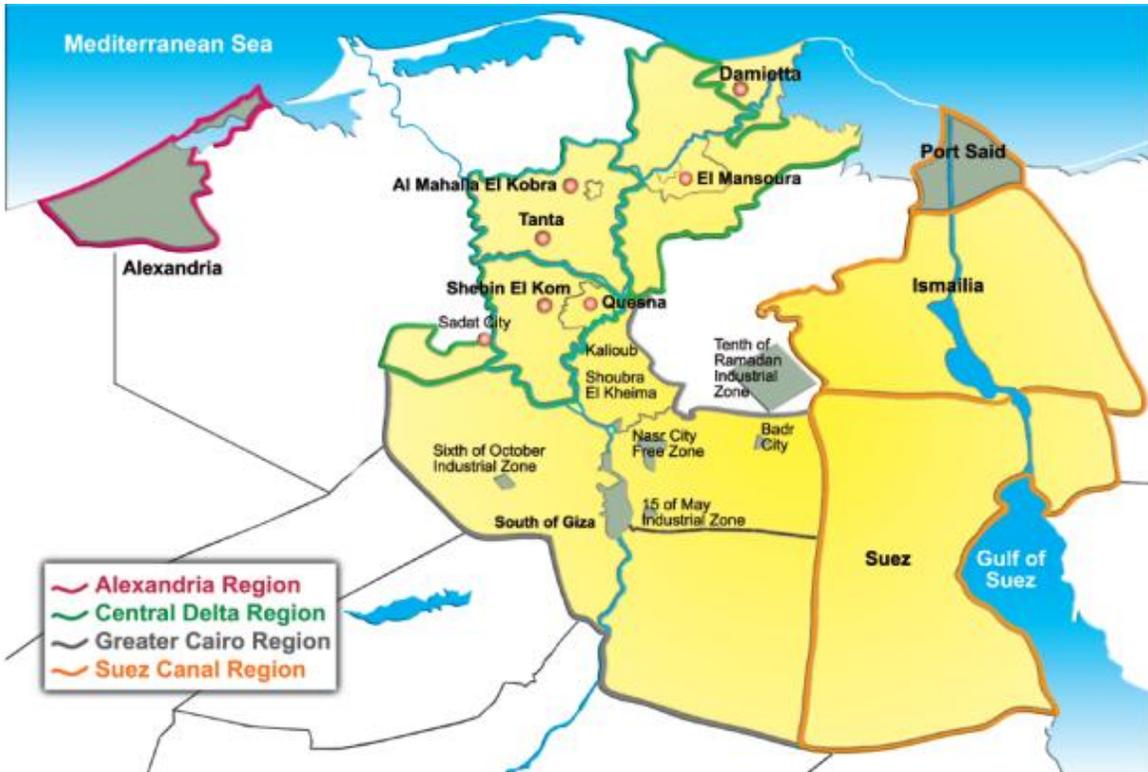
4.2.5 Building Material and Construction Sector (mainly Metallurgical Industries)

The sector still maintains the lead in the value of exports with the ratio of exports of 27.5% of total exports of the country. Despite that the sector considered as one of the most affected sectors by the global financial crisis, sector exports dropped from 25.7 billion pounds in 2008 to 23.7 billion pounds in 2009. The sector contributed by 11.4% in GDP of the country in 2009. The sector contributed by 0.6% in the overall growth rate of the country in 2009/2010. The Number of companies registered with IMC is 950 companies with total employment of 70 thousand workers and the value of export during this year (till end of August 2010) is about 15 billion pounds, with an increase of 14% over the same period in 2009.

4.2.6 Printing and packaging industrial sector:

Printing and packaging sector serves other sub-sectors including: printing, Paper converting, printing on flexible and non flexible material, corrugated carton, stationeries, color separation and publishing houses. The number of registered companies: 325 and the value of exports: LE 791 million and investments: LE 4.8 billion

In Egypt there are more than 17 new working industrial cities distributed in Egypt as shown in Annex III and the following map:



5- Stakeholders Description and Analysis on Chemical Safety and Management in Egypt

The responsibility of chemicals management and dealing with chemical accidents in Egypt is divided between different authorities as following (Table1: List of stakeholders and their role description):

Stakeholders	Description
Ministry of State for Environmental Affairs (MSEA)/ Egyptian Environmental Affairs Agency (EEAA):	<p>The Agency shall be the National Authority responsible for strengthening environmental relations between Egypt and other countries, regional and international organizations. The Agency shall recommend taking the necessary legal procedures to adhere to regional and international conventions related to the environment and prepare the necessary draft laws and decrees required for the implementation of such conventions.</p> <p>The main Objective of the MSEA and EEAA is to:</p> <ol style="list-style-type: none"> 1. Prepare draft laws and decrees related to the fulfillment of its objects and express its opinion on proposed legislation related to the protection of the environment. 2. Prepare studies on the state of the environment, formulate the national plan with projects included for the protection of the environment, prepare estimated budgets for each as well as environmental maps of urban areas and areas to be developed and lay down the criteria to be observed when planning and developing new areas as well as the criteria targeted for old areas. 3. Lay down the criteria and conditions, which owners of projects and establishments must observe before the start of construction and during the operation of these projects. 4. Draw up a comprehensive list of national institutions and organizations as well as of qualified individuals who could contribute in the preparation and execution of environmental protection programmes and could be made use of in preparing and implementing the projects and studies undertaken by the Agency. 5. Conduct field follow-up of compliance with the criteria and conditions that are binding to agencies and establishments and take procedures prescribed by law against those who violate such criteria and conditions.

	<ol style="list-style-type: none">6. Lay down and follow up the rates and percentages necessary to ensure that permissible levels of pollutants are not exceeded.7. Gather national and international information on the environmental situation and changes affecting it on a periodical basis in cooperation with the information centers of other agencies, publish such information and evaluate and utilize it in environmental management and planning.8. Lay down the principles and procedures for assessing the environmental effects of projects.9. Prepare an environmental contingency plan in the manner stated in article 25 of this Law and coordinate with the competent bodies in the preparation of programmes to face environmental disasters.10. Lay down a plan for environmental training and supervise its implementation.11. Participate in the preparation and implementation of the national programme for environmental monitoring and make use of the data provided thereby.12. Compile and publish periodic reports on the main environmental indicators.13. Prepare programmes for the environmental education of the public and assist in their implementation.14. Coordinate with other competent authorities in connection with regulating and setting safety standards for the conveyance of hazardous materials.15. Administer and supervise natural protectorates.16. Prepare the draft budgets required for the protection and promotion of the environment.17. Follow up the implementation of international and regional conventions related to the environment.18. Propose economic mechanisms to encourage different activities and procedures for the prevention of pollution.19. Implement pilot projects for the preservation of natural
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	<p>resources and the protection of the environment from pollution.</p> <p>20. Coordinate with the Ministry for International Cooperation to ensure that projects funded by donor organizations and countries are in line with environmental safety considerations.</p> <p>21. Participate in laying down a plan to protect the country from leakages of hazardous substances and wastes causing environmental pollution.</p> <p>22. Participate in the preparation of an integrated national plan for the administration of coastal areas on the Mediterranean Sea and the Red Sea in coordination with the authorities and ministries concerned.</p> <p>23. EEAA shall formulate standards and regulations regarding the protection of the ozone layer from an environmental conservation point of view.</p> <p>24. Participate with the Ministry of Education in the preparation of training programmes for the protection of the environment within the scope of the various curricula in the basic education stage.</p> <p>25. Prepare an annual report on the environmental situation to be submitted to the President of the Republic and the Cabinet, a copy of which shall be deposited at the People's Assembly.</p> <p>As for hazardous substances MSEA and EEAA; set the national policy for chemical management including:</p> <ol style="list-style-type: none"> i. Control hazardous substances at the various stages of their life cycle to be regulated by adequate legal instruments. ii. Chemical risk communication necessitates harmonized classification and labeling of chemicals. iii. Preparation of an inventory in Egypt. iv. National plan for prevention of illegally imported HS. v. Environmentally safe and sound methods for reduction and control of chemical risks including possible development of non-toxic alternatives.
<p>Ministry of Health and Population (MoHP)</p>	<p>MoHP through its directorates and centers is involved in chemical safety. The MOHP regulates matters related to control of poisonous and deleterious substances, matters related to regulations of production, import, use or handling of chemical substances which may damage human health and also, matters related to regulations of</p>

	<p>household pesticides containing hazardous substances.</p> <p>The General Directorate of Occupational Health has a unit for chemical safety and keeps a register of hazardous chemicals used in Egypt. The role of the Occupational Health Department “Chemical Safety Unit” is ensuring the Safe handling of chemicals throughout the whole process (importation, transportation, storage, use and waste management).</p> <p>The Function of the Chemical Safety Unit in MoHP is:</p> <ol style="list-style-type: none"> 1. It supervises chemical safety in work places and keeps record of cases of chemical intoxication that are treated in the MOHP hospitals. 2. Evaluating these substances and cases, putting preventive measures to the whole process and reporting to the authorized agencies to avoid exposure of Egyptian citizens to these hazards. 3. Technical supervision and assistance for 5 poisons information and management centers at 5 governorates, which serve other neighbor governorates which mange cases of chemical poisoning. 4. Raise public awareness by different means. 5. Carry out researches and training. 6. Implementation of toxic vigilance program (related to chemical safety with WHO). 7. The Directorate of Emergency Medical care: responsible for ambulance and the immediate care for the cases of chemical intoxication.
<p>Ministry of Manpower and Immigration</p>	<p>This Ministry is responsible for the administration and enforcement of Law No. 137 of 1981 and its related decrees concerning labor and industrial safety protection of industrial working environment. The Factories Inspectorate Department has a specialized wing on Occupational Safety and Health, acting to enforce this law. This legislation is aimed at protecting workers against occupational accidents and diseases. The department carries out systematic inspections of all premises covered by the factories act, i.e., factories, construction sites, and general engineering construction workers, the inspectors assess the risks of the exposure to workers from chemicals and physical hazards and also biological, physiological, mechanical and psychological hazards. Also, it regulates matters related to ensure standard and measures to prevent health impairments to worker (working environment) due to chemical substances.</p>
<p>Ministry of Agriculture</p>	<p>The Ministry of Agriculture provides services to farmers in animal and crops producers and, also administers fertilizers and pesticides, to control the importation and use of fertilizers and pesticides through different departments to prevent plant diseases and pests from inside</p>

	<p>and outside the country. The Ministry of Agriculture regulates pesticides through the Supreme Committee for Pesticides. Also this department test and control services administer to general animal health and diseases monitoring and control. Specialized departments provide services through contact with farmers. It acts to prevent the introduction of plant pests and diseases from inside and outside the country. The department of Veterinary and Taste Control Services administers the taste act, in addition to general animal health and disease monitoring and control.</p> <p>Furthermore, it regulates establishment of standards for holding registration and the usage restriction on agricultural chemicals from an environmental conservation view. Also, it setup regulations and standards regarding the prevention of soil contamination.</p>
<p>Ministry of Industry and Foreign Trade (MIFT)</p>	<p>The Ministry of Industry has the responsibility for:</p> <ol style="list-style-type: none"> 1. Registration of projects after review of all aspects including the chemical used especially for chemical projects. 2. Issuing permits for import, manufacturing, trade and marketing of chemicals. 3. Issuing permits for importing hazardous substances for industrial firms according to registered capacity and for commercial firms serving these industries. 4. Analysis of industrial products for ingredients and standards. 5. Issuing standards for chemicals and chemical products. 6. Preparing lists of imported hazardous substances. 7. Issuing permits for chemical stores and their inspection. 8. The Minister of Industry in consultation with the Ministers of health and Environment defines places and methods of hazardous industrial waste disposal. 9. Also, Ministry of Industry ensures the enforcement of the Law concerning the evaluation of chemical substances and regulations of their manufacture, etc. 10. Furthermore, Ministry of Industry conduct researches related to the risk assessment of chemical substances. <p>Moreover, in 1999, a Ministerial decree was issued by the Ministry of Industry which restricts the handling of 145 toxic substances without permission. A database on hazardous substances and toxic chemicals in industry was established. Also, the Ministry of Industry participated in preparing the work plan for a national strategy for dealing with hazardous wastes and toxic chemicals' and also participated in a workshop jointly with the WHO and other Ministries to discuss the national programme on the chemical safety.</p> <p>While the department of the foreign trade monitors and controls</p>

	<p>the importation and exportation of goods to ensure that only registered products are imported into country. In addition, a Sub-Committee on Trade and Environment affiliated to the National Committee on enforcement of the WTO agreements, chaired by the Ministry of Economy and Foreign Trade was established in early 1995. The Sub-Committee is in charge of following up and feeding back the working group on trade and environment, under the WTO, and of communicating with the Egyptian authorities concerned in this respect. Furthermore, it regulates matters related to the promotion, improvement and coordination of import/export, production, distribution and consumption of chemical substances and products, etc.</p>
<p>Ministry of Housing Utilities and Urban Communities (MoHUUC)</p>	<p>MoHUUC issues standards and safe procedures for industrial, commercial and other work places, which are implemented by the inspectors of the Ministry of Manpower. Also, it regulates matters related to controlling the disposal and treatment of domestic waste water and matters related to the formulation of standards and regulations regarding the maintenance and management of the sewage system's back-end treatment plants as well as the implementation of such regulations from an environmental conservation point of view.</p>
<p>Ministry of Water Resources</p>	<p>The Ministry of Water Resources and Irrigation MOWR is mandated to control and manage all fresh water resources in Egypt including the surface and subsurface water. In addition to construction, supervision, operation, and maintenance of all the irrigation structures and drainage networks, the Ministry is also responsible for providing all other sectors with their needs of good quality fresh water in due time. Where, it implements legislations to protect the Nile River and waterways from pollution with all kinds of wastes. Law 4/1994 refers to Law 48 of 1982 for pollution abatement on the water resources in Egypt in collaboration with other concerned Ministries. Law 12, 1984 is the law governing the management and operation of the irrigation and drainage systems in Egypt. Permits may be issued for the disposal of treated liquid wastes provided certain standards are observed.</p> <p>The Minister of Water Resources issues standards after consultation with the Minister of Health. Regular inspections of the wastes disposed of in the waterways are carried out with the assistance from the Surface Water Police and the Ministry of Health and Population in order to control the disposal and correct treatment of industrial wastewater. Furthermore, it formulates standards and regulations regarding groundwater contamination aiming to prevent its contamination.</p>

Ministry of Petroleum	Ministry of Petroleum implements chemical safety precautions in petroleum companies and has its own emergency plan for dealing with oil spills.
Civil Defense Authority	The role of this authority is to design buildings inside which hazardous substances are to be produced or stored conforms to the engineering standards to be observed for each type of such substances, as determined by a decree to be issued by the Minister of Housing after consulting the EEAA where these buildings are subject to periodic inspections. Also, transport or the storage sites of such hazardous substances to guarantee that no harm shall come the environment or to the health of employees or citizens. Furthermore, it sets-up an emergency plan in place to confront any potential accidents which may occur during the production, storage, transportation or handling of such substances, provided the plan is reviewed and approved by the licensing authority after consulting the EEAA.
Ministry of Interior	Ministry of Interior sets and approves plans for emergency actions, trains personnel, inspects sites suspected to have a potential risk and co-operates with other agencies in case of emergency. Also it regulates matters related to treatment of explosive wastes; also it is responsible for issuing licenses required for the production, transportation, handling and usage of explosives substances. Moreover, Ministry of Interior issued a list of hazardous substances that are under its control.
Custom Authority and the General Organization for Control of Export and Import	They make sure that all imported chemicals comply with specifications and that restricted chemicals are not permitted. They cooperate with agencies for which these chemicals are imported.
General Organization for Investments and Free Zones	It observes safety procedures in establishments that are set under the Investment regulations. Moreover, General Organization for investment is taking the necessary steps to set-up its own hazardous substances list.

6. Current Practices and Gaps on Industrial Chemical Accident Management in the High Risk Subsectors

Chemicals are used virtually in all work activities, thus presenting certain chemical risks in a large number of workplaces all over the world. Thousands of chemicals are used in substantial quantities, and many new chemicals are also introduced into the market each year. It is therefore an urgent task to establish a systematic approach to safety in the use of chemicals at work. An effective control of chemical risks at the workplace requires an efficient flow of information from the manufacturers or importers to the users of chemicals on potential hazards and on the safety precautions to be taken. This flow of information should be followed by daily action by employers to ensure that the necessary measures are taken to protect workers, and consequently the public and the environment.

6.1 Industry Safety Management

According to Egyptian law, the owner of the industrial facility is responsible of taking the necessary actions to identify the risks in the facility and to minimize them as much as possible. However, on actual bases personal protective devices are used only if the exposure to chemicals cannot be avoided by any other means.

Also, the worksite must be prepared so as to ensure safety in storage and exposure to chemicals which can cause ill-health or chemical accidents. The Egyptian environmental law has defined an approximately 600 chemicals limit value. When the concentration of these chemicals is less than the limit value, the worker is thus protected from ill health.

The Egyptian Environmental Affairs Agency (EEAA) (Environmental inspection sector) is responsible for the inspection process on the industrial sector to ensure the occurrence of the personal protective devices in the industrial facility and to ensure the lower concentration of the environmental pollutants such as chemicals limits value in the work environment and in the surrounding area.

In order to ensure the industry safety management in the workplace and for the purpose of accidents prevention, health and safety information on chemical substances must be available and clear for all workers in the industrial facility. In the Egyptian industrial facilities, some of the owners facilitates all the necessarily data about health and safety information on chemical substances for the workers.

6.2 Emergency Preparedness Practices (Emergency Plans)

The emergency plan is defined as a formal written plan which, on the basis of identified potential accidents at the installation together with their consequences, describes how such accidents and their consequences should be handled either on site or off site. An effective control of chemical risks at the workplace requires an efficient flow of information from manufacturers or importers to users of chemicals on potential hazards and on the safety precautions to be taken. This flow of information should be followed by daily action by employers to ensure that the necessary measures are taken to protect workers, and consequently the public and the environment. According to the Egyptian Environmental Law No. (4/1994), each industrial facility should conduct an emergency plan according to the nature of the production process, used raw materials, products and type of technology. However, for more than 95% of the Egyptian industries, these emergency plans are not applied on the practical basis and most of the times there is no training for employees.

6.3 Description of Chemical Codes of Practice

The code of practice is defined as a document offering practical guidance on the policy, standard setting and practices in occupational and general public safety and health for use by governments, employers and workers in order to promote safety and health at the national level and at the level of the installation. A code of practice is not necessarily a substitute for existing national legislation, regulations and safety standards.

The objective of any code of practice is to protect workers from the hazards of chemicals, to prevent or reduce the incidence of chemically induced illnesses and injuries resulting from the use of chemicals at work, and consequently to enhance the protection of the general public and the environment by providing guidelines for:

- a) Ensuring that all chemicals for use at work, including impurities, by-products and intermediates, and wastes that may be formed, are evaluated to determine their hazards.
- b) Ensuring that employers are provided with a mechanism for obtaining from their suppliers information about the chemicals used at work to enable them to implement effective programmes to protect workers from chemical hazards.
- c) Providing workers with information about the chemicals at their workplaces and about appropriate preventive measures to enable them to participate effectively in safety programmes.

- d) Establishing principles for such programmes to ensure that chemicals are used safely.
- e) Making special provision to protect confidential information whose disclosure to a competitor would be liable to cause harm to an employer's business so long as the safety and health of workers are not compromised thereby.

The following are some of the International Policy Instruments for Management of chemicals and hazardous chemicals for the purpose of accidents prevention:

- FAO International Code of Conduct for the Distribution and Use of Pesticides (1985)
- The Montreal Protocol on Substances that Deplete the Ozone Layer (1987).
- UNEP London Guidelines for the Exchange of Information on Chemicals in International Trade (1989).
- Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal (1989).
- ILO Convention on the Safety of Chemicals at the Workplace (1990).
- ILO Convention Concerning the Prevention of Major Industrial Accidents (1993).
- OPCW Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and their Destruction, CWC (1993)
- The Rotterdam Convention on the Application of the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998).
- The Stockholm Convention on Persistent Organic Pollutants (POPs) (2001).
- The Strategic Approach to International Chemicals Management (SAICM) (2006).

6.4 Chemical Accidents in Egypt

Many chemical accidents in Egypt have highlighted the potential hazards inherent in many industrial operations. Many accidents, both large and small, are preventable. For accidents that occur, much can be done to reduce the seriousness of the consequences. In particular, potential victims of large-scale accidents can be informed of the best way to act if an accident should occur so as to minimize the risks.

Ministry of Interior– Civil Defense Authority is the main responsible body in Egypt for controlling chemical accidents. In accordance with Law No 148 of 1959, the Civil Defense Department is in charge of disaster management to fulfill its duties. The Service may mobilize civil defense units and can call on and reinforce units from other ministries and agencies.

The Civil Defense covers also disasters prevention and protection of the infrastructure so as to ensure the correct functioning of the country's social and economic activities.

This also involves protecting the cultural and historical heritage and public establishments during war as well as during peace.

For preventing industrial accidents, it is necessary for the State, employers, workers and all parties concerned with an integrated manner to comprehensively and systematically implement the preventive measure

Industrial Accidents

Common causes for industrial chemical accidents are deficiencies in safety management systems and human errors. Chemical accidents result in fire, explosion and/or toxic release. The nature of chemical agents and their concentration during exposure ultimately decides the toxicity and damaging effects on living organisms in the form of symptoms and signs like irreversible pain, suffering, and death.

In Egypt, there is no consistent database which would be suitable for detailed analysis of accidents. However, there are few data about some known accidents in chemical plants in Egypt which were published in the newspapers. The following table (Table2) shows some of well known chemicals accidents in Egypt (unfortunately, many details of these accidents such as casualties or extent of damage are not available):

Sector	Location	Accident	Cause
Petroleum	Suez	large explosion and fire	Some workers at the refinery reported that they saw a car burning shortly before the explosion of the first butane tank.
Paints	6 th of October City	Fire in the production area	Human error in the alkyd resin production area
Chemicals	6 th of October City	Leakage of Chlorine gas	Poor storage of Chlorine gas cylinders
Paints	Port Saed	Explosion in the storage area	Storage of Nitro Cellulose in an open area with the direct exposure to the sun light
Petroleum	Alexandria	Leakage of Ammonia gas	Failure in the system

Table2: Example for Chemical Accident Cases in Egypt

** A collective database of chemical accident in Egypt has to be developed on national level through strengthening the co-operation between different stakeholders as there is no common database available*

Transportation Accidents

Many of chemical accidents in Egypt have been associated with tankers carrying petroleum products, concentrated acids and chlorine. It should be mentioned that EEAA with the cooperation of the Egyptian Environmental Policy Program (EPPP) has developed a guidelines for the transportation of hazardous waste including permission for hazardous waste transportation (requirements, license, means of transportation), manifest system and labeling system. Most of the published chemical accidents in the newspapers are published without mentioning the name of the facility that's why we don't have a well developed chemical accidents database.

7. Overview of National Systems, Existing Laws, Regulations and Policies For Chemical Accidents Prevention and Preparedness

The aim of this chapter is to provide an overview of the existing laws, legal instruments, programmes, policies and related activities, which are available in Egypt to provide information to the public concerning the potential risks associated with all stages of the chemical life cycle. The understanding by the workers and the public, of characteristics of substances that they deal with on a day to day basis is one of the important ways by which accidents may be avoided. Workers knowledge of the likelihood of adverse effects that may result from handling of chemical substances brings out the sense of alertness.

The need to control using of chemicals is one of the ways through which chemical risks to humans and the environment can be adequately managed. The control should be done through legislation, regulations and guidelines. Legislation outlines a broad environmental protection and provides principles, powers and rights creating an "umbrella" for environmentally sound management of chemicals and other hazardous substances and wastes. Such legislation gives the government the power to enact specific rules and regulations to inspect and enforce, and to establish penalties for violations. Annex (4) provides a list of all laws, regulations and standards and/or other legal instruments associated with chemicals management and control in order to prevent or avoid a lot of chemical accidents. Moreover, the table focuses on the scope and objectives of each law, responsible ministries and provided legal instruments.

Egypt has issued a large number of environmental legislations and regulations governing importing, manufacturing, trade, usage of chemicals covering different areas as indicated in Annex (4). Also Egypt has issued regulations regarding the workers safety in the field of dealing with Chemicals and chemicals waste.

Environmental Law No 4/1994 (Some provisions of Law No 4 were amended by Law No 9/2009) and its Executive Regulations is consider the main legal framework that regulates and controls hazardous substances and wastes management in Egypt. Of particular interest is the Environmental Law No. 4 /1994 and its Executive Regulations issued in February 1995, which regulates the management of hazardous substances including chemicals.

Law No 4 /1994 and its Executive Regulations include several articles which relate to the handling of hazardous substances and hazardous waste in addition to articles which ensure workers safety in chemical plants. The following part indicates some of the articles in Law No 4/1994 regarding the management of chemicals:

The Law No 4 of 1994 and its Executive Regulations are the most related regulations governing chemicals substances and hazardous waste management.

In general, the Law No 4 and its Executive Regulations control the hazardous waste which is generated and handled inside Egypt, including hazardous chemicals substances management. The law presents definitions for the terms of hazardous substances and hazardous wastes as following:

- Hazardous Substances: "Substances having dangerous properties which are hazardous to human health or which adversely affect the environment, such as contagious, toxic, explosive or flammable substances or those with ionizing radiation.";
- Hazardous Waste: "Waste of activities and processes or their ashes which retain the properties of hazardous substances and have no subsequent original or alternative uses, like waste from medical treatments or waste resulting from the manufacture of any pharmaceutical products, drugs, organic solvents, printing fluid, dyes and painting materials.".

Article 25 of the Executive Regulations identifies six competent authorities, also defined as "line ministries": the Ministry of Industry, the Ministry of Agricultural, the Ministry of Health, the Ministry of Petroleum, and Authority for Nuclear Energy in the Ministry of Electricity and the Ministry of Interior.

Each Ministry, in coordination with EEAA, is responsible for issuing hazardous substances and waste lists and for the permit issuance procedures for hazardous waste handling in its area of their respective responsibility.

Furthermore, all the Egyptian industrial enterprises or facilities are obliged according to Law No 4/1994 to have an environmental register describing the input and output of the production process activities. This includes the types and quantities of generated wastes and its handling. Furthermore all the industrial enterprises are obliged to have an authorized list for the chemicals used by the company including its Material Safety Data Sheets (MSDS). Additionally, it is obligatory that the companies must have what so called Hazardous Waste Register which must include for all types of the generated hazardous wastes from the company activities and also the ways of handling and management of such type of wastes

7.1 Enforcement Capacity for chemical Accident Prevention

The responsibility of inspection is divided between the Ministry of State for Environment Affairs (MSEA)/EEAA, the Ministry of Interior/ Egyptian General Administration of Civil Protection, the Ministry of Industry and Foreign Trade/Industrial Development Authority (IDA), the Egyptian Industrial Control Authority (ICA) and the Egyptian Organization for Standardization and Quality (EOS) in addition to the stockholders which are listed below.

The following table describes the responsibilities of each stakeholder and types of inspection within their responsibility:

The Entity	Type of Environmental Inspection	Measurements and Analyses
EEAA and its Regional Branch Offices RBOs	Multimedia inspection	In the laboratories of the Regional Branch Offices RBOs and the Central Laboratory of EEAA.
The Environmental Management Units (EMUs) in the Governorates	Multimedia inspection	_____
Ministry of Manpower and Immigration	Inspection of the working environment (the Safety and Occupational Health)	The inspectors are equipped with equipments for measuring the parameters of the working environment only.
Ministry of Public Works and Water Resources (Ministry of Irrigation)	Wastewater from industrial establishments being discharged into the Nile,	The wastewater is analyzed in the laboratories of the Ministry of Health upon a request from the Ministry of

	canals, etc.	Public Works and Water Resources.
The General Organization for Sanitary Drainage	Wastewater for industrial establishments discharging into public sewer system	In laboratories of the Ministry of Health upon a request from the General Organization for Sanitary Drainage

The inspectors in EEAA and its RBOs with their different authorization (those possessing judicial impoundment and those possessing administrative impoundment) are responsible for protecting the environment from pollution resulting from industrial establishments. The stipulations of Law No 4/1994 regarding environmental compliance of industrial establishments is presented as follows:

Entry to the establishment and periodic follow-up of the environmental register that reflects the impact of the establishment activities on the environment (environmental register) and to take the necessary samples, carry out the required tests to investigate the effect of these activities and to insure the compliance of the establishment with the set standards for environmental protection, in accordance with articles 5 and 22 of law 4/1994 and articles 17 and 18 of its executive regulations. The allowable limits were also set by the law and are stated in the annexes of the executive regulations.

Hazardous Substances and Wastes, Law No 4/1994 has set specific rules and conditions for handling hazardous substances and wastes (article 29-33 from the law and articles 25-33 of the executive regulations). The environmental inspector is responsible for following-up on the compliance of the establishments with these articles.

Ministry of Interior/ Egyptian General Administration of Civil Protection:

The main role of the Egyptian General Administration of Civil Protection is protecting the population, prevention and reduction losses and harmful effects, conduction rescue and emergency activities, establishing the necessary conditions for survival and support in cases of disasters, accidents, and catastrophes.

Ministry of Industry and Foreign Trade/Industrial Development Authority (IDA):

The main responsibility of the Industrial Development Authority (IDA) is providing the chemical warehouse licensing. The inspection activity is carried out in case for renewal / modification approval of (toxic / non-toxic) chemical warehouse licensing.

All the specifications are in accordance with minister Decree No. 138 / 1958 and No. 851 / 2006.

Ministry of Industry and Foreign Trade/ Egyptian Industrial Control Authority (ICA):

The main services of the Industrial Product Quality Control are as follows:

- Periodic and continuous inspection on quality systems and production units to provide necessary technical advice to make any adjustments needed and necessary to the existing systems.
- Inspection of the various stages and even the stage of final product.
- Random samples of the final product or production stages preceding it if necessary and it is sent to competent laboratories (Chemistry Department - Ministry of Health laboratories - the labs specifications and quality) for analysis and review of the extent of compliance with the Egyptian standard specifications.
- Take the necessary legal action against non-conforming product.

Ministry of Industry and Foreign Trade/Egyptian Organization for Standardizations and Quality (EOS)

EOS is considered as the competent body in Egypt responsible for granting quality and conformity marks as well as conformity certificates for industrial commodities and products according to the Egyptian and foreign standards. The General Department for Quality is considered the consulting department for establishments, industrial companies, and bodies in the fields of industrial quality control and quality assurance and environmental management.

The main tasks of EOS in respect of quality are determinates according to the decree of establishing EOS as follows:

- Providing the appropriate means to achieve the conformity of raw materials, industrial commodities and products to the approved standards including technical researches, studies, controlling and technical inspection, drawing samples and testing them, evaluating the testing results and issuing conformity certificates for the approved standards and the required marks.
- Granting quality marks for the local industrial products to be conformed to Egyptian standards.
- EOS is Egypt communication and enquiry point concerned with providing and exchanging information related to conformity assessment procedures on the national, regional and international levels.

- Providing technical consultations for industrial establishments, companies and bodies in the fields of industrial quality control, quality assurance and environmental management systems.
- Verifying the accuracy of measurement and testing instruments used in industrial units in all sectors.
- Training technicians in concerned bodies on the relevant quality and standards activities, as well as holding relevant local and international conferences.
- Representing Egypt in the international and regional organizations concerned with standards, following up their activities and coordinating quality activities in Egypt with their corresponding abroad.
- Issuing periodicals and brochures concerned with EOS activities in the field of quality control.

The general department for quality undertakes the following activities:

- Inspecting products Licensed for quality mark
- Inspecting products applying for quality mark License.
- Inspecting products applying for conformity certificates.
- Inspecting safety and security products in the field of engineering industries to obtain conformity mark.
- Inspecting products applying for their prototype adoption.
- Inspecting the required technical studies for licensing boilers.
- Inspecting trucks.

- Overview of Inspector's Average Level of Training

Environmental Education, Training and Awareness

Awareness is an important tool for the sensitization of public opinion to environmental issues and challenges. In this respect, Ministry of State for Environmental Affairs (MSEA), together with its executive institution, the EEAA, regard this issue as a priority, realizing the significant role public awareness can play in promoting sound environmental practices. Moreover, putting principles of sound environmental management and protection into practice requires the presence of a solid base of capacities, both within the MSEA and EEAA, as well as within other governmental, academic, private and voluntary organizations. To this end, continuous support is provided to environmental training and awareness activities and initiatives.

The effectiveness and efficiency of the system could be improved by:

- Setting protocols between the ministries and the different institutions concerned with the environmental inspection.
- Coordination between different inspection entities in preparing the inspection plans. This could be achieved through setting common general principles.
- Exchange of information between the different inspection entities, taking into consideration that EEAA and its RBOs should be acting as the information node, thus enabling it to carry out its important national duty of protecting the environment in Egypt.

- Awareness and Capacity for Enforcing Regulations on Civil Protection

The National Civil Protection Conference was organized by the General Administration of Civil Protection, in Cairo, Egypt. The main objectives of the conference were to identify how to provide better civil protection services to the Egyptian population, to identify the key problems encountered by civil protection officers in their daily work and to discuss possible solutions.

During the event, the existing laws and regulations for civil protection in Egypt were reviewed and gaps were identified along with the requirements for necessary developments and improvements. Currently available civil protection capacities in the Egyptian governorates were assessed along with the required enhancements. In this respect all conference participants agreed that additional resources are necessary to enhance disaster preparedness and response at local level all around the country.

The participants also addressed the importance to improve the collaboration and coordination with the scientific sector in view to increase the National Civil Protection capacities for prevention, preparedness and response to natural and man-made disasters. This improved collaboration requires development and utilization of new technological tools, in particular early warning systems, new working procedures and the development of technical capacities within the institution.

A better “operational planning” effort will ensure an enhanced working mechanism among different forces involved in civil protection. In addition to that, the importance of increasing awareness raising initiative, mostly addressed to housewives, school children and factories was indicate as a national priority.

8. Current Programs and Initiatives aimed at Improving Chemical Accident Prevention and Preparedness focusing on SMEs

8.1 Existing Programs and Projects on Chemical Accident Prevention

Egypt has several programmes regarding chemical management and chemical accident prevention. Some of these programmes are:

- Safety in the Use of Asbestos
- Safety in the Use of Chemicals at Work
- Prevention of Major Industrial Accidents
- Intergovernmental Forum On Chemical Safety (IFCS)
- The Awareness and Preparedness for Emergencies at the Local Level (APELL)
- The Cleaner Production Program

Annex 2 shows the Participation of Egypt in International Agreements/ Procedures Related to Environmental Protection and Chemicals Management

Some of the projects held in Egypt to enhance chemical management and decrease accidents probability are below:

Name of project	International/ Bilateral Donor Agency Involved	National Contract Point	Relevant Activities
Egyptian Hazardous Substances Information & Management System (EHSIMS)	Swiss Agency for Development & Cooperation (SDC)	Egyptian Environmental Affairs Agency (EEAA)	The objective of this project is to initiate management system for hazardous substances in Egypt, through providing basic guidelines and information for the purpose of ensuring safe handling of such substances and through disseminating such information through an information network.
SEAM II	DFID	Egyptian Environmental Affairs Agency (EEAA)	SEAM aims at environmental management amelioration and protection in an integrated fashion in the Governorates of Dakahleya, Sohag, Qena and Damietta. Its main outputs are functional environmental management and planning systems in Sohag and Dakahleya (these systems are to be replicated in Qeana and Damietta by EEAA), poverty

			alleviation in the four Governorate, and enhanced communication participation and awareness.
Hazardous Waste Management Project in Alexandria	FINNIDA	Egyptian Environmental Affairs Agency (EEAA)	A pilot project to build a nucleus for the hazardous industrial waste, starting from the factories, through transportation, collection, temporary storage and disposal, ending with burring, treating and withdrawal.
Sitting Safe Landfill for Solid Waste Study	European Union	Egyptian Environmental Affairs Agency (EEAA)	The project main output is the preparation of a study of management and treatment of the industrial hazardous waste in Greater Cairo.
Oil Spill Combating Centers (Sharm El-Sheikh and Neweiba)	European Union	Egyptian Environmental Affairs Agency (EEAA)	The main objective of the project is to establish a center for prompt-response in the emergency cases, and to set procedures and mechanisms for oil spill combating in Gulf of Aqaba.
National Implementation	Global Environmental	Egyptian Environmental	The objective of this project is to

<p>Plan Project of POPs Convention (NIP)</p>	<p>Facilities(GEF)with the technical Cooperation of the United Nations Industrial Development Organization (UNIDO)</p>	<p>Affairs Agency (EEAA)</p>	<p>develop and formulate a National Implementation Plan (NIP) and there by strengthen national capacity and enhances knowledge and understanding amongst decision makers, managers, the industry, agriculture and the public at large on POPs. By achieving this objective Egypt will be prepared and able to meet its obligations under the Stockholm Convention on POPs according to Article (7) of the Convention.</p>
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<p>National awareness campaign for all stakeholders on the safe use and management of pesticides according to the international code of conduct on the distribution and use of pesticides</p>	<p>SAICAM</p>	<p>Day hospital institute for development & rehabilitation</p>	<p>Development and strengthening of national chemicals management institution, plans programmers and activities to implement the strategic approach, building upon work conducted to implement international chemicals related agreements and initiatives. Strengthening awareness rising on pesticides safe use and management according to the international Code of Conduct Distribution and Use of Pesticides. Increasing the capacity building on pesticides management and use through preparing highly qualified training teams in the area in several selected provinces to insure sustainability and following up awareness on the sound management and safe use of pesticides. Supporting minimizing or decreasing human health risks and environmental pollution problems which rose due to the misuse of pesticides. Promoting the necessary training and extension programmers and capacity building for all groups involved directly or indirectly with pesticides use and disposal.</p>
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8.2 Human Resources Availability for Accident Prevention.

The human resources availability for accident prevention in Egypt is divided into two levels. The first one is an industrial level which is represented by the internal designated staff in the facility. The facility is responsible for increasing awareness and capacity building of the employees, and it is responsible for maintaining and updating the emergency plan to keep pace with the development in the field of chemical accidents prevention. The second level is the government which is represented in the Civil Defense who are responsible for monitoring and inspecting the implementation the emergency plane in the facilities. The Civil Defense is affiliated to the ministry of interior.

8.3 Financial Allocation from the National Budget

Some Egyptian institutions or agencies have specific budget lines for accident Preparedness. However, these budgets are limited and sometimes are allocated in ad hoc bases to meet the need of the post incident impacts.

Some Ministries have earmarked budget, although limited, for disaster management as the Ministry of Social Solidarity. The Environment Protection Fund (EPF) is allocated by the Egyptian Environmental Affairs Agency (EEAA) to enhance, among several other activities, strategies for environmental disaster risk reduction. The Ministry of Health and Population has an annual budget for disaster risk reduction. Also CPA has similar budget.

9. Conclusions

It seems clear from this report that Egypt has intensive programmes/ efforts and expertise related to the field of chemicals management and chemical safety management but unfortunately there is lack of coordination and synergies between all these programmes and projects.

9.1 Responsibility for chemical accident prevention

The responsibility of chemical accident prevention and preparedness are divided between different ministries and organization. For example, the responsibility of inspection in Egypt is divided between the Ministry of State for Environment Affairs (MSEA)/EEAA, Ministry of Interior/ Egyptian General Administration of Civil Protection, Ministry of Industry and Foreign Trade/Industrial Development Authority (IDA), Egyptian Industrial Control Authority (ICA) and Egyptian Organization for Standardization and Quality at the Ministry of Industry and Foreign Trade .

9.2 Common Inspection Plan for Chemical Accident Prevention and Preparedness

There is no common plan for inspection chemical accident prevention however there are individual organization plan (e.g one for ministry of environment, one for ministry of industry but not common ones) with chemical accidents in Egypt.

9.3 Policies and strategies to promote chemical accident prevention and preparedness level

It seems clear that Egypt has different policies and strategies to promote chemicals management in general and tackle in it the chemical accident prevention but still need to harmonize and synergize all these policies and strategies to specifically promote chemical accident prevention

9.4 Legislation Level

There a number of Egyptian laws, codes and article to enforce and promote chemical accident prevention

9.5 Stakeholders level

There are a number of stakeholders are concerned the chemical accident prevention and preparedness in Egypt but still lacking join-cooperation and synergies especially in developing national plan for chemical accident prevention and preparedness and development of common and available data-base for chemical accidents in Egypt and its reasons and measures taken to avoid it.

9.6 Raising awareness and dissemination on Chemical Accident Prevention and Preparedness

There are a number of raising awareness and capacity building activities in Egypt and quit good infrastructure of expertise in the country but this need to be disseminated and up-scaled on national level

10. Way Forward

Based on the report of Mapping of Chemical Accident Safety Management and the ENCPC investigation we found that Egypt has a very professional expertise in the field of chemicals management (as the second largest producer for chemicals in Africa), whereas all the current activities are very much focused on sound chemical management and management of hazardous waste there is no adequate national plan (involving all relevant stakeholders in order to manage the chemical accident prevention and preparedness in appropriate way especially for SMEs and on industrial parks levels. In this context, Egypt National Cleaner Production Center (ENCPC) in collaboration with UNEP and other international organization (e.g International Labor Organization) having experiences in policies related for chemical accident prevention could work on fostering dialogue between relevant stakeholders on national level in Egypt for implementation of a National Chemical Accident Prevention and Preparedness Programme based on UNEP's Flexible Framework for Addressing Chemical Accident Prevention and Preparedness for Egypt with special focus on SMEs , which could contribute to the following expected results:

- Egypt common chemical accident database is developed;
- Risk reduction strategies are developed;
- Chemical accident risks are reduced therefore public health and safety is improved in the Country;
- Interagency coordination and cooperation on chemical accident prevention and preparedness is enhanced and sustained over the time in the Country;
- Knowledge on chemical accident prevention and preparedness is enhanced and stakeholders are frequently updating their strategies to cope up with impending chemical accident risks.

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Annexes

Annex (1)

Legislative Context in the Project Area

Article (33) of Law No 4/1994 and Article (31) form its Executive Regulations declares the required precautions in Producing or Handling the Hazardous Substances **where Article (33) of Law states:**

Those engaged in the production or circulation of hazardous substances, either in gas, liquid or solid form, are held to take all precautions to ensure that no environmental damage shall occur. The owner of an establishment whose activities produce hazardous waste pursuant to the provisions of this Law shall be held to keep a register of such waste indicating the method of disposing thereof, and the agencies contracted with to receive the hazardous waste. The executive regulations shall determine the data to be recorded in the said register and the EEAA shall be responsible for following up the register to ensure its conformity with the facts.

Article (31) form its Executive Regulations states:

Those in charge of the production or displacement of hazardous substances, whether in their gaseous, liquid or solid states, shall take all due precautions to ensure the non occurrence of any environmental damage, and shall be held in particular to observe the following:

- (A) That the site on which such substances are to be produced or stored is selected with due regard to the conditions prescribed according to the type and quantity of those substances.
- (B) That the design of the buildings inside which hazardous substances are to be produced or stored conforms to the engineering standards to be observed for each type of such substances, as determined by a decree to be issued by the Minister of Housing after consulting the EEAA. The said buildings shall be subject to periodic inspections by the licensing administrative body.
- (C) That the conditions prescribed in respect of the means of transport or the storage sites of such substances are provided so as to guarantee that no harm shall come to the environment or to the health of employees or citizens.

- (D) That the technology and equipment used in the production of such substances shall not result in damage to the establishment, the environment or harm to the staff.
- (E) That buildings shall be adequately fitted out with safety, alarm, protection, combat, fire-fighting and first aid systems and equipment, in the numbers and quantities determined by the Minister of Labor and Manpower after consulting the EEAA, the Ministry of Health and the Civil Defense Department in coordination with the competent administrative authority.
- (F) That an emergency plan is in place to confront any potential accidents which may occur during the production, storage, transportation or handling of such substances, provided the plan is reviewed and approved by the licensing authority after consulting the EEAA and the Civil Defense Department.
- (G) That staff in these establishments are subjected to periodic medical checkups and that they are treated for any vocational diseases at the expense of the establishment by which they are employed.
- (H) That establishments producing hazardous substances insure their workers for the amounts to be determined by a decree from the Minister of Manpower in coordination with the Ministry of Insurance and Social Affairs, after consulting the EEAA and the Ministry of Health, provided the amounts of the insurance take into account the degree of danger to which each category of workers is exposed inside each productive unit.
- (I) That workers handling such substances are informed of the dangers involved and of the necessary precautions to be taken when handling them, that they are fully aware of all this information and that they have received adequate training in this regard.
- (J) That the inhabitants of the regions surrounding the sites where hazardous substances are produced or handled are informed of the possible dangers of these substances and the method of facing such dangers, and that they are familiar with the alarm systems to be used in case of an accident and with the procedures to be followed on its occurrence.
- (K) Establishments producing and handling hazardous substances are held to compensate citizens injured in the locations surrounding the production or storage sites for injuries caused by accidents resulting from these activities or from harmful emissions or leakages there from. Those assigned to the production and handling of hazardous substances shall submit an annual report on the extent of their commitment in implementing the necessary precautions.

Article (32) from the Executive Regulations of Law No 4/ 1994 declared that establishments engaged in the production or importation of hazardous substances shall observe certain conditions, **where the article states:**

Container Specifications:

- (A) The type of container in which these substances are placed must be suitable for the type of substance therein, tightly closed and difficult to damage.
- (B) The capacity of the container must be easy to lift or transportation without exposing it to damage or harm.
- (C) The inner lining of the container must be made of a material that is not affected by storage throughout the period when the substances contained therein are active.

Container information:

- (A) Contents of container, their active substance, and the degree of its concentration.
- (B) Total and net weight.
- (C) Name of producer, date of production and production number.
- (D) Nature of danger and symptoms of toxicity.
- (E) First aid procedures to be taken in case of exposure.
- (F) Safe method of opening, emptying and using container.
- (G) Safe storage method.
- (H) Methods of disposal of empty containers.

All the information shall be written in Arabic in a style that is easy for an ordinary person to read and understand, and the words must be legible and prominently displayed on the container. They must be accompanied by diagrams indicating the method of opening, emptying, storing and disposing of the containers as well as by the international symbols for danger and toxicity.

Moreover, environmental Law No 4/1994 and its executive regulation setup the legislations relative to hazardous wastes, which define environmental impairment, hazardous materials, wastes, and hazardous wastes.

Articles concerning hazardous waste are fully mentioned below.

Article (28): The management of hazardous wastes shall be subject to the following rules and procedures:

1- Engendering Hazardous Waste:

The establishment, which engenders hazardous waste, shall be held to do the following:

A- Try hard to reduce the rate at which such waste is produced, both quantitatively and qualitatively, by developing the technology used, employing clean technology and selecting alternatives for the primary product or the raw material which are less harmful to the environment and public health.

B- Categorize the wastes produced, in terms of both quantity and quality, and register it.

C- Establish and operate units to treat waste at source, provided the EEAA approves the treatment system as well as the technical specifications of these units and their operational programmes. In case of a difficulty of treatment or disposal of hazardous waste at source, the establishment producing such waste shall be held to collect and transport it to the disposal sites determined by the local authorities and the competent administrative and environmental bodies. The displacement of such waste shall be subject to all the conditions and provisions prescribed in this respect by these Executive Regulations.

2- Stage of Collecting and Storing Hazardous Waste:

A- Determine specific locations for the storage of hazardous waste meeting safety conditions to prevent the occurrence of any harm to the public or to those persons exposed to such waste.

B- Store hazardous waste in special containers made of a solid, non-porous, leak- proof material. These containers are to be hermetically sealed and their capacity must be commensurate with the quantity of hazardous waste stored therein or conform to the standards set for the storage of such waste according to type.

C- Place a clear sign on the hazardous waste containers indicating their contents and warning of the dangers, which may result from handling them imprudently.

D- Lay down a schedule for the collection of hazardous waste so that it is not left for long periods in the storage containers.

E- Producers of hazardous waste shall be held to provide the above-mentioned containers, wash them after each use and not place them in public places.

3- Stage of Transporting Hazardous Wastes:

A- It is prohibited to transport hazardous waste by other than = means of transport run by the establishments licensed to manage hazardous waste. Those means of transport must meet the following conditions:

1. Transport trucks shall be fitted with all safety equipment and shall be in good working condition.
2. The capacity of such trucks and their shift schedule shall be commensurate with the quantities of hazardous waste.
3. They shall be driven by trained drivers capable of taking independent initiatives, particularly in emergencies.
4. They shall bear clear signs indicating the dangerous nature of their cargo and the best manner of dealing with emergencies.

B- Routing of trucks transporting hazardous waste shall be determined and civil defense bodies shall be immediately notified of any changes therein, so as to enable them to act rapidly and decisively in emergencies.

C- Trucks transporting hazardous waste shall be prohibited from passing through residential and other populated areas and through the city centre during daytime.

D- The address of the garages where hazardous waste trucks are parked, as well as the number and date of their license must be notified to the competent authority.

E- Trucks transporting hazardous waste must be washed and sterilized after each use in accordance with the directives issued by the Ministry of Health in coordination with the competent administrative body designated in Article (40) of these Executive Regulations.

4- The following must be observed when authorizing the passage of ships carrying hazardous waste:

A- Prior notification is a requisite. The competent administrative body shall be entitled to withhold authorization if there is a risk of environmental pollution.

B- In case of authorization, all necessary precautions as prescribed in international conventions must be taken, and the ship must have the guarantee certificate referred to in Law No. 4 of 1994.

5- Stage of Treatment and Disposal of Hazardous Waste:

A- The sites selected to house utilities for the treatment and disposal of hazardous waste shall lie at a distance of at least three kilometers from populated and residential areas, and shall be held to meet the conditions and provide the equipment and installations set forth below:

1. The area of the site must be proportionate to the quantity of hazardous waste so that such waste does not remain in storage for extended periods.
2. The site shall be encircled with a brick wall standing at least 2.5 meters high.
3. The site shall be provided with more than one gate of suitable width, allowing the easy entry of trucks transporting hazardous waste.
4. The site shall be provided with a water source and W.C. facilities.
5. The site shall be provided with all the protection and safety requirements prescribed in labor and vocational health laws, as well as with a telephone line.
6. The site shall be provided with all the mechanical equipment, which can facilitate the work process.
7. The site shall be provided with warehouses equipped to preserve hazardous waste pending its treatment and disposal. Equipment shall differ according to the type of hazardous waste received by each utility.
8. The utility shall be provided with an incinerator for burning certain type of hazardous waste.
9. The utility shall be provided with the necessary equipment and installations for sorting and classifying certain types of hazardous waste with the intention of reutilizing and recycling them.
10. The site shall have a sanitary ditch of an adequate capacity for burying the incinerated remains.

B- Processes for the treatment of hazardous waste, which may be reused and recycled, shall be carried out within the following framework:

1. Reutilization of some hazardous waste as fuel to generate energy.
2. Recovery of organic solvents and their reutilization in extraction processes.
3. Recycling and reusing some organic substances from hazardous waste.
4. Reusing ferrous and non-ferrous metals and their compounds.
5. Recycling and reusing certain non-organic substances from hazardous waste.
6. Recovery and recycling of acids or alkaline.
7. Recovery of substances used in reducing pollution.
8. Recovery of certain components of ancillary elements.

9. Recovery of used oil and reutilizing it after its refinement, with due consideration to the relationship between environmental and economic returns.

C-Processes for the treatment of hazardous waste, which cannot be reutilized and recycled, shall be carried out within the following framework:

1. Injecting hazardous waste amenable to pumping into salt mines, wells and natural reservoirs in areas far from residential and populated areas.
2. Burying hazardous waste in pits specially prepared for this purpose and isolated from the other components of the environmental system.
3. Types of living micro-organisms to bring about its decomposition.
4. Treating hazardous waste physically or chemically by evaporation, dilution, calcification, assimilation, sedimentation, etc.
5. Incineration in special incinerators designed to prevent the emission of gases and fumes into the surrounding environment.
6. Permanent storage (such as placing hazardous waste containers inside a mine).

D- Setting a periodic programme to monitor the various components of the environmental system (organic and non-organic) in the sites of utilities and their surroundings for the treatment and disposal of hazardous waste. Licenses shall be withdrawn and work in the utility suspended upon the appearance of any indications of damage to the eco-systems surrounding the utility.

E- Establishments licensed to handle and manage hazardous substances and waste shall be responsible for any damage caused to third parties as a result of non-compliance with the provisions of these Executive Regulations.

Article (29)

The Executive Regulations of Law No 4/1994 stated that:

It is prohibited to construct any establishment for the purpose of treating hazardous waste except with a license issued by the competent governorate after consulting the EEAA, the Ministry of Health, the Ministry of Labor and Manpower, and the ministry concerned with the type of waste according to the provisions of Article (25) of these Executive Regulations, after ensuring that such establishment satisfies all the conditions which guarantee the safety of the environment and the staff employed thereat.

Disposal of hazardous waste shall be effected in accordance with the conditions and criteria prescribed in Article (28) of these Executive Regulations.

The Minister of Housing, after consulting the ministries of Health and Industry and the EEAA, shall determine the locations and conditions for the disposal of hazardous waste.

Article (30)

It is prohibited to import hazardous waste or to allow its entry into or passage through the territory of the Arab Republic of Egypt.

It is prohibited, without a license from the competent administrative department in the Ministry of Maritime Transport or in the Suez Canal Authority, each within the scope of its competence, to allow the passage of ships carrying hazardous waste, in the Territorial Sea or the Exclusive Economic Zone of the Arab Republic of Egypt, provided the EEAA is notified withal.

Article 37

It is prohibited to throw, treat or burn garbage and solid waste except in special sites designated for such purpose which are far from residential, industrial or agricultural areas as well as from water-ways. The executive regulations of this Law shall determine the specifications and conditions of such sites and their minimum distance from the areas referred to hereinabove.

Local units shall, in agreement with the EEAA, designate the sites for burning, throwing or treating garbage and solid waste according to the provisions of this article.

Article 47:

The level of radioactivity or concentration of radioactive substances in the air shall not exceed the permissible limits as determined by the competent authorities in accordance with the executive regulations of this Law.

Article 85:

Whoever violates the provisions of Articles 30, 31 and 33 of this Law shall be imprisoned for a period of not less than one year and/or fined ten thousand to twenty thousand Egyptian Pounds.

Article 88:

Any person who violates the provisions of articles 29, 32, and 47 of the present law shall be punished by imprisonment for a term of not less than five years and a fine of twenty thousand Egyptian Pounds to forty thousand Egyptian Pounds. Whoever violates the provisions of Article 32 shall be held to re-export the hazardous wastes subject of the crime at his own expense.

Article 95:

Whoever intentionally violates the provisions of this Law shall be punished by imprisonment for a term of not more than 10 years if such violation results in causing a permanent incurable disability to an individual. The penalty shall be imprisonment if the violation results in causing this infirmity to three or more persons.

If the violation results in the death of a person, the penalty shall be temporary hard labor, and if it results in the death of three persons or more the penalty shall be permanent hard labor.

Article 101:

The imposition of the penalties stipulated in this Law shall be without prejudice to the imposition of any more severe penalty prescribed in another law.

Moreover, Law No 4/1994 and its Executive Regulation has set in Annex 6 the permissible limits of air pollutants in emissions emitted by different activities, which are gaseous, solid, liquid or steam pollutants emitted by various establishments within given periods and likely to impact adversely on public health, animals, plants, material. Furthermore, Annex 8 of the law 4/1994 has set the maximum limits of air pollutants inside the work place according to the type of industry tables are illustrated in Annex (3).

Other laws and Regulations:

A. Regulations Governing Handling of Industrial Chemicals:

Law No. 499/1995:

This law stated that the Ministry of Industry is the responsible agency for handling of poisonous and non-poisonous chemicals used in industry. The Ministry of Industry issued the rules and regulations for importation and trade of these chemicals.

Decree No. 471/1995:

The Ministry of Industry must be informed of any activity concerning trade in poisonous or non-poisonous substances including the name of the shop owner, the number of this license and the kind of trade.

Decree No. 138/1958, Amended by Decree No. 91/1959:

1. For trading in poisonous or non-poisonous chemical used in industry, a license must be issued from the Industrial Control Authority (ICA).
2. It is prohibited to have such a license together with ownership of any pharmaceutical enterprises

3. This license is personal and cannot be transferred or inherited.
4. Poisonous materials should be kept in suitable packages with a label showing the name of the material, the supplying factory, the quantity contained. The word poisonous should be written in Arabic and one foreign language in red and in a clear place.
5. The owner of the shop or store must keep a logbook with its pages serially numbered and stamped by the ICA. Any supply or selling should be indicated in this book.

Decree No. 342/1962:

Added the following to MD 138/1958:

The non-poisonous materials, which are imported or bought by the factories for manufacturing, their products are to be excluded from the license mentioned in MD 138/1958.

Law No. 21/1958 concerning Organization and Development of Industry:

Chapter 2, articles 14, 15 authorize the Ministry of Industry to put specifications for raw materials and industrial products. The Minister of Industry issued the rules to be strictly followed in the production of more than 150 commodities.

Law No. 21/1957 Concerning the Egyptian Organization for Standardization and Quality:

The organization issued specifications for chemicals and household commodities such as: Red lead oxide primer, Matches, paint solvents, fuel, pigments, dyes, food additives, perfumes, soap detergents, clothes and blankets.

B .Regulations Governing Pesticides Use:

Agricultural Law No. 53/1966 concerning specification of pesticides to be used in Egypt, procedures, for their registration and conditions for use.

Article 78

Agricultural pesticides are those chemicals and formulations used to control plant diseases, pest insects, rodents, and weeds, other organisms detrimental to plants, animal insects and parasites.

Article 79

Pesticide Committee is to be formed by a ministerial decree from the Minister of Agriculture. The task of the Committee is to specify pesticides to be used in country, determine their specifications, procedure of their registration and condition for use.

Article 80

Based on the recommendations of the Committee, the Minister of Agriculture issues ministerial decree that put the articles of the agricultural law into action particularly those concerning:

1. Kinds of pesticides to be imported for local use, their specifications, conditions of importation and handling.
2. Conditions and procedures of licensing for pesticides importation and trade.
3. Procedures of pesticides registration, registration renewal, registration fees.
4. Methods of pesticides sampling and analysis, ways of disapprobation by the producers on results of chemical analysis, procedures to be followed in considering approbation and judging its validity, and the fees to be paid for such approbation.

Article 82

Advertising or distribution of information on pesticides should comply with its specification and conditions for handling and registration and also with the recommendations of the Ministry of Agriculture for their use.

Ministerial decree No. 173 for year 2004

For modification of the 5th item of the ministerial decree 3209 for year 2003, concerning deleting the items of experimenting/trial on registering pesticides with the METOO system according to what is followed by Environmental Protection Agency (EPA).

Ministerial Decree NO. 874, year 1996

Restricting the experimentation or import or dealing with pesticides whatever they are raw material or other ingredients in any form declared in the attached tables of this decree and classification as group “ B “ that could be human carcinogenic either through

trading or for personal use. According to the classification of US EPA agency, also the classification of IARC/ WHO.

C. Regulations Governing Handling of Pharmaceutical and Chemicals in Consumer Goods of Ministry of Health:

Law No. 127/1955 (Pharmacy Practicing)

It regulates pharmaceutical affairs including establishments, personnel, products and ingredients. According to this law the ministry of the health applies full control over dosage forms of drugs, cosmetics, household insecticides and disinfectants, biological preparations and diagnostics, and medical devices.

Law No. 183/1960 concerning Narcotics Control:

It sets regulations for handling and control of narcotics.

Ministerial Decree No. 429/1969

It sets conditions for storage and licensing procedure concerning narcotic substances.

Presidential Decree No. 450/1980

Concerning establishment of the national council for addiction control.

Ministerial Decree No. 487/1985 Deals with psychoactive substances and its preparations. It annexes three tables dealing with three different levels and categories.

Law No. 367/1954 Chapter 2, 3, 4.

It regulates medical diagnostic laboratories, scientific research lab and biological preparations laboratories.

Ministerial Decree No. 163/1967

It controls importation of food additives.

Decree No. 798/1957 and Ministerial Decree No. 679/1983

Deal with the requirements to be fulfilled in cooking ware containers and packages used for food processing and packaging.

Ministerial Decree No. 178/1975 and its Amendments

Concerning coloring additives permitted in foods.

Ministerial Decree No. 16/1964 and its Amendments

It regulates the use of food preservatives.

Law No. 53/1966

Authorizes the Minister of Agriculture to regulate and organize investigation of food products of animal origin and the freeze foodstuff.

Ministerial Decree No. 10/1957

This decree is concerning licensing of household insecticides.

Law No. 118/1979

Concerning import and export of pharmaceutical and chemicals in consumer goods section 5, chapter 1, and Article 73 defines the role of the general organization for control of imports and exports. Under this law it is prohibited to import or export any commodity not fulfilling the specifications laid down by this organization (GOCIE). The minister of economy issued more than decrees dealing with control of many goods and commodities.

Ministerial Decree No. 315/1993

It prohibits the importation of blue asbestos among a list comprising six other chemicals. Occupational health and safety legislation is a principal instrument for regulating the conditions under which work is carried out. According to the law No.137 of 1981 by Ministry of Manpower and Immigration and its DecreeNo.55 of 1983 is a comprehensive Act on the work environment, which constitutes a frame work for the most important occupational health and safety principals and which provides the bases for more details lower level provisions or adjacent legislation.

Annex (2)

The Participation of Egypt in International Agreements/ Procedures Related to Environmental Protection and Chemicals Management

Category	Name of Convention/Agreement
Air and Noise Pollution	1. Convention concerning the protection of workers against occupational hazards in the working environment due to air pollution, noise and vibration.
Marine Oil Pollution	2. International convention on the prevention of pollution of the sea by oil 3. International convention relating to intervention on the high seas in cases of oil pollution casualties 4. Protocol concerning cooperation in combating pollution of the Mediterranean sea by oil and other substances in cases of emergency
Marine Pollution	5. Protocol relating to intervention on the high seas in cases of Marine pollution by substances other than oil 6. Convention on the prevention of marine pollution by dumping of wastes and other matter 7. 1996 protocol relating to the convention on the prevention of Marine pollution by dumping of wastes and other matter, 1972 8. Protocol of 1978 relating to the international convention for the prevention of pollution from ships 9. Convention on the protection of the Mediterranean sea against pollution (Barcelona) 10. Amendment to the convention for the protection of the Mediterranean sea against pollution 11. Protocol for the prevention of pollution of the Mediterranean sea by dumping from ships and aircraft 12. Amendment to the protocol for the prevention of pollution of the Mediterranean sea by dumping from ships and aircraft 13. Protocol of the protection of the Mediterranean sea against pollution from land-based sources 14. Amendment to the protocol for the protection of the Mediterranean sea against pollution from land-based sources 15. Regional convention for the conservation of the Red Sea and Gulf of Aden environment (Jeddah)

<p>Nuclear Energy and Hazardous Substances and Waste</p>	<p>16. Convention on early notification of a nuclear accident</p> <p>17. Convention concerning prevention and control of occupational hazards caused by carcinogenic substances and agents</p> <p>18. Convention on the prohibition of the development, production and stock-piling of bacteriological (Biological) and toxin weapons, and on their destruction</p> <p>19. Protocol on the prevention of pollution of the Mediterranean sea by Trans boundary movements of hazardous wastes and their disposal</p> <p>20. Basel convention on the control of Transboundary movements of hazardous wastes and their disposal</p> <p>21. Amendment on the Basel convention on the control of Trans boundary movement soft hazardous wastes and their disposal</p> <p>22. Bamako convention on the ban of the importing to Africa and the control of trans boundary movement and management of hazardous wastes within Africa</p> <p>23. Convention on assistance in the case of a nuclear accident or radiological emergency</p> <p>24. Joint protocol relating to the application of the Vienna convention (on civil liability for nuclear damage) and the Paris convention on (Third-party liability in the field of nuclear energy)</p> <p>25. Convention on nuclear safety</p> <p>26. Convention concerning the protection of workers against Ionizing radiation</p> <p>27. Treaty banning nuclear weapon tests in the atmosphere, in outer space and underwater</p> <p>28. International convention on civil liability for oil pollution damage</p> <p>29. Protocol of 1992 to amend the international convention on civil liability for oil pollution damage, 1969</p> <p>30. Protocol concerning regional cooperation in combating pollution by oil and other harmful substances in cases of emergency</p> <p>31. International convention on oil pollution preparedness, response and cooperation</p> <p>32. Vienna convention on civil liability for oil pollution damage</p>
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Annex (3)

Old Industrial Zones of Governorates:

Governorate	Zone Title
Helwan	Torah and Shaq Al Tho'ban Industrial Zone
	South Helwan industrial zone
	Katamia industrial zone
	Shaq Al Tho'ban industrial zone
	Al Robeiky industrial zone
	Al Maasara Industrial Zone
	Division Maadi Company for Development and Reconstruction
Cairo	Egypt-Alex. Road - Al Nozha District
	El Salam City Industrial Zone
	El Marg District Industrial Zones
	El Sharabya District Industrial Zones
Alexandria	New Manshia industrial zone
	Al Nasseria industrial zone
	Upper and Lower Mergham industrial zone
	The industrial zone in K 31, Desert Road
	Seibco Industrial Zone
	Ajami industrial zone
	Al Nahda industrial zone and its expansions
	Ohm Zagheou Industrial Zone
Port Said	The industrial zone C 1
	The industrial zone C 6
	The industrial zone C 11
	The Northwest Bortex industrial zone

	The industrial zone south of Port Said
Suez	The industrial zone for light industries
Dakahlia	Southwest Gamasa industrial zone
	Asafra industrial zone
Sharkia	Belbeis - 10th of Ramadan road industrial zone
Qaliubia	Al Shorouk industrial zone
	Al Safa industrial zone
	Al Aqrasha Industrial Zone
Kafr El Sheikh	Balteem industrial zone
	Metobas industrial zone
	Industrial Zone in mlaha of Moneisi
Menoufia	Mubarak Industrial Zone and its expansion
	Industrial Zones In kafrDawod
Beheira	Natron Valley industrial zone
	Boseili Desert industrial zone
Ismailia	Al Qantara Shark industrial zone
	The 1 st industrial zone
	Technology Valley
	The 2 nd industrial zone
	Abu Khalifa Industrial Zone
	Abu Khalifa (Sugar Factory)
6 th Of October	Abu Rawash industrial zone and its expansions
BeniSueif	Kom Abu Radi industrial zone

	Baiad Al Arab industrial zone
	The industrial zone 1/31
	The industrial zone 2/31
	The industrial zone 3/31
	The industrial zone 4/31
Fayoum	KomOshim industrial zone
	New KomOshimkouta industrial zone
	New KomOshimkouta industrial zone
Minya	Al Matahra industrial zone, east of the Nile
Assiut	Al AwamerAbnoub industrial zone
	Al Zarabi industrial zone in Abu Tig
	Al Safa industrial zone (BeniGhaleb (
	Sahel Selim industrial zone
	Dairout industrial zone
	Badari industrial zone
Sohag	Al Kawthar District industrial zone
	Al Ahaiwa industrial zone
	Beit Dawood industrial zone, west of Gerga
	West Of Tahta Industrial Zone
Qena	Kalaheen industrial zone
	Hu industrial zone
Luxor	El Boghdadi Industrial Zone
Aswan	Al Alaki Valley industrial zone
The New Valley	Al Kharga industrial zone

	El Dakhla industrial zone
Matrouh	The industrial zone in K 26
North Sinai	Bir Al Abd industrial zone
	Al Masa'eed Artisans' Industrial Zone
	The industrial zone for building materials, south of El Arish

➤ **New Industrial Zones in the New Urban Community Cities:**

Governorate	Zone Title	Status
Helwan	Badr City industrial zone	Working
	15 th of May industrial zone	Working
	New Cairo industrial zone	Under Construction
	Al Shrouk industrial zone	Under Construction
Alexandria	Borg Al Arab industrial zone	Working
Suez	Ataka industrial zone and its expansions	Working
	Petrochemicals - south of the Sumed	Working
Demeitta	New Damietta industrial zone	Working
Sharkia	New Salhia industrial zone	Working
	10 th of Ramadan industrial zone	Working
Port Said	East Port Said industrial zone	Working
Kaliubia	Al Obour industrial zone	Working
Menoufia	El Sadat industrial zone	Working
Beheira	Nubaria industrial zone	Working
6 th of October	6 th of October industrial zone	Working

Benisueif	New BeniSueif industrial zone	Working
Fayoum	New Fayoum	Working
Minya	New Minya industrial zone	Working
Assiut	New Assiut industrial zone	Working
Sohag	New Sohag	Working
Luxor	New Tiba	Working

Annex (4)

Existing Legal Instruments, which address the Management of Chemicals

Legal Instrument (Reference, Year)	Responsible Ministry or Body	Chemical Use Categories Covered	Objectives of Legislation
Law No. 4 of 1994	Ministry of State for Environmental Affairs	Industrial chemicals, Agricultural chemicals (pesticides, fertilizers), Pharmaceutical chemicals, Petroleum products, Explosive chemicals, radioactive materials, Consumer chemicals and Chemical waste.	Environmental Protection and Pollution Control in Egypt
Decree No. 338 of 1995	Ministry of State for Environmental Affairs	Industrial chemicals, Agricultural chemicals (pesticides, fertilizers), Pharmaceutical chemicals, Explosive chemicals, radioactive materials, Petroleum products consumer chemicals and chemicals waste.	Executive Regulations for Law No.4/1994
Decree No. 55 of 1983	Ministry of Manpower and immigration	All chemicals used in the Industrial field	Regulate and control use, handling, and storage of chemicals and conditions required for industrial safety and health in the work places
Decree No. 116 of 1991	Ministry of Manpower and immigration	All chemicals used in the Industrial field	Strengthening facilities by training directors and workers

Decree No. 60 of 1986	Ministry of Agriculture	Pesticides	Regulates and controls the using of restricted compounds
Decree No. 258 of 1990	Ministry of Agriculture	Fertilizers	Regulates and controls the importation of fertilizers
Decree No. 7330 of 1994	Ministry of Interior	Explosives	Determination of substances that are considered as explosives
Decree No. 18039 of 1995	Ministry of Interior	Explosives	Issue of license for import and use of explosives
Decree No. 499 of 1995	Ministry of Industry	Poisonous and non poisonous substances in industry	Control of handling the poisonous and non-poisonous substances in industry
Labor Law No. 137/1981	Ministry of Manpower and immigration	Industrial Chemicals	Labor and industrial safety protection of industrial Environment
Law No. 21/1958	Ministry of Industry	Industrial Chemicals	Rules regulating industry and production, handling and importing of chemicals.
Decree No. 91/1959	Ministry of Industry	Industrial Chemicals	Rules regulating industry and production, handling and importing of chemicals.
Decree No. 480/1971	Ministry of Health and Population	Industrial Chemicals	Air pollution criteria for industrial establishment

Agriculture Law	Ministry of Agriculture	Agricultural Chemicals	Rules regulate production, import, use of pesticides and fertilizers.
Decree No. 50/1967	Ministry of Agriculture	Pesticides	Toxic properties of pesticides, procedures for recording it.
Decree No. 590/1984	Ministry of Agriculture	Fertilizers	Rules regulate production, import, and use of fertilizers.
Decree No. 278/1988	Ministry of Agriculture	Veterinary Insecticides	Regulates importing of Veterinary insecticides.
Decree No. 874/1996	Ministry of Agriculture	Pesticides	Regulates importing, handling and using of pesticides.
Law No. 59/1960	Ministry of Health and Population	Ionized Radiations	Regulates the work with ionized radiations and protection from their danger
Decree No. 630/1962	Ministry of Health and Population	Ionized, Radiations	Executive regulations for law No. 59/1960
Decree No. 348/1996	Ministry of Health and Population	Banned Insecticides	A list of insecticides not allowed to be imported, produced or used
Decree No. 392/1964	Ministry of Housing, Utilities and Urban Communities	Explosives	Determinations for conditions for explosive warehousing
Decree No. 138/1958	Ministry of Industry	Industrial, Chemicals	Regulates importing, handling and using of industrial chemicals.

Decree No. 977/1989	Ministry of Industry	Industrial Chemicals	Prohibition of the use of Freon in manufacturing of aerosols.
Law No. 113/1962	Ministry of Health and Population	Pharmaceutical Chemicals	Regulates importing, manufacturing, and trade of pharmaceutical chemicals.
Decree No. 413/1996	Ministry of Health and Population	Hazardous Chemicals and Wastes	How to get license for handling of hazardous chemicals and wastes.
Decree No. 8/1990	Ministry of Health and Population	Natural and Artificial Colors	Determination of natural and artificial colors allowed to be used in food industry
Decree No. 673/1999	Ministry of Petroleum	Petroleum Hazardous Chemicals	A list of hazardous chemicals for Ministry of Petroleum
Decree No. 82/1996	Ministry of Health and Population	Hazardous Chemicals (for Health)	A list of hazardous chemicals for Ministry of Health
Decree No. 55/1996	Ministry of transportation	Banned Chemicals	A list of chemicals not allowed to be importing, producing or using.
Decree No. 88/1999	Ministry of Industry	Hazardous Industrial Chemicals	A list of hazardous chemicals for Ministry of Industry which cannot be used without license

