

The State of Contaminated Land Policy and Program Implementation in Latvia



Ilgonis Strauss

Ministry of Environment of the Republic of Latvia

State Hazardous Waste Management Agency

31 Miera Street, Salaspils, LV-2169, Latvia

**Presentation at NATO/CCMS Pilot Study Meeting on Prevention and
Remediation in Selected Industrial Sectors: Sediments, Ljubljana,
Slovenia, 17 – 22, June 2007**

Background (1)

- ❑ The Republic of Latvia is located in the northeast of Europe within the Baltic Sea Economic Region and covers 64,589 km² of territory.
- ❑ The State borders Estonia (to the north), Russia (to the east), Belarus (to the south-east) and Lithuania (to the south).
- ❑ The State capital is Riga.
- ❑ The central institution for the area of environmental protection - Ministry of Environment



Map of Latvia



Background (2)

The territory of Latvia in comparison with Europe is a qualitative, ecologically clean and uncluttered living space, whose characteristics are a temperate climate and biodiversity. Because of the comparatively unpolluted and virgin environment of Latvia, its residents have considerable advantages of favorable environment development, as well as the development of organic farming, tourism and recreation.

Forests dominate in the land use (44 %), followed by agricultural land (39%) and urban areas and infrastructure (10 %).

However, there are a significant number of places in Latvia, which can be classified as polluted and potentially polluted.

Ministry of Environment

Is a central institution for the area of environmental protection which includes:

- protection of environment and nature,**
- maintenance and rational utilization of natural resources.**

Ministry

- works out the national policy of environmental protection,**
- holds and coordinates implementation of environment policy,**
- develops drafts of legislative acts, conceptions, programs and plans,**
- represents interests of Latvia in the international and foreign institutions.**

System of the environmental protection normative acts

In order to regulate activities that impact on the environment, a system of normative acts has been developed.

The principles for observing and attaining environmental protection policy objectives are described in the laws:

- ❑ **On environmental protection,**
- ❑ **On environmental impact assessment,**
- ❑ **On national resource tax,**
- ❑ **On pollution**
- ❑ others
- ❑ as well as in subordinated regulations of Cabinet of Ministers

The Law On Pollution (1)

The **Law On Pollution** with its subordinated regulations of the Cabinet of Ministers is the main legislative act which regulates the polluted sites issues.

Law came into force on July 1, 2001.

The purpose of the law “On Pollution” is to prevent or reduce harm caused to human health, property or the environment due to pollution, to eliminate the consequences of harm caused,

The Law On Pollution (2)

as well as:

- ❑ to prevent pollution resulting from polluting activities or, if it is impossible, reduce emission into soil, water and air;
- ❑ to prevent or, if it is impossible, reduce the utilization of non-renewable natural resources and energy when performing polluting activities;
- ❑ to prevent or, if it is impossible, reduce the generation of waste;
- ❑ **to ensure assessment of polluted and potentially polluted sites in the territory of the State and registration thereof;**
- ❑ **to specify measures for investigation of polluted and potentially polluted sites and remediation of polluted sites;**
- ❑ **to specify the persons who shall cover expenses relating to investigation of polluted and potentially polluted sites and remediation of polluted sites;**
- ❑ to prevent or reduce the effects of environmental noise upon human beings;
- ❑ to reduce greenhouse gas emissions taking into account cost-effectiveness, and to ensure participation in the European Union emission quota trade system;
- ❑ to specify the right of public to participate in the decision-taking process in relation to the issuing of permits for the performance of polluting activities.

Remediation of polluted sites

According to the Law **On Pollution** remediation of polluted sites shall be performed if:

- ❑ the limit values of environmental quality rules have been exceeded; or
- ❑ the pollution may endanger human health or the environment.

Remediation shall include measures to be taken in order to:

- ❑ prevent the spreading of the pollution or its penetration into underground waters;
- ❑ restore or improve the environmental quality in a polluted site.

Quality rules for the environment

Quality rules for air, surface water, groundwater and soil are determined by the **Cabinet of Ministers** into the accordant regulations, by specifying:

- ❑ the time periods for achievement of such rules and the territory to which they apply;
- ❑ **the highest and lowest permissible level or characteristics for the presence in the environment of substances**, noise, organisms or other factors affecting the environment;
- ❑ parameters, monitoring methods and methods by which the exceeding of the relevant parameters is determined; and
- ❑ measures to be taken in cases where the rules have been exceeded.

Regulations which determine the state and pollution levels of soil, subsoil, surface and groundwater

- Cabinet Regulation No. 118 "**Regulations on surface and ground water quality**" (12.03.2002)
- Cabinet Regulation No. 804 "**Regulations on soil and subsoil quality**" (25.10.2005)

Limit values

In both of these legislative acts assessment of the environment quality is performed accordingly with common system by setting **three groups of limit values**:

- ❑ **A Value or target value.** If content of polluted substance exceed this level, provision of sustainable quality of soil, subsoil or water is impossible.
- ❑ **B Value or precautionary limit value.** It indicates a maximal pollution level. In case of exceeding of this level there is possible harmful impact on human health or environment. This is also a level which is necessary to achieve after remediation of polluted site if there the stronger requirements are not set up.
- ❑ **C Value or critical limit level.** In case of achieving or exceeding of this level, soil and subsoil functional quality would be harmed or pollution will cause a harmful impact on human health or environment.

In case of **C Values** remediation measure shall be performed.

Institutions responsible for investigation and remediation of polluted sites

Municipalities in their administrative territory in cooperation with Regional environmental boards of State environmental service shall monitor and register contaminated and potentially contaminated sites.

Regional environmental boards (subordinated institutions of the Ministry of Environment) **shall supervise and control** the investigation and remediation of polluted or potentially polluted sites, except for the polluted and potentially polluted sites in the possession of the Ministry of Defense.

The Ministry of Defense or its authorized institution **shall supervise and control** the investigation and remediation of polluted or potentially polluted sites in the possession of the Ministry of Defense.

Regional environmental boards, the Ministry of Defense or its authorized institution shall co-operate with municipalities, the State Land Service, the Ministry of Health and other institutions involved in investigation and remediation.

The Latvian Environmental, Geological and Meteorological Agency provides a development of register and database on polluted and potentially polluted sites.

Persons who shall cover expenses related remediation of polluted sites

Accordingly with the principle "**polluter pays**" the law **On Pollution** sets up persons who shall cover expenses related to investigation and remediation measures.

Expenses relating to investigation and remediation measures shall be covered by:

- ❑ the operator who has performed a polluting activity due to a polluted or potentially polluted site has been created;
- ❑ the operator who performs or has intended to perform a polluting activity at a polluted or potentially polluted site;
- ❑ the land owner who has had a decisive influence in an undertaking which has performed a polluting activity, due to which a polluted or potentially polluted territory in the land property owned by such owner has been created; or
- ❑ the owner or the user of the relevant land or installation, who voluntarily undertakes to fully or partially cover such expenses.

The current state of polluted sites in Latvia

There are still seriously polluted sites in Latvia, with the pollution migrating to groundwater, surface water, and food chains causing a threat to human health and environment. Exploration of polluted and potentially polluted sites has been completed and a special State Register of polluted and potentially polluted sites established. At present time in this Register are fixed 3 532 sites, 242 sites of which are classified as polluted, and 2622 as potentially polluted.

The most significant and the most polluted sites in Latvia are so named historically polluted sites, which came as heritage from the former political and economic system. Mainly those are the former Soviet military sites and industrial waste dumpsites. In general for the historically polluted sites is impossible to apply the "polluter pays" principle as creators of pollution no longer exist.

Management and remediation of historically polluted sites is one of the national environmental policy aspects and therefore the policy objectives of the problem are defined in several environmental policy and action planning documents.

The environmental policy and action planning documents defining the policy objectives of the problems of historically polluted sites

- ❑ **The National Development Plan**
- ❑ **The National Environmental Policy Plan for the Period 2004 – 2008**
- ❑ **The National Strategic Reference Framework 2007-2013**
- ❑ **The National Program - Remediation of Historically Polluted Sites**

The National Development Plan

Has been developed in accordance with the Regional Development Law of the Republic of Latvia and **is a medium-term planning document for the period from 2007 until 2013**. The objective of the plan is to facilitate a balanced and sustainable development of the country, as well as to ensure an increase in Latvia's competitiveness.

The tasks of environmental protection set up in the National Development Plan (1)

The National Development Plan sets up the following tasks in area of environmental protection:

- ❑ to facilitate the preservation and reasonable use of biological diversity and protected areas;
- ❑ to promote the inclusion of the protected areas in the economic development determining different prohibited zones of economic activities and substantiating the socio-economic decisions in their determination, as well as to attract financial resources for their management;
- ❑ to encourage public participation in environmental protection and preservation by providing timely and true information to the population about environmental quality and natural resources;

The tasks of environmental protection set up in the National Development Plan (2)

- to facilitate the development of environmental education, as well as to foster education for sustainable development and to raise environmental awareness among the population;
- to support sustainable development of the natural environment for recreation purposes and to promote ecotourism;
- **to facilitate evaluation, mitigation and monitoring of the risks to nature, including climate change and industrial risks;**
- **to encourage remediation and recovery of polluted sites;**
- to raise public awareness about economical use of water and energy resources and sorting of household waste.

The National Environmental Policy Plan for the Period 2004 - 2008

According to the National Environmental Policy Plan for the Period 2004 - 2008 the main policy goals regarding polluted sites:

- ❑ to eliminate or reduce pollution caused by previous military or economic activities and the adverse impact thereof on human health, property, environment and biological diversity,
- ❑ to achieve improvement in soil, ground, underground and surface water quality in polluted sites,
- ❑ to preclude the penetration of hazardous substances from polluted sites into surface and underground waters,
- ❑ to renovate and improve environmental quality in polluted sites,
- ❑ to take the current levels of environmental pollution into account in territorial planning,
- ❑ to determine the actual value of land and relevant real property tax according to the degree of pollution.

The National Strategic Reference Framework 2007-2013

Is a policy programming document which lays down a common strategy for the obtaining of **EU Structural Funds and Cohesion Fund resources**, and provides coordination between the funds and the operational programs for the 2007-2013 period (with a utilization period of 2013 + n years, depending on the stipulations of the regulation).

The European Regional Development Fund resources are planned to use for remediation of the most dangerous historically polluted sites in cases when application of the "polluter pays" principle is not possible.

The National Program Remediation of Historically Polluted Sites (1)

This National Program defines specific activities for remediation of historically polluted sites and has been worked out for the obtaining of the **European Regional Development Fund** resources. This National Program is part of the National Strategic Reference Framework operational program "***Improvement of infrastructure and public services***" where the remediation of polluted sites is defined as priority for the obtaining resources from the European Regional Development Fund.

The National Program includes analysis of current situation, policy objectives defined in policy and planning documents, project selection criteria and descriptions of the most dangerous polluted sites.

The National Program Remediation of Historically Polluted Sites (2)

Objectives of the National Program:

- ❑ to improve the quality of soil, ground, groundwater and surface waters,
- ❑ to restore and improve environment quality of polluted sites,
- ❑ to eliminate threats to human health.

Main priorities:

- ❑ remediation of historically polluted sites included in the National Environmental Policy Plan;
- ❑ remediation of the most dangerous historically polluted sites included in the Register of polluted and potentially polluted sites.

The most dangerous historically polluted sites of national relevance (1)

- ❑ **Incukalna disposal site for sulphuric acid tar**, the historically contaminated site of about 65 thousand m³ acid tar waste (two pools); with two groundwater contamination plumes (about 139 and 148 ha). In the centers of the pools pH is between 3 and 4, chemical oxygen demand reaches 1,800 mg/L, biological oxygen demand exceeds 100 mg/L, surface active compounds, which are the contaminant of concern, exceed 100 mg/L and SO₄ reaches 4,500 mg/L.
- ❑ **Olaine industrial (hazardous) biochemical waste dumpsite**, 21.5 thousand m³ liquid (2.5 thousand m³) and solid (19 thousand m³) waste with a groundwater contamination plume about 10000 m².
- ❑ **Karaosta Channel in former Liepaja Naval Port**, 780 000 m² water body with about 650 000 m³ contaminated bottom sediments, mainly polluted with oil products and heavy metals.

The most dangerous historically polluted sites of national relevance (2)

- **Former military airbase Rumbula** in suburb of Riga contaminated with oil products; The area is approximately 2.5 km² and six more or less delimited subsurface oil spill plumes have been identified here. The largest contamination plume is approximately 310 m long and 220 m wide. The maximum initial oil thickness is 1.24 m and the average oil thickness approximately 24 cm, corresponding to a volume of about 1230 m³ of free product. Due to groundwater fluctuations large portions of the hydrocarbons are trapped as residual oil, both above the free phase oil surface and under the oil-water interference. The residual oil is not capable of flow and cannot be extracted by means of regular pumping.
- **Milgravis and Sarkandaugava**, the territories in Riga Port area with contamination derived from the oil companies situated there.
- **Jelgava industrial (hazardous) liquid waste dump site** of pelt processing plant, main polluters – chlorides, sulfates, organic acids, ammonium as well as heavy metals, about 23 ha contaminated groundwater plume.

Actual Remediation Projects

- ❑ Remediation Project for **Incukalns Acid Tar Ponds and Olaine Liquid Hazardous Waste Dump Site** – feasibility studies performed.
- ❑ Remediation Project for **Liepaja Karosta Channel** in former Liepaja Naval Port - feasibility study performed.
- ❑ Remediation of **Jelgava industrial liquid waste dump** site of pelt processing plant – for preparation of the remediation project the additional investigation of waste dump site started.
- ❑ **Re-cultivation of environmentally incompatible small and medium size household waste dumpsites** – ongoing closure and remediation activities since 1998.

Current situation with remediation of household waste dumpsites in Latvia

In 1998 closure and remediation of dumpsites has been started.

The actions resulted in following figures:

- ▣ **560 dumpsites were in operation in year 1998,**

At present moment:

- ▣ **106 dumpsites are in operation,**

- ▣ **454 dumpsites closed,**

- ▣ **238 dumpsites remediated (with common area 345 ha),**

- ▣ **322 dumpsites shall be remediated till 2012.**

Financing for remediation of the most dangerous historically polluted sites

Since 2004 **0.45 million Euro in total** has been invested from the State budget to rehabilitate inherited contaminated sites. Using this funding, the necessary documentation has been prepared, and research has been carried out for remediation of four most dangerous polluted sites.

Since Latvia is full member of EU there is available also co-financing from **Cohesion Fund** and from **EU structural funds**.

Finances planned for the period 2007 – 2013

| Years | Total, mill. EUR | ERDF, mill. EUR | National, mill. EUR |
|--------------|-----------------------------|----------------------------|--------------------------------|
| 2007 | 4.12 | 3.5 | 0.62 |
| 2008 | 8.24 | 7.0 | 1.24 |
| 2009 | 8.24 | 7.0 | 1.24 |
| 2010 | 8.24 | 7.0 | 1.24 |
| 2011 | 8.24 | 7.0 | 1.24 |
| 2012 | 8.24 | 7.0 | 1.24 |
| 2013 | 12.35 | 10.50 | 1.85 |
| Total | 57.65 | 49.00 | 8.65 |

Conclusions

- ❑ In general Latvia is comparatively unpolluted place;
- ❑ In the past problems related to polluted sites have not been regarded as a priority of the environmental protection;
- ❑ The polluted sites problem has been recognized as priority after accession of Latvia to the European Union in 2004, and it is set up by the National Environmental Policy Plan for the Period 2004 – 2008 and the National Program - Remediation of Historically Polluted Sites;
- ❑ Mainly the problem concerns the historically polluted sites;
- ❑ In general the "polluter pays" principle is impossible to apply for the remediation of historically polluted sites;
- ❑ For the period 2007 – 2013 the State budget means and EU Structural Fund co-financing are planned to use for remediation of the most dangerous historically polluted sites;
- ❑ In total **57.65 mill. EUR** are planned to spend for remediation in this period.