

IMPROVEMENT OF LITHUANIAN ENVIRONMENT BY USING EU FUNDS

ОПЫТ ЛИТВЫ В УЛУЧШЕНИИ ОКРУЖАЮЩЕЙ СРЕДЫ ИСПОЛЬЗУЯ ФИНАНСОВЫЕ ФОНДЫ ЕС

Assoc. Prof. Dr. Rima Tamosiuniene
Faculty of Business Management – Vilnius Gediminas Technical University, Lithuania
E-mail: rimtam@vv.vtu.lt

Abstract: *The area of environment protection has become much more important in the priority list of the Government strategy when Lithuania became the member of the European Union. The country of Lithuania has got a great number of obligations in the following areas of environment protection: water management, improvement of air quality and waste management. The main objective of the paper is to analyze environment management also waste management problems in Lithuania, finalized by the proposals for the means and possibilities of its improvement by using EU funds.*

KEYWORDS: ENVIRONMENTAL MANAGEMENT, WASTE MANAGEMENT SYSTEM, EUROPEAN UNION FUNDS, INVESTMENT PROJECT

1. Introduction

Environmental management is becoming more and more important in the modern wealthy societies. Industries have harmed the nature on a very high extent; that harm is being compensated by an introduction and use of sound environmental practices and regulation in the environmental field.

The concept of sustainable development was introduced in order to change environmentally harmful practices. Businesses are responsible for the necessary actions because of the use of resources for the production and supply of goods and services [2].

The area of environment protection has become much more important in the priority list of the Government strategy when Lithuania became the member of the European Union. The country of Lithuania has got a great number of obligations in the following areas of environment protection: water management, improvement of air quality and waste management. For an accomplishment of all the promises the country of Lithuania must encourage the environment protection projects and provide the partial or even total support for the implementation of the projects alongside with the EU funds. Waste proposal as the priority area of importance has been presented in the strategy of the state environment protection approved by the Seimas (Parliament) of the Republic of Lithuania. Waste disposal is becoming more and more relevant as the scope of industry and consumption is growing fast especially after Lithuania joined the EU.

The main objective of the paper – analysis of environment management problems in Lithuania finalized by the proposals for the means and possibilities of its improvement by using EU funds.

The main tasks:

- analyze main conditions of environment management in Lithuania;
- analyze the present situation of waste management in Lithuania and find the problem-based solutions,
- analyze the financing problems of implemented projects concerned with the waste management system or the projects under implementation and offer the ways of solving them, searching for the possibilities to use the EU funds.

2. The Condition of Environmental Management in Lithuania

Lithuania is taking part in the Baltic 21 Industry Action Program, which is focused on creating a more favorable framework for business operations, on developing market-driven tools and methods, and on improving co-operation on research and development and on transferring technology and knowledge. The

goal of the program is to create a competitive industry in the Baltic Sea Region where eco-efficiency and good working conditions are natural parts. The industry action program constitutes of three specific actions “Improvement of the framework for business operation”, “Implement eco-efficiency in industry”, and “Extended and improved co-operation on research and development, knowledge and technology transfer in the Baltic Sea Region” [4, 5].

The concept of eco-efficiency was introduced in Lithuania with implementation of the Baltic 21 Industry Action Program, established in year 2000, and is the first step towards the accumulation of right knowledge and taking the real actions. One of the most important actions of the program is to implement eco-efficiency in the industry of Lithuania. The aim of this action is to develop and implement such governance structures in enterprises that are beneficial for the environment, social conditions and efficiency.

Issues to be addressed within this action are [16]:

- Development of eco-efficiency tools for different industries;
- Implementation of Environmental Management Systems;
- Consideration of environmental factors in all activities and reporting;
- Promotion of pilot projects aiming at sustainable development.

The activities of introducing the environmental management systems (EMS) in Lithuania were first started in 1996 by The Institute of Environmental Engineering (APINI), which still remains the most active actor in this area.

Lithuanian companies are increasingly interested in EMS standards. The main interest is in ISO standards, however, it is expected that with the forthcoming changes of EMS it will gain more attention. Due to the lack of information and internal capacity the enterprises implementing standard EMS often need external assistance in terms of expertise and financial assistance, especially in the final EMS certification step.

The most viable industrial sectors for wider EMS introduction include construction and building industry, food, furniture and appliances industry [1].

Eco-efficiency and legislation promote sustainability in different ways, although the aim is still the same. Environmental Management System (EMS) is created to reach the same aim – sustainability of economies, but with different means as well [4]. EMS is in a way supporting the concept of eco-efficiency because of its contribution to materials and energy preservation and economy. In Lithuania EMS is being rapidly implemented through various projects and educational programmes supported by EU funds and Lithuanian government. It is very positive measure because it does not only show the attention to environmental issues,

but it also indicates the growth of the economy and investment, devoted not only to businesses' survival but to further actions, such as nature preservation.

3. Main Programmes Committed for Improvement of Lithuanian Environment

The Ministry of Environment Protection has foreseen the following programmes in the strategic plan of 2005-2007 among a number of running ones [8, 14, 19]:

- Administration of the EU funds for environment protection. The Agency for Environment Project Management will implement the programme. Its objective is to ensure the effective use of the EU funds.
- A special Cohesion Fund programme. It aims at the use of EU funds and ensures the common financial support, as well as helps in up-dating the projects of waste disposal management.
- A special programme of the European Regional Development that aims at the use of EU funds ensures the common financial support, improvement of the environment quality and prevention from the harm to environment.
- LAAIF- a special programme of Investment Funds of Environment Protection in Lithuania. It aims at providing with the financial support of investment projects in both private and public sector to result in decreasing the negative impact of economic activities on the environment.
- A special programme for the product or package waste management. Its aim is to increase the possibilities for financial support in waste management.
- A special programme for the support of environment protection. It aims at remuneration / indemnity for the harm to the environment and elimination of the sources of environment pollution.

4. Analysis of Waste Management in Lithuania and Proposals for Problem-Based Solutions

For implementing the "acquis communautaire" on waste, local and regional authorities are particularly challenged by the following issues [5]:

- A coherent waste management strategy (including management plans at different levels) must be set up and implemented;
- Separate collection and sorting systems for many different waste streams need to be established;
- New adequate treatment and disposal facilities must be established;
- An effective horizontal co-operation between local authorities (municipalities) and a vertical cooperation between different levels of authorities needs to be established;
- Financing for the establishing/upgrading of expensive sustainable waste management infrastructure must be found;
- Lack of data availability must be overcome and extensive monitoring requirements must be met;
- Effective enforcement and control is needed;
- Lack of administrative capacity at the regional and local level, (lack of finances, information, and technical expertise) must be overcome;
- Transparency and public participation must be enhanced.

4.1. Legitimate waste disposal base in Lithuania

The implementation measures of the state strategic waste disposal plan have been started to get into effect with the purpose of creating the rational waste disposal system able to meet the society needs, ensure the environment quality and not affect the principles of market economy. The implementation measures will help to

protect human health and environment from the waste pollution impact. Positive changes were noticed after the change in the legal act for waste management was approved on 01 January 2003 followed by a few legal acts regulating waste disposal. The **National Sustainable Development Strategy** – one of the most important documents integrating the provisions of sustainable development of economy, environment protection and social policy has been prepared and approved. The part of environment protection sector of the Lithuanian Common Programmes Document for the period of 2004–2006 has also been prepared and approved where the directions of using the EU structural funds have been foreseen. The Cohesion Fund Strategy in environment protection has also been prepared to set the directions of using the EU structural funds in environment protection area in the period of 2004–2006. The support of the EU ESPA programme in 2000–2003 had a great impact on positive changes in the environment protection sector as well. In 2003 the regulations for waste management were changed with the aim to control the waste management more effectively, recycling of hazardous waste have been stiffen and accounting as well.

4.2. Strategic waste management plan

The main objective of the state strategic waste management plan is to create a rational waste management system. For implementation of the projects concerned with creating the above mentioned system in 2001–2009 the sum of 129,3 mln EUR was planned to allocate, whereas the EU support – 85,8 mln EUR, the Lithuanian state budget assets – 25,3 mln EUR and state loans – 16,3 mln EUR [15].

The state strategic aims of waste management are the following [8,15]:

- Encourage the recycling and disposal of waste;
- Regulate the detection and removal of the old waste and avoid new sources of waste;
- Develop the legal base for waste management and ensure the control for implementation of the requisitions set;
- Develop the public administration system for waste disposal;
- Ensure the education and dissemination of information on waste management issues to public institutions, waste managers and institutions in charge of waste management control;
- Involve the private enterprises into waste management business, encourage their investment into this sort of business.
- Ensure the safe management of waste flows disposal concerned with the human health and environment.

4.3. The main principles of waste management in Lithuania and in EU

Waste – is the right source in the wrong place. With reference to the modern attitude, the waste should not be treated as environment pollutants, but as the materials source rejected to be disposed by a human due to the absence of his/her wish or ability (e.g. package waste belongs to the sort which is easy to utilise and recycle. The recycling of the package waste provides with the possibility of gaining income or even profit) [1].

The main specific flows of waste necessary to be disposed according to the state requirements are the following [6]:

- ✚ hazardous waste;
- ✚ biodegradating waste;
- ✚ package waste;
- ✚ secondary stock;
- ✚ construction and demolition remains.

Other important flows for production and business are the following [6]:

- ✚ food production waste and the expired products;
- ✚ out-of-use vehicles and their parts, including the tires;

- ✚ domestic electric appliances and their parts;
- ✚ silt from waste treatment.

The main principles of waste management in Lithuania and the EU are the following [15]:

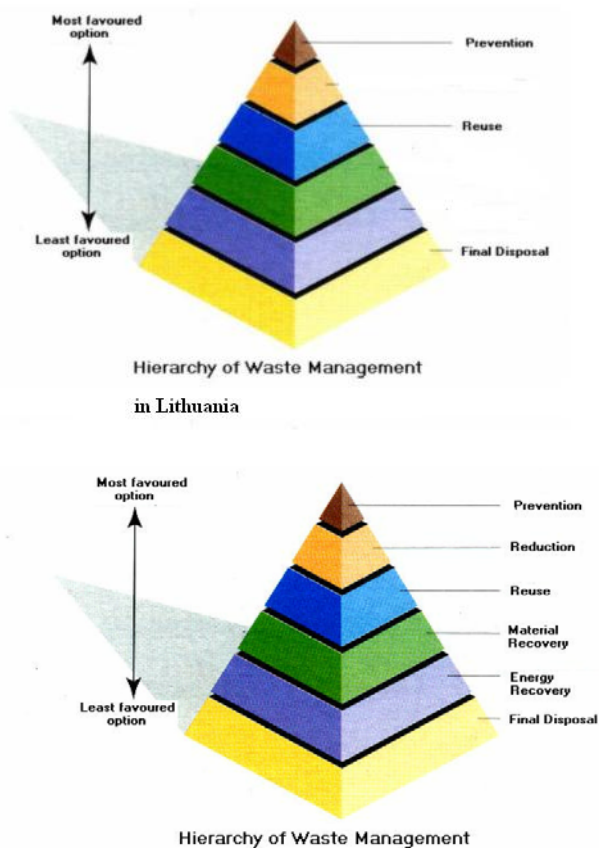
- a) waste prevention,
- b) waste utilisation,
- c) safe elimination of the waste.

The **prevention of waste** is the paramount point in the waste hierarchy. Prevention or reduction minimizes the generation of waste products in the first place. Prevention usually results in the least environmental and economic life cycle costs because it requires no collecting or processing of materials. It also typically produces significant benefits in terms of production efficiencies and use of resources.

The **reuse of waste** is the next most desirable option. Reuse is the using again of a material without any structural changes in that material. Reusing waste often requires collection but relatively little processing.

The **recovery of waste** is further separated into categories: recovery of materials and recovery of energy. Whichever of these two options is better for the environment and human health is the preferred; the recovery of materials is most often the more preferred option. **Recovery of materials** includes activities such as **recycling and composting**. These activities generally require a collection system, as well as a method of material processing or conversion into a new product. **Recovery of energy**, such as incineration, is usually the less preferred option.

Final disposal is always a last resort, only considered once all other possibilities have been explored. Before final disposal, a considerable amount of pre-treatment is necessary. Pre-treatment includes physical, thermal, chemical, or biological processes which change the characteristics of the waste in order to reduce the quantity and/or harmfulness of the waste. Land-filling is final disposal [13, 14, 15].



Pic. 1. Hierarchy of Waste Management in Lithuania and in EU [15]

Measures for waste avoidance and decrease of hazardousness to the environment and human health [14]:

- ✚ implement the technologies that ensure the clean production and small extent waste;
- ✚ use as few hazardous materials as possible;
- ✚ produce and utilize durable and/ or reusable products that can be recycled;

Measures for waste management are as follows [7]:

- ✚ waste sorting at the places of their accumulation and gathering good quality secondary materials, including the secondary sorting;
- ✚ utilization of secondary raw materials, production from the materials mentioned before and market development;
- ✚ separate collecting and recycling of biodegradating waste;
- ✚ power production while using waste materials (burning of waste in heating and power plants).

The waste that cannot be avoided and utilized later can be allowed to dispose only in special waste treatment equipment, implemented and exploited according to the legal requirements.

A progressive hierarchy of waste treatment principals has not been implemented in Lithuania yet. It means that the waste treatment of the lowest priority is still prevailing in the country, i.e. waste disposal in the dumps. In table 1 is shown a situation in Lithuania two years ago of composition of waste and methods of its treatment.

Table 1. Composition of waste in Lithuania in 2004 [11, 17]

A kind of waste	Waste accepted for treatment, ton	Treated waste, ton		
		Eliminated	Burned	Recycled
Hazardous waste	141913	33688	4369	78773
Non-hazardous waste	4836807	3980659	233730	436950
Chemical waste	155882	43141	4767	78673
Metal remains	630769	585611	-	23829
Glass remains/waste	24060	1475	-	23034
Paper and cardboard waste	108801	1440	1	106972
Plastic waste	22534	3189	73	19150
Timber waste	243112	2944	228064	17441
Textile waste	5070	2538	13	2204
Out-of use equipment	9976	5803	-	4212
Animal and vegetable waste	254528	164225	1158	38841
Mixed waste	983766	983503	18	293
Construction and demolition remains	391344	125315	-	145076

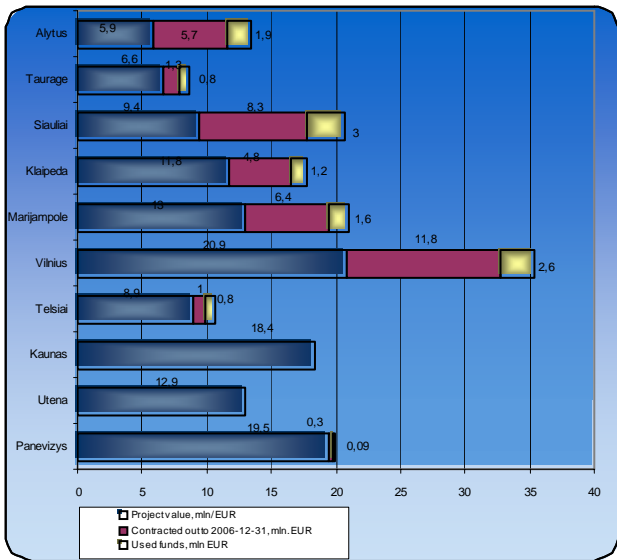
Nobody had any questions about the way of waste management 10 years ago, where it should go and what happens to it later. All the waste, with no sorting, went directly to the dumps, this way causing danger to the territories around the dumps and the threat of ecologic catastrophe. Five years ago people started thinking of a safe waste disposal, striving to decrease the waste harm to the people and environment.

Recently, wise utilization of the waste (sorting, recycling and obtaining the extra energy/power) is becoming the priority waste management. A new challenge in the waste treatment is coming in the future and it is the waste avoidance, or better – waste prevention. Enterprises will be established that will be able to offer

Table 2. Projects of waste management system, which are being implemented in different Lithuanian regions

Project name	Year	Project value, EUR
Alytus waste management system	2001	7 825 808
Taurage waste management system	2001	6 629 786
Sauliai waste management system	2001	9 402 000
Vilnius waste management system	2002	20 930 000
Klaipeda waste management system	2002	11 750 000
Marijampole waste management system	2002	13 009 000
Telsiai waste management system	2003	8 902 000
Utena waste management system	2004	12 945 680
Kaunas waste management system	2004	18 432 000
Panevezys waste management system	2005	29 487 000
Lithuanian hazardous waste treatment and disposal	2003	18 758 000

Pic. 3. Projects of waste management system: common value, contracted value, used funds in mln EUR [12]



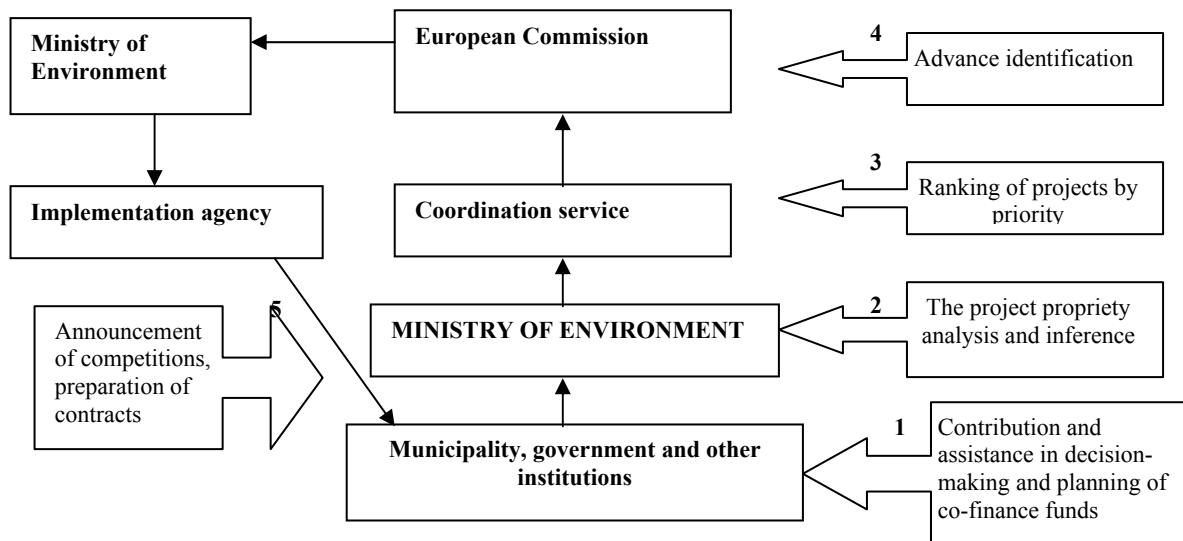
6. Financing Possibilities of Waste Management Projects by Using EU Cohesion Fund

EU regional politics could be kept as a one of very important part of all structural politics of EU, which is implemented by using Structural Funds and Cohesion Fund. The main purpose of Cohesion Fund is to extend financial support to all European Union countries for the improvement of its economical and social conditions.

The support from the Cohesion Fund can be given only for projects, which suit these criteria [9, 16]:

- ✚ if the project will implement the most expensive directives of EU;
- ✚ if the project common value will be not less then 10 mln EUR;
- ✚ if the project is prepared for development regional waste management system;
- ✚ from this fund can be covered not more then 80 - 85% of common project value.

By the order of EU Cohesion fund support administration in Lithuania the environmental management intermediate functions fill Ministry of Environment. Agency of Environmental project management is responsible for projects implementation. Ministry of Environment is responsible for project planning, for project coordination and projects quality. Agency of Environmental project management organise competition of pretenders (projects) to get support, prepare contracts (pic. 4).



Pic. 4. Cohesion fund projects cycle

For period 2004-2006 from European Cohesion fund will be given 608,87 mln EUR [9,16]:

- ✓ In 2004 year was given 209,57 mln EUR;
- ✓ In 2005 year was given 173,2 mln EUR;

✓ In 2006 year is planned to give 226,1 mln EUR.

If Lithuanian government and private organizations will be successful implementing environmental projects, and if there were

will be used all support given by EU funds, the situation of Lithuanian environment should be changed to really better side.

7. Conclusions

✚ Few decades ago people thought of sustainable development as an environmental issue only: the quality of air, water and natural resources had to be protected for both present and future generations. Today, the idea of sustainable development is becoming broader. More than ever, we now see that social issues such as social responsibility of enterprises are becoming very important. Only competitive and profitable enterprises are able to make a long-term contribution to sustainable development by generating wealth and jobs, without compromising the social and environmental needs of society. Businesses' objective is to ensure a balanced approach to sustainable development, which maximizes synergies between its economic, social and environmental dimensions. For these purposes various investment projects and programmes should be implemented. While it need a lot of investments, the EU funds and other international funds should be used.

✚ Eco-efficiency and legislation promote sustainability in different ways, although the aim is still the same. Environmental Management Systems (EMS) are created to reach the same aim - sustainability of economies, but with different means as well. EMS are in a way supporting the concept of eco-efficiency because of its contribution to materials and energy preservation and economy. In Lithuania EMS are being rapidly implemented through various projects and educational programmes. It is very positive measure because it does not only show the attention to environmental issues, but it also indicates the growth of the economy and investment, devoted not only to businesses' survival but to further actions, such as nature preservation.

✚ Waste management in Lithuania causes many problems. The systems of municipal waste collection are not effective yet and the equipment used for the collection is usually out of date. There is still lack of possibilities to recycle certain waste (e.g. glass, tires, electric equipment, textile products, out of use motor vehicles, etc.), eliminate or utilize hazardous waste and manage the disposal of biodegradating waste. Improvement or development of the waste management system is an important part of integration into the EU. The most attention must be given to the development of an effective waste management system.

✚ For period 2004-2006 year from EU Cohesion fund will be given 608,87 mln EUR for the implementation of environmental projects in all Lithuanian regions.

✚ For period 2000-2005 from EU funds were financed 11 waste management projects, which common value was 158,071 mln. EUR.

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