FINANCIAL FLOWS
IN THE WATER SECTOR IN THE CEE REGION

National report

LITHUANIA

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Executive summary

After regaining the independence in 1991 Lithuania was facing the transition from the centrally planned to market economies for a decade. Despite many efforts to improve water management, problems in water sector are still among the main environmental concerns in the country.

In the light of the EU accession process a lot of initiatives took place to meet the EU requirements in water sector. Nowadays the main concern in the sector in Lithuania, as well as in all the accession countries, is how to implement the Water Framework Directive (WFD). Thus the implementation of integrated water resources management is laden by institutional issues and financing.

A number of strategic documents in water sector was prepared for the implementation of the EU requirements in water sector. Sector specific and directive specific projects were launched during the past few years. ***Environmental Financing Strategy*** was adopted in 2001 and served as a basis for investment planning in water sector. This strategy has identified investments projects and has set a schedule for implementation of these projects.

The majority requirements of the EU Directives are already transposed into the national law. The requirements of the Urban Waste Water Treatment, Dangerous Substances, Nitrates, Fish Water, Drinking Water and Bathing Water Directives have been transposed until 2002. However, the implementation of the directives will require to expand monitoring programs, to develop system of quality assurance, to define long- term quality objectives for surface water as well as to establish new administrative structures for permitting and data collection.

Financial resources are crucial in water sector, as severe investments are required for the implementation of the EU requirements. The biggest share of the environmental investments during the last decade has been assigned to water sector. Approximately 1 billion Litas was allocated mere for the construction of waste water treatment plants in 1992 -2002. Nevertheless, in order to fully comply with the EU requirements for water quality, financial flows to the sector should be increased considerable.

Almost all water suppliers are under municipal jurisdiction. There are only few small private operators (in a few small settlements having industrial plants), that among other functions supply water and treat wastewater. There are no direct subsidies from the municipalities to support operation and maintenance systems of water supply or waste water treatment. Most of water companies are currently unprofitable, excluding those that serve the larger population. This phenomena could be explained by economies of scale and share of industry served, that could be charged more than households. Nevertheless, a number of profitable water companies is growing: in 2000 there were only two profitable water companies and in 2001 – already seven.

Although no direct subsidies are used, cross -subsidies approach is applied for setting - up the tariff system. Water and waste water tariffs are differentiated by user groups, but different prices do not reflect different costs. Social and political reasons as well as past traditions are the main reasons for such a differentiation of the prices. Each municipality has its own tariff and differentiation system. The difference between

tariffs differs up to 150% and the average prices for water supply is 1.40 Litas/m^3 and for wastewater treatment 1.71 Lt/m^3 . The sources of income of water operators are presented in a table below.

Table 1. Income sources of water operators in 2000

Income sources	**Mln. Litas**
Piped water	130
Waste water collection and treatment	160
Other income	23
Total	**313**

As far as ***charges*** are concerned, water operators pay an abstraction charge and a pollution charge on wastewater discharges. In addition, value added tax is imposed on water and waste water services. That amounts to 18%, as for other services and products in Lithuania. Financial flows from water sector in 2000 are presented in the table below.

Table 2. Financial flows from water sector in 2000

Source	**Amount in mln Litas**
Abstraction charges	8.4
Pollution charges	8.5
Fines	1.65
VAT	50
Total	**68.55**

As regards the ***investments*** into the water sector, they have been allocated from the State budget as well as by foreign donors. The foreign donors have provided funding for investments as well as for technical assistance in project development. ***PHARE, Large Scale Infrastructure Facility, bilateral donors*** (governments of Sweden, Finland, Norway and others) are among the main contributors to the water sector. Sources of finance in water sector are presented in the table below.

Table 3. Financial sources of municipal investments in water sector in 2000

Financial source	**Amount mln. Litas**
Central budget and privatisation fund subsidies	26.875
Foreign grants	24.35
IFI loans	60.49
Total	**111.715**

Approximately 60 million Litas were invested in Lithuania in water sector in 2001. However, so far almost no municipality has invested its own funds to waste water infrastructure. Lithuanian industrial companies usually finance water related

investments from their own resources and bank loans. Different investments into the water sector are presented in the figure below.

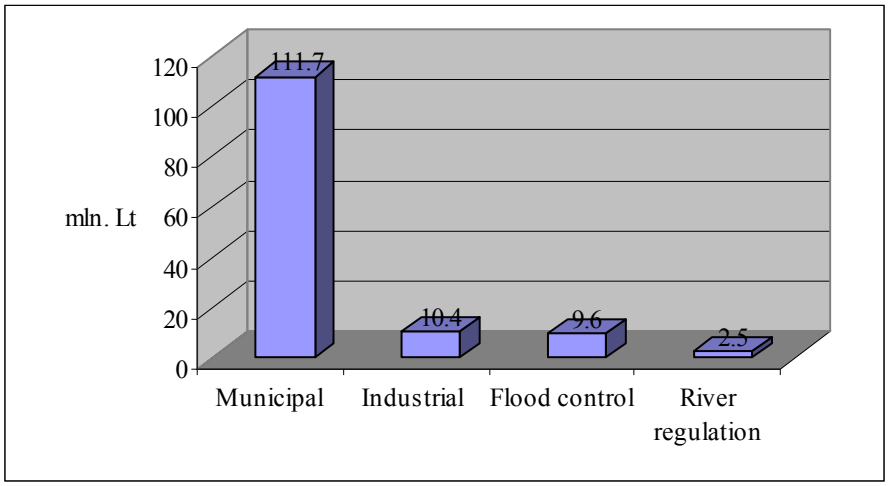

Figure 1. Investments to water management activities by targets in 2000.

To the extent that ***targets*** are concerned there are no specific long -term targets (2015, 2025) set for water sector. However, short - term targets in water sector are presented in the Negotiation Position, which reflects all main obligations that Lithuania has accepted for the implementation of the EU directives. Directive 91/676/EC on nitrate pollution from agricultural sources, 75/440/EEC on Drinking Water, 1996/61/EC on IPPC, 91/676/EC on Nitrates, 76/464/EEC on Dangerous Substances should be implemented by the hypothetical date of the accession to the EU - the year 2004. A sole transition period until 2010 has been accepted for the Urban Waste Water Treatment Directive.

As far as WFD is concerned, the transposition should be completed in 2003 and the implementation - according to the dates set in the directive. A technical assistance project for the WFD implementation is running currently and will provide more specific long - term targets and scenarios for integrated water resources management.

In addition to the Negotiation Position, the objectives for water quality and water management are presented in a couple of strategic documents. ISPA Strategy sets objectives and presents main investment projects to be implemented before 2010. River basins approach will be applied for grouping water infrastructure projects thus Lithuania will be divided into 5 or 6 river basins and master plans for each river basin are under preparation now. Moreover, a new Lithuanian Water Management Strategy is under preparation that will describe the main targets to achieve good quality of drinking and surface water.

Inasmuch as ***financial needs*** are concerned, the implementation of the main EU directives in water sector amounts totally to *2230 M Lt over the period until 2010.* More than a half of this amount makes implementation costs of the urban waste water treatment requirements, less than one third - the implementation costs of the Nitrates Directive. The rest of the total costs is distributed among the implementation costs of IPPC and Drinking Water Directives. The implementation of other water sector directives will not impose considerable costs. Total annual investments until 2010 are

presented in the figure below. 7% of operation and maintenance costs of the investment cost for water sector investments was used in the calculations.

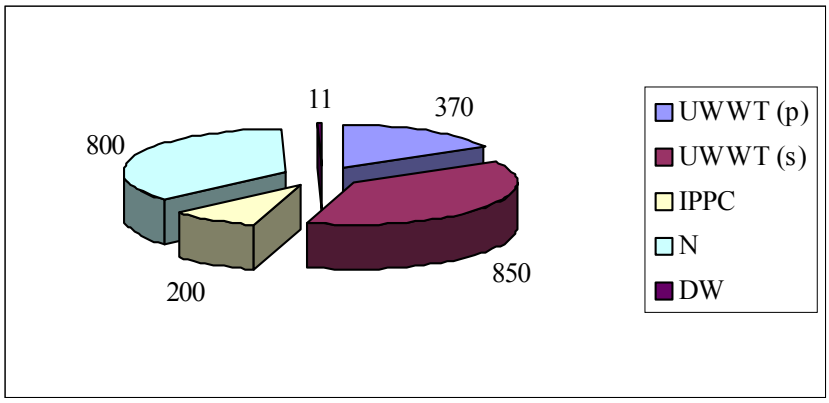

Figure 2. Total annual investments (million Litas) for the implementation of the EU requirements

Note: *UWWT (p) stands for the urban wastewater treatment plants;*
UWWT (s) stands for the urban wastewater sewerage network;
IPPC stands for the Integrated Pollution Prevention and Control directive;
N stands for the Nitrates directive;
DW stand for the Drinking water directive.

As regards ***financial sources*** the EU, International Financing Institutions and national sources are the potential financing sources for water sector development. *ISPA* is one of the main financing source of environmental oriented investments. Water and waste projects are presented for ISPA in Lithuania financing so far. In 2000-2002 14 investment projects have been prepared for ISPA financing. Implementation of all those projects will require 195 million Euro and ISPA part will amount to 100 million Euro. Approximately 25 million Euro could be assigned for environmental sector from ISPA in Lithuania each year. The other potential source of financing is *the EU Cohesion Fund*, that will be available for Lithuania after the accession. According to preliminary estimations of the Ministry of Environment, Lithuania will receive approximately 80 – 100 million Euro each year. Furthermore, after joining the EU, Lithuania will be eligible for *the EU structural funds*. According to preliminary estimations of the Ministry of Environment, Lithuania will receive approximately 30 million Euro each year from the Regional Development Fund. In addition, *the EU SAPARD program* will contribute to water sector as implementation of some investment projects, financed by this program, will improve water quality. Overall amount of SAPARD money received for agricultural measures will amount to approximately 30 million Litas each year. It is not yet estimated what part of it will be directly related to the improvement of water resources.

International financing institutions such as the World Bank, EBRD, EIB supports environmental sector by means of grants or soft loans. According to the financing rules applied in Lithuania and co-operation agreements with IFIs, at least 50 million Litas should be provided by international banks each year.

National sources are scared compared with the foreign potential. The state budget commitment for financing of environmental projects each year amount to

approximately 40 million Litas. Contributions from environmental funds in Lithuania are minimal. They are not considerable in comparison to all other sources. Financing potential from municipal budget or municipal environmental funds is very limited. Thus, it is expected that private capital should invest approximately the same amount of funds into environment related issues as it is needed to invest in the municipal infrastructure.

In order to analyse ***affordability,*** scenarios for financial sources were developed and demand and supply of funds were estimated in the Lithuanian Environmental Financing Strategy. The Strategy concludes that the *supply of funds each year is adequate to implement environmental EU requirements.*

The estimated tariff burdens do not approach the level of 4-5% of household income that is considered to be an acceptable upper level. The state co-financing share ща water projects represents only a small part (less than 0.1%) of Gross Domestic Product. In case of the moderate economic growth, the application of expected financial schemes as well as favourable loan conditions, the implementation of water sector projects should not be a significant burden for Lithuanian economy.

However, the administrative capacity is low to absorb the investments flows and to supervise the project development effectively. This may be the obstacle for the successful management of funds for Lithuanian water sector. Therefore strengthening administrative capacity of water sector is necessary.

1. Introduction and objectives

After regaining the independence in 1991 Lithuania was facing the transition from the centrally planned to market economies for a decade. Despite many efforts to improve water management, problems in water sector are still among the main environmental concerns in the country.

In the light of the EU accession process a lot of initiatives took place to meet the EU requirements in water sector. Sector specific and directive specific projects were launched during the past few years. Nowadays the main concern in the sector in Lithuania, as well as in all the accession countries is how to implement the freshly issued EU Water Framework Directive (WFD).

Recent decentralisation and privatisation has stipulated the transfer of the responsibilities to local authorities for municipal water supply, wastewater treatment, and development of water infrastructure. As Lithuania has to make significant investments to meet the requirements of the EU directives, varies source of financing is going to be used including municipal budget, the state budget, loans and foreign funding.

The Global Water Partnership (GWP) aims at preparing a set of implementation mechanisms and investment priorities for implementation of a long-term Vision for Water. GWP has identified institutional issues and financing as main concerns for implementation of integrated water resources management.

The aim of this report is to identify the investment needs to water sector in Lithuania and to evaluate a level of annual costs and affordability of these levels. Moreover, technical and economical instruments for realisation of cost recovery have to be distinguished. The study will cover estimation of investment outlays, and operating and maintaining systems costs, annualised costs, the analysis of existing financial flows and financing sources. Furthermore, overall affordability of the society will be analysed.

Chapter 2 of the report presents the current situation in water sector in Lithuania and Chapters 3 discusses future targets (2015 and 2025), scenarios and alternatives. Future needs and sources are covered in Chapter 4 and gaps and affordability is addressed in Chapter 5. Chapter 6 outlines conclusions for current situation and future trends of Lithuanian water sector management. Annex 1 presents a national data collection and analysis questionnaire. The data of the questionnaire were used for preparation of this report. Annex 2 screens the general information as Annex 3 describes the transposition of the main EU directives into the national law.

2. Current situation

2.1 Recent development of water management

Since independence, water protection has been an environmental area of top priority in Lithuania. The importance of the sector was indicated in all environmental protection programs developed in the last ten years. The last Lithuanian Environmental Protection Strategy adopted in 1996 implies that investments, funds from the state budget, loans and subsidies should be addressed to the construction of wastewater treatment plants. In addition, the Strategy emphases the importance of reduction of disperse pollution of groundwater and surface water as well as the need of amendment of the wastewater financing schemes, development of appropriate legislation and application of polluter pays principle.

At present, the implementation of the EU environmental *acquis* is of the highest priority. The negotiations on the chapter *Environment* with the European Commission was closed in June 2001. The Common Position sets the obligation to fulfil all EU requirements in water sector by the date of accession. The exception was made for the Urban Waste Water Treatment Directive, requirements of witch should be implemented in phases by 2010.

The majority requirements of the EU Directives are already transposed into the national law. The requirements of the Urban Waste Water Treatment, Dangerous Substances, Nitrates, Fish Water, Drinking Water and Bathing Water Directives have been transposed until 2002.

The implementation of the directives will require to expand monitoring programs, to develop system of quality assurance, to define long- term quality objectives for surface water as well as to establish new administrative structures for permitting and data collection. The Water Framework Directive claims to ensure "good" water quality in all water bodies. "Good status" is described in general terms, thus each Member State have to select chemical, ecological, biological and quantitative elements of "good" water quality status. In addition, the directive requires to apply river basin principal in water resources management. For this purpose administrative system should be reorganised, monitoring program should be enhanced as well as co-operation in water management with the neighbouring countries has to be strengthen.

2.1.1. Development of strategic documents in water sector

A number of strategic documents in water sector was prepared for the implementation of the EU requirements in water sector. Although those documents were not officially adopted they have served as a basic material in planning process of the transposition and the implementation.

Approximation Strategy of Water Sector (1998) was the first document where the EU requirements of water sector were reviewed, gaps were assessed as well as problems were identified. In addition, the priority actions were set and responsible institutions assigned.

This strategy was followed by the ***EU Water Resources Management Approximation Program and Implementation Program of the EU Requirements.*** This program outlined transposition of the EU requirements into the national law more in detail. Moreover, evaluation of the implementation costs, development of institutional structure, monitoring and reporting were analysed here.

Implementation Strategy of Nitrates *Directive* (91/676/EEB) was prepared in 2000 and implied the reduction of water pollution from agriculture as a priority action. The Nitrates Directive will be implemented in several steps. During the first phase, the first implementation program will be prepared. The program will focus on pollution prevention measures, that will not require large investments.

Environmental Financing Strategy was adopted in 2001 and served as a basis for investment planning in water sector. This strategy has identified investments projects and has set a schedule for implementation of these projects.

2.1.2. Technical preconditions to meet the EU requirements

As all drinking water in Lithuania comes from groundwater sources, there are no considerable problems related to the drinking water quality. In some regions of Lithuania groundwater is naturally enriched by chemical elements, that worsen the quality of drinking water. Amount of florides and iron in drinking water are of the main concerns.

More than 90 thousand inhabitants in North - West Lithuania use drinking water where concentration of florides exceeds maximum allowable concentration. 97.6% of publicly supplied water meets the EU quality standards for florides. The iron is a very common compound in drinking water. Drinking water enriched with iron diminishes water quality as far as colour, smell and taste is concerned. In addition, the quality of drinking water badly depends on the status of piping - worn pipelines makes water quality poorer. As regards the EU standards of mandatory components, only standards for nitrites are stricter in Lithuania than in the EU.

In total more than 90% of urban population and almost half of rural population is connected to water supply facilities[1]. A little less dwellings stock is served by sewage collection facilities (total about 2 million inhabitants). Access to public water supply and sewerage facilities, in % of population in 2000 is presented in the table below.

Table 1. Access to public water supply and sewerage facilities, in % of population in 2000

	Rural	**Urban**	**Total**
Water supply facilities of dwellings stock	45.3	91.4	75
Sewage collection facilities in dwelling stock	40.7	91.1	73.2

A number of dwelling stock that uses public water supply and waste water treatment has increased during last few years. Access to water supply facilities and sewerage system is presented in the figure below.

[1] Hereafter figures correspond the year 2000.

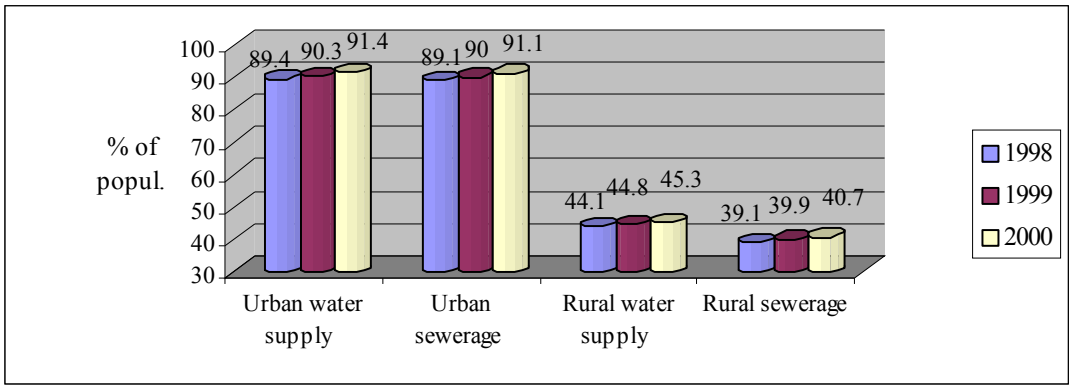

Figure 1. Access to water supply facilities and sewerage system of dwelling stock, in per cent of urban and rural population in 1998 - 2000.

Urban Waste Water Directive covers 84 Lithuanian cities. The analysis of the sewerage system of these cities shows that nitrogen and phosphorus are removed in 15 waste water treatment plants (WWTP). In 61 WWTP biological treatment is applied and in 6 towns waste water is treated mechanically. Waste water from 2 towns is discharged without any treatment. Following the requirements of the directive in question, all 84 cities should have biological waste water treatment facilities and 38 biggest cities have to remove nitrogen and phosphorus from waste water. Although during the last decade big investments were made in construction of waste water treatment facilities, 61 % and 19 % of population is served by biological treatment and treatment with nitrogen removal correspondingly. That makes the situation that only 14 % population is served by the wastewater treatment according the requirements of the EU directive 91/271/EC at present moment.

Annual water uses has been declining during the last decade. In 1996 total water consumption was 5.59 km^3, in the year 2000 the consumption dropped to 3.53 km^3 per year. From that amount main part (3.29 km^3) is used for water cooling, 0.052 km^3 - for industry via own intake and 0.0018 km^3 - for agriculture. The reasons of such reduction is more efficient water use and water savings. Average municipal water consumption per capita in the year 2000 was 78.7 litre a day.

Water losses in a distribution network is one of the main problem of ineffective water collection. Many municipalities count up to 20 % of water looses in the distribution systems. Main reason for leakage is worn and tired piping network. This is also the course of a high in/exfiltration rate of the sewerage system, that reaches up to 32%.

The five-class surface water classification system (according to the EU Fresh Water, Fish Water Directives and partially following the WFD) was adopted in 2001, therefore assessment of surface water quality for 2000 is not available. Present monitoring system focuses on large and polluted rivers. Small rivers and clean waters are not under consideration.

2.2. Present costs and financial flows

In order to develop practically applicable implementation plans, it is necessary to identify the need of financial resources for strengthening or reorganisation of institutional system, construction of new or renovation of existing infrastructure as well as operation, maintenance and performance of supervision institutions. Distinguishing of financial resources is of crucial importance in water sector, as severe investments are required for the implementation of the EU requirements. The biggest share of the environmental investments during the last decade has been assigned to water sector. In 1992 -2000 approximately 1 billion Litas was allocated for the construction of WWTPs. In order to fully comply with the EU requirements for water quality, financial flows to the sector should be increased considerable.

Almost all water suppliers are under municipal jurisdiction. All 44 out of 45 water suppliers in Lithuania are united under the Association of Water Suppliers. In addition, there are few small private operators (in a few small settlements having industrial plants), that among other functions supply water and treat wastewater[2].

The operators have received 130 million Litas [3] for piped water in the year 2000, from that amount 3/5 (80 mln. Litas) of water was bought by households. Collection and treatment of wastewater brought 160 mln. Litas income to the operators. More than a half (81 mln. Litas) of this amount came from households.

Table 2. Income sources of water operators in 2000

Income sources	**Mln. Litas**
Piped water	130
Waste water collection and treatment	160
Other income	23
Total	**313**

Cross -subsidies approach is applied for setting - up the tariff system. Water and waste water tariffs are differentiated by user groups. However, different prices do not reflect different costs. Social and political reasons as well as past traditions are the main reasons for differentiation of the prices. Each municipality has its own tariff and differentiation system. More than a half of municipal water companies (24 out of 44) set bigger tariffs for industries than for households; 6 companies set higher tariffs for households than industries and 14 companies set the same tariff for all user groups for water supply. As regards wastewater discharge 16 set higher tariffs for industries than for households; 11 set higher tariffs for households than for industries and 17 companies set the same tariff for all user groups. In such a way, the difference between tariffs differs up to 150% and the average prices for water supply is 1.40 Litas/m^3 and for wastewater treatment 1.71 Lt/m^3 . In order remove cross subsidies, fluctuated pricing should be applied.

[2] In this chapter the figures provided by the Water Suppliers Association are used, excluding small private suppliers. Therefore, the figures are not exact, netherheless they indicates the actual situation in Lithuania.

[3] 1 EUR = 3.45Litas

There are no direct subsidies from municipalities to support operation and maintenance systems of water supply or waste water treatment. Most of water companies are currently unprofitable. Only the utilities serving the larger population are profitable and this could be explained by economies of scale and larger industrial base from which higher charges can be applied. Nevertheless, a number of profitable water companies is growing: in 2000 there were only two profitable water companies and in 2001 – already seven.

Water operators pay an abstraction charge and a pollution charge on wastewater discharges. In 2000 8.4 million Litas were collected for abstraction of groundwater and use of surface water. As regards pollution charges, 8.5 million Litas were paid for pollution of water bodies by all polluters. Total fines make 1.65 million Litas in 2000. This sum was paid as penalties for the discharges into water bodies exceeding the permitted limits (according to the Law on Pollution Charges) and as damage compensation in cases of accidents.

In addition, value added tax is imposed on water and waste water services. That amounts to 18%, as for other services and products in Lithuania. According approximate estimation, amount of VAT transferred to state budget from municipal water companies comprised 50 million Litas. Financial flows from water sector in 2000 is presented in the table below.

Table 3. Financial flows from water sector in 2000

Source	**Amount in mln Litas**
Abstraction charges	8.4
Pollution charges	8.5
Fines	1.65
VAT	50
Total	**68.55**

In 2001, investments into the water sector amounted to approximately 60 million Litas. Waste water treatment facilities are still subsidised by the State budget and foreign donors. The following figure presents a ratio provided to the construction of waste water treatment systems by the State budget in recent years.

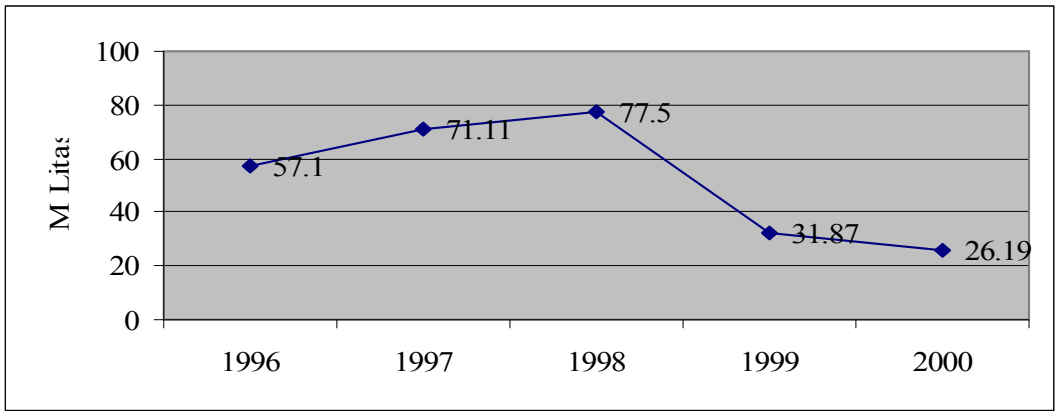

Figure 2. A trend of the state budget expenditure for the waste water treatment in Lithuania in million Litas

In addition to the state budget, construction of waste water treatment system was heavily supported by foreign donors. Foreign donors have provided funding for investments as well as for technical assistance in project development. 15 million Euro have been provided for water related infrastructure by ***PHARE*** for Lithuania until 2001.

Moreover, Lithuania received 14.4 million Euro in 1999 (of which 12.2 mln. Euro for investment projects) from ***Large Scale Infrastructure Facility*** under the EU. for technical aid in water sector.

In addition, Lithuanian water sector was supported by ***bilateral donors*** (governments of Sweden, Finland, Norway and others) by approximately 20 million Euro up to 2001. Following the rough estimation the bilateral and EU assistance for Lithuania water sector amounted to approximately 7 million Euro per year up to 2001.

Although the Environmental expenditure for investments from the state budget is decreasing, the total amount of investments in water sector has increased during the last five years due to the support of foreign donors.

Municipal water management is supported by the Government and by International Financing Institution (IFI). Financial sources of municipal investments are presented in the table below.

Table 4. Financial sources of municipal investments in 2000

Financial source	**Amount mln. Litas**
Central budget and privatisation fund subsidies	26.875
Foreign grants	24.35
IFI loans	60.49
Total	**111.715**

So far almost no municipality has invested its own funds to waste water infrastructure. Until 1998 a share of the state subsidies assigned to the construction of WWTPs has been increasing, however since 1998 it has been constantly diminishing.

Industrial companies usually finance water related investments from their own resources and bank loans. Recently Lithuanian Environmental Investment Fund has provided soft loans for industry for investment in water facilities. In 2000 approximately 10 million Litas were used by industrial enterprises for the end-of-pipe water related installations and approximately 0.4 million Litas for integrated technologies.

Flood control investments come from the governmental and municipal sources. According to the Programme for the Preparation for Floods in Klaipeda Region, adopted by the Government of Lithuania, approximately 10 million Litas are devoted for the control of floods in Lithuania each year. The approximate structure of financial sources and amounts for the previous and coming years is presented in the table below

Table 5. Structure of financial sources

Financial source	**Amount mln. Litas**
State budget	4
Road Fund	5.5
Municipal budgets	0.05
Ministry of Environment (Hydro-meteorological service)	0.01
Total	**9.56**

Other water management activities (dikes maintenance and repairing) is financed by the state budget only and amounts to approximately 2 – 2.5 million Litas per year.

Different investments to water sector described above are presented in the figure below.

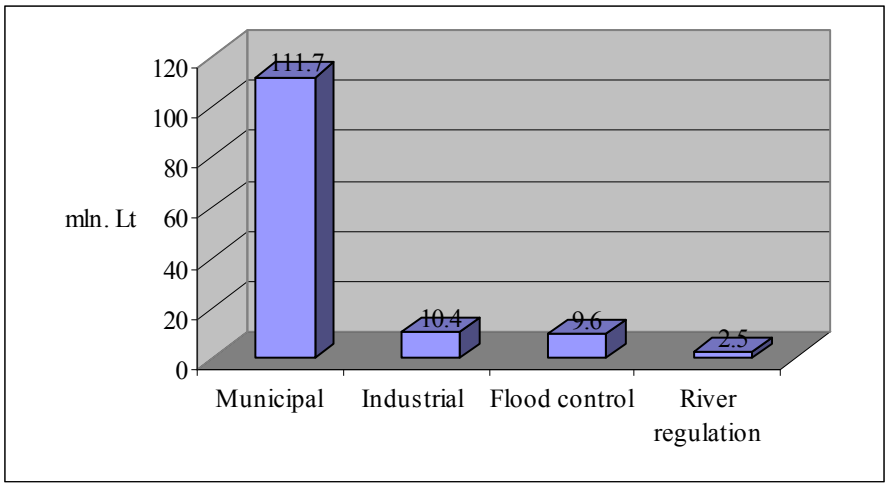

Figure 3. Investments to water management activities by targets in 2000.

General information on population, GDP per capital, income per capita and trends are presented in Annex 2. According to the short-term forecasts of the Ministry of Finance of the Republic of Lithuania, the expenditures of households will grow.

3. Future targets

Main short - term objectives of water management in Lithuania is meeting the requirements set in the EU water directives. The majority of the fundamental EU requirements in water sector have been already transposed to national legislation. Technical provisions of the directives have been transposed into subordinate legislation. Annex 3 presents the main steps of the transposition.

The Negotiation Position of Lithuania reflects all main obligations that Lithuania has accepted for the implementation of the EU water sector directives. The transition period until 2010 has been accepted for the Urban Waste Water Treatment Directive. Lithuania has been obligated to implement the directive in question with the following intermediate targets:

- By 2008 to construct WWTPs that comply with the requirements of the directive in the cities (38 agglomerations) with more than 10,000 inhabitants equivalent (in line with Article 5, a total biodegradable load of about 2 484 500 population equivalents)
- By 2010 to construct WWTPs that comply with the requirements of the directive in the agglomerations with a population equivalent between 2,000 and 10,000 (46 agglomerations, representing currently a total biodegradable load of about 199 300 population equivalents).
- By 2010 to comply with the requirements for renovation and development of wastewater pipelines (in line with Article 3 in all 84 agglomerations of a population equivalent above 2,000)

Directive 91/676/EC on nitrate pollution from agricultural sources, 75/440/EEC on Drinking Water, 1996/61/EC on IPPC, 91/676/EC on Nitrates, 76/464/EEC on Dangerous Substances should be implemented by the hypothetical date of the accession to the EU - the year 2004.

As regards, nitrate pollution from agricultural sources, all new livestock units will comply upon accession and all measures not requiring large investments will be made mandatory upon accession. The implementation of the first action programme will begin by the date of accession. The implementation of the second action programme will ensure progressive compliance for smaller farms by 2008. Provisions of Article 3(5) of the Directives will be applied to the entire territory of Lithuania, since the entire Baltic Sea catchment area is identified as a sensitive area.

Concerning the discharge of dangerous substances Lithuania will review permits following the requirements of the Directive and will regularly present results of the ongoing activities. Furthermore pollution reduction programmes for the List II substances upon accession for the entire territory should be prepared.

As far as WFD is concerned, the transposition should be completed in 2003 and the implementation - according to the dates set in the directive. A technical assistance project for the WFD implementation is running currently and will provide more specific long - term targets and scenarios for integrated water management.

A new Lithuanian Water Management Strategy is under preparation. The strategy will describe the main targets to achieve good quality of drinking and surface water.

Moreover, ISPA Strategy sets objectives and presents main investment projects to be implemented before 2010. Lithuania will be divided into 5 or 6 river basins and master plans for each river basin are under preparation now. River basins approach will be applied for grouping water infrastructure projects..

There are no specific additional targets established for 2015 and 2025 set yet.

4. Future needs and sources

4.1 Financial needs

In 2001 the Government of Lithuania has adopted the Environmental Financing Programme prepared by the Ministry of Environment. This programme specifies total and directive specific financial needs.

Following the Environmental Financing Strategy water sector will need approximately 1220 million Litas to meet the EU requirements of the Urban Waste Water Treatment Directive. Approximately 70% of this sum will be needed to meet the requirements for the extension or renovation of sewerage systems. The implementation plan of this directive has been already prepared and almost 90 investments projects have been identified.

As far as Drinking Water Directive is concerned, improvement of drinking water quality will require twofold costs. A part of the investments will be assigned to meet the requirements of the EU Drinking Water Directive, reduction of fluorides amount in particular. According to a recent study prepared for the European Committee of the Republic of Lithuania on the implementation of the Drinking Water Directive, the removal of fluoride in the drinking water in Northern-Western part of Lithuania will cost 10.8 million Litas.

Since the iron is not treated as a mandatory indicator of drinking water quality in the EU, the cost of minimisation of the amount of the iron is not considered as the cost of the implementation of the directive. Amount of the iron in drinking water is regulated by national standards. In order to reduce the amount of the iron in drinking water about one fifth of drinking water pipelines have to be replaced or renovated and iron removal facilities should be placed in a number of watering places. According calculations made, iron removal will cost about 140 mln. Euro.

Indicative cost of the implementation of the directive 1996/61/EC on IPPC is 700 million Litas. Water pollution control measures amount to approximately 30% of this sum (200 million Litas). However, it is recognised that the more reliable number could be received only by a case by case study of all industrial entities.

As regards Nitrates Directive 91/676/EC, the investment costs vary from 614 to 1100 million Litas according to different scenarios (different modernisation levels). Although the Nitrates Directive will be implemented by 2004, private investments by farmers are allowed to be made until the end of the overall two-stages implementation programme, i.e. by 2008.

There is no estimation of private costs for the implementation of Dangerous Substances Directive 76/464/EEC as well as costs for the implementation of the WFD are not assessed yet.

The implementation of other water sector directives will not impose considerable costs. Annual investment outlay for specific targets is presented in the figure below.

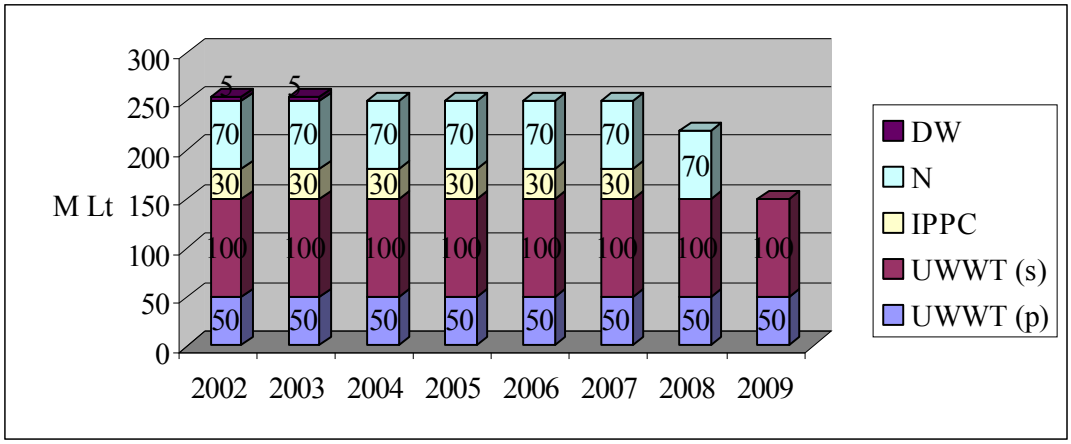

Figure 4. Annual investment outlay for the period of 2002 - 2009

Note: *UWWT (p) stands for the urban wastewater treatment plants;*
UWWT (s) stands for the urban wastewater sewerage network;
IPPC stands for the Integrated Pollution Prevention and Control directive;
N stands for the Nitrates directive;
DW stand for the Drinking water directive.

Total financial needs for the implementation of the main EU directives in water sector amounts to *2230 M Lt over the period until 2010.* More than a half of this amount makes implementation costs of the urban waste water treatment requirements, less than one third - the implementation costs of the Nitrates Directive. The rest of the total costs is distributed among the IPPC and Drinking Water Directives implementation costs. Total annual investments until 2010 are presented in the figure below.

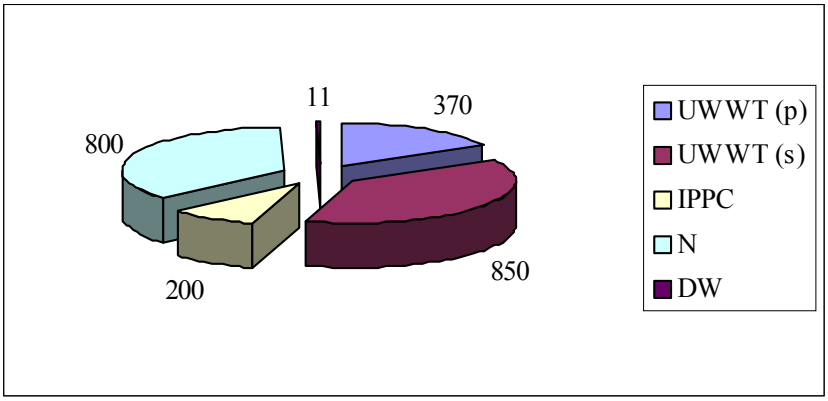

Figure 5. Total annual investments for the implementation of the EU requirements
Note as in previous figure.

Lithuanian Environmental Financing Strategy estimated 7% operation and maintenance (O&M) costs of the investment cost for water sector investments. O&M cost for new investment in development of drinking water systems amounts to 7%. That is applicable for the new wells in the region where level of fluorides is exceeded. This amounts to approximately 0.35 million Litas in 2002 and reaches approximately 0.8 million Litas in 2003 and following years. O&M cost for new investment in development of sewerage network makes 0.5% of investments. This would amount to approximately 0.5 million Litas in 2002 and grow up to 4 million of Litas in 2009.

O&R cost for new investments of municipal waste water treatment would amount to approximately 3.5 million in 2002 and reach approximately 28 million in 2009, if the 7% rate is used. O&M cost for new investment for flood control makes 3 million Litas each year. O&M costs for the implementation of the Nitrates directive are not considerable.

4.2 Financial sources

The EU, International Financing Institutions and national sources are the potential financing sources for water sector development.

ISPA is one of the main financing source of environmental oriented investments. General rule applied by the Government of Lithuania is that ISPA part should amount to approximately 50% of all investment needs for a specific investment project. Only water and waste projects are presented for ISPA in Lithuania financing so far. In 2000-2002 14 investment projects have been prepared for ISPA financing. Implementation of all those projects will require 195 million Euro and ISPA part will amount to 100 million Euro. Approximately 25 million Euro for environmental sector from ISPA in Lithuania each year, if there is appropriate capacity in the country to manage this support.

The other potential source of financing is the EU Cohesion Fund, that will be available for Lithuania after the accession. According to preliminary estimations of the Ministry of Environment, Lithuania will receive approximately 80 – 100 million Euro each year.

Furthermore, after joining the EU, Lithuania will be eligible for the EU structural funds. According to preliminary estimations of the Ministry of Environment, Lithuania will receive approximately 30 million Euro each year from the Regional Development Fund.

In addition, the EU SAPARD program will contribute to water sector as implementation of some investment projects, financed by this program, will improve water quality. Overall amount of SAPARD money received for agricultural measures will amount to approximately 30 million Litas each year. It is not yet estimated what part of it will be directly related to the improvement of water resources.

International financing institutions such as the World Bank, EBRD, EIB supports environmental sector by means of grants or soft loans. There are no exact figures available for each IFI. According to the financing rules applied in Lithuania and co-operation agreements with IFIs, at least 50 million Litas should be provided by international banks each year.

National sources are scared compared with the foreign potential. The state budget commitment for financing of environmental projects each year amount to approximately 40 million Litas. Contributions from environmental funds in Lithuania are minimal. They are not considerable in comparison to all other sources. Financing potential from municipal budget or municipal environmental funds is very limited. Thus, it is expected that private capital should invest approximately the same amount of funds into environment related issues as it is needed into the municipal infrastructure.

5. Gaps and affordability

The Lithuanian Environmental Financing Strategy has developed the scenarios for financial sources. It estimates the demand and supply of funds for environmental investments. Moreover, it indicates that the *supply each year is adequate to implement environmental EU requirements.*

The estimated tariff burdens do not approach the level of 4-5% of household income that is considered to be an acceptable upper level. The state co-financing share represents only a small part of GDP (for water projects less than 0.1%). In case of moderate economic growth and expected financial schemes as well as favourable loan conditions, the implementation of water sector projects should not be a significant burden for Lithuania. However, the administrative capacity is low to manage all possible projects. Therefore strengthening capacity is necessary.

6. Conclusions

At present the main objective for water sector in Lithuania is the compliance with the requirements of the EU directives. Most of the requirements are already transposed to the national legislation. The Water Framework Directive has to be transposed till 2003. All EU directives in water sector will be implemented by the day of accession, with the exception of the Urban Waste Water Treatment, that will be implemented in phases until 2010.

There is a number of strategic water management documents prepared in Lithuania. ISPA Strategy sets objectives and presents main investment projects to be implemented before 2010. A new Lithuanian Water Management Strategy is under preparation that will identify long -term targets for achievement of good quality of drinking and surface water.

Implementation cost of the EU water directives is high. The main part of the investments is needed for the renovation and development of water supply and waste water treatment infrastructure. The Lithuanian Environmental Financing Strategy has developed the scenarios for financial sources and estimated the demand and supply of funds for environmental investments. Water sector will need approximately 2230 million Litas to meet the EU requirements. Approximately 70% of this sum will be needed for the extension or renovation of sewerage systems. National sources are scarce therefore it is expected that the main part of the investments will come from the foreign financing sources.

The estimated tariff burdens due to the investments to water sector are less than 4-5% of household income. The State co-financing share represents less than 0,1% of GDP for water projects. The moderate economic growth and expected financial schemes as well as favourable loan conditions shall ensure that the implementation of water sector projects should not be a significant burden for Lithuania.

However, the administrative capacity is low to absorb the investment flows and to supervise the project development effectively. This may be the obstacle for the successful management of financial flows in Lithuanian water sector. Therefore strengthening administrative capacity of water sector is necessary.

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Abbreviations

GDP	Gross Domestic Product
GWP	Global Water Partnership
IFI	International Financing Institutions
IPPC	Integrated Pollution Prevention and Control
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EU	European Union
O&M	Operation and maintenance
VAT	Value Added Tax
WFD	Water Framework Directive

Annex 1. Questionnaire: national data collection and analysis. Financial flows in water sector in Lithuania

A. Background information[45]

Socio-economic data

A.1. GDP per capita (local currency/a/capita; annual data for the period of 1996-2000);

GDP per capita in Litas

	1996	1997	1998	1999	2000
Current prices	8510	10347	11611	11529	12157
Constant prices, 1995=100					
Litas	6804	7307	7687	7393	7645
Change in %	4.9	7.4	5.2	-3.8	3.4

Source: Official statistical data: Statistical yearbook, 2001

Monthly disposable (net) income per capita (local currency/a/capita; 1996-2000),
Average disposable income per capita per month in Litas

	1996	1997	1998	1999	2000
Disposable income	326.7	368.9	422.5	428.0	415.4
Disposable income in cash	253.0	297.0	350.4	360.4	349.4
Disposable income in kind	73.7	71.9	72.1	67.6	66.0

Source: Official statistical data: Household income and expenditure, 2001

A.2. Unemployment rate (%; 1996-2000);

1996	1997	1998	1999	2000
7.1	5.9	6.4	8.4	11

Source: Official statistical data: Statistical yearbook, 2001

A.3. Inflation rate (%; 1996-2000);

1996	1997	1998	1999	2000
24.6	8.9	5.1	0.8	1.0

Source: Official statistical data: Statistical yearbook, 2001

A.4. Total and urban population (million inhabitants, 2000);

	1996	1997	1998	1999	2000
Total	3.712	3.707	3.704	3.700	3.698
Urban	2.518	2.534	2.525	2.523	2.522
Urban in % of	67.8	68.4	68.2	68.2	68.2

[4] This is needed to set targets properly and to develop scenarios (see later);
[5]

total					

Source: Official statistical data: Statistical yearbooks

A.5. Average number of person per household (2000);

	1996	1997	1998	1999	2000
Average size of a household	2.76	2.74	2.69	2.65	2.62
Urban	2.69	2.68	2.66	2.62	2.60
Rural	2.93	2.89	2.77	2.72	2.66

Source: Official statistical data: Household income and expenditure

A.6. Long term forecast of the disposable (net) income changes (please indicate the source of the estimate);

Forecasts of the household disposable income do not exist.
According to the short-term forecasts of the Ministry of Finance of the Republic of Lithuania, the expenditures of households will grow as follows:

	2002	2003	2004	2005
In million Litas, per year for all households	32081	34385	36613	38692
Growth in %, 2002=100%	100	107.2	114.1	120.6

Source: web-site of the Ministry of Finance

A.7. Changes of prices;

Previous year = 100%	1995	1996	1997	1998	1999	2000
Changes of consumption prices (inflation)	100	24.6	8.9	5.1	0.8	1.0
Changes of investment outlay prices	100	9.8	31.7	11.8	-9.6	-9.7

Source: web-site of the Ministry of Finance

A.8. Present rate of rediscounted bills - commercial credit (%);

6.62%
Source: web-site of the Bank of Lithuania

A.9. Present expected rate of return of the capital in the municipal sector (%);

According to the latest recommendations from the National Control Commission for Prices and Energy (state regulator), the expected rate of return of the capital for water companies is 1.5 – 3%.

Source: The Methodology for the Establishment of Prices for Cold Water Supply and Wastewater Treatment, adopted by the National Control Commission for Prices and Energy at November 30, 2001, Order No 119.

Technical data

A.10. Access to public water supply[6] (% of the total population, 1996-2000), split into rural- and urban population (% of the total rural and total urban population, resp.);

Water supply facilities of dwellings stock, in per cent

	1996	1997	1998	1999	2000
Total	n.a.	n.a.	72.8	73.8	75
urban	90.2	90.1	89.4	90.3	91.4
rural	n.a.	n.a.	44.1	44.8	45.3

Source: Statistical yearbooks

A.11. Ratio of public water supply not violating quality standards[7] (%);

As all drinking water in Lithuania comes from groundwater sources, there are no considerable problems related to the drinking water quality. From mandatory parameters, drinking water standards only for nitrites are stricter in Lithuania than in the EU.
According to the analysis made by the Geological survey of Lithuania 2.4% of all population consume water which exceeds the standard for fluorides. Hence, 97.6% of publicly supplied water does not violate quality standards according to the EU mandatory requirements.
Approximately 60% of drinking water provided to Lithuanian population do not meet Lithuanian Hygiene Norm's requirements for iron. Hence, 40% of publicly supplied water does not violate this parameter standard, which in the EU is of a mandatory character.
Other water quality parameters are in compliance with the standards set.

A.12. Access to sewerage (%, 1996-2000), split into rural and urban population (%);

Connection to sewerage in dwellings stock, in per cent

	1996	1997	1998	1999	2000
Total	n.a.	n.a.	70.7	71.8	73.2
urban	89.9	89.8	89.1	90.0	91.1
rural	n.a.	n.a.	39.1	39.9	40.7

Source: Statistical yearbooks

A.13. Ratio of treatment of the collected wastewater (%, 2000), split into rural and urban population (%);

[6] If more desegregated data are available indicate access to piped water in (a) own flat; (b) in the building and (c) access to public tap close to the building;
[7] Indicate if standards are equivalent or stricter than EU ones;

Inhabitants connected to sewerage (million inh.)*	Primary (mechanical) treatment, only** (%)	Biological treatment[8], only** (%)	Treatment with nutrient removal** (%)	Treatment meeting requirements of the 91/271/EC directive**[9] (%)
Total – 2.046 million inh.	18	61	19	14
Rural – n.a.	n.a.	n.a.	n.a.	n.a.
Urban – n.a.	n.a.	n.a.	n.a.	n.a.

** - Data from Water Suppliers Association: biannual publications on the main indicators of water companies; official statistical data on this not available*
*** - Data from the Ministry of Environment annual activity report Aplinka, Vilnius, 2001*

A.14. Areas endangered by floods (endangered area/total country area) (%, 2000);

Areas endangered by floods in Lithuania make approximately 52,000 hectares or 0.8% of the total country area.

A.15. Total length of flood control dikes (km, 2000);

Total length of flood control dikes in 2000 was 326 km.

A.16. Ratio of dikes (and other flood control facilities), which completely correspond to design criteria[10] (%, 2000);

Dikes and other flood control facilities are often damaged by the spring floods. It is estimated that approximately 25% of flood control facilities need to be repaired.

A.17. Annual water uses (km^3):

Year	Total	Municipal	Households, only*	Industry[11] via own intake**	Cooling water uses	Agriculture	Water use/water supply[12]***
1996	5.59	0.17	n.a.	0.047	5.27	0.0029	0.27
1997	4.72	0.15	0.088	0.063	4.41	0.0023	0.24
1998	5.07	0.13	0.070	0.0583	4.79	0.0023	0.20
1999	4.60	0.12	0.062	0.053	4.33	0.0021	0.19
2000	3.53	0.11	0.059	0.052	3.29	0.0018	0.17

Source: Ministry of Environment annual reports

[8] Including primary treatment;
[9] The assessment is independent on figures of previous columns
[10] The not corresponding portion is the „safety gap" which should be reduced. Specify the criteria used;
[11] Excluding water used in the energy sector
[12] As water used/available water resources. The latter are defined as total available resources – water arriving from other countries (called external resources), which is equal to the internal resources

* - data only from companies belonging to Water Suppliers Association; *Source: Biannual reports of indicators of water supply companies*
** - including supply from centralised systems; however, the latter part amounts to a not considerable part
*** Note: Only groundwater is used for drinking purposes in Lithuania, therefore the ratio water use/water supply is applied only for groundwater. *Source: Web-site of Geological Survey and Ministry of Environment annual reports*

A.18. Municipal water consumption (national average)[13] (l/inh/day, 1996-2000);

1996	1997	1998	1999	2000
n.a.	118.9	90.4	85.4	78.7

Source: Biannual reports of indicators of water companies, Water Suppliers Association

A.19. Urban water consumption (national average);

n.a.

A.20. Rural water consumption (national average);

n.a.

A.21. Water losses in the distribution network (%, 2000);

20%
Source: Biannual report of indicators of water companies, Water Suppliers Association, 2001

A.22. Ratio of in-/exfiltration of the sewer system (%, 2000);

32%
Source: Biannual report of indicators of water companies, Water Suppliers Association, 2001

A.23. Quality of surface waters: ratio of waters belonging to Class I and II in a five-class water quality evaluation system (%, 2000)[14];

Not available

The five-class surface water classification system (according to the EU Fresh water fish directive and partially Water framework directive) was adopted in 2001, therefore assessment of surface water quality for 2000 is not available. Present monitoring system focuses on large and polluted rivers. Small rivers and clean waters are underrepresented. Ratio between polluted/clean rivers would be very misleading as it indicates quality of waters that are monitored and not the real situation.

[13] If wastewater generation is strongly differing from water consumption, please add its value
[14] Indicate at what extent the classification system is compatible with the EU methodology

B. Present financial flows[15]

Flows connected with water provision and wastewater collection/treatment

- Incomes of water and wastewater operators from:

B.1. Selling piped water (total);

130 million Litas
Source: Biannual report of indicators of water companies, Water Suppliers Association, 2001
Note that the presented number reflects the income received by water companies belonging to the Association of Water Suppliers. Out of 45 main water companies 44 belongs to the mentioned Association. All those water companies are municipal owned companies. In addition, there are few small private operators (in a few small settlements having industrial plants), which among other functions perform the water supply and wastewater treatment duties. Therefore, the numbers provided for this and following six questions show more "minimum" than "maximum" values, nevertheless, the overall range indicates the actual situation in Lithuania.

B.2. For households;

80 million Litas.
Source: Biannual report of indicators of water companies, Water Suppliers Association, 2001

B.3. For other clients;

50 million Litas.
Source: B.1. minus B.2.

B.4. Collecting and treating wastewater (total);

160 million Litas.
Source: Biannual report of indicators of water companies, Water Suppliers Association, 2001

B.5. For households;

81 million Litas.
Source: Biannual report of indicators of water companies, Water Suppliers Association, 2001

B.6. For other clients;

79 million Litas.

[15] Note that whenever appropriate the answer should consist of (a) the value for 2000 in local currency (current prices; please use "millions of ", or "thousands of "), (b) ratio of execution, (executed/imposed, %) and (c) assessment of trends from previous years (increasing, decreasing, stable, unstable);

Source: B.1. minus B.2.

- Other incomes

23 million Litas.
Source: Biannual report of indicators of water companies, Water Suppliers Association, 2001

B.7. Municipal subsidies supporting OMR;

There are no direct subsidies for the running costs of water supply or wastewater treatment. Most of water companies are unprofitable (detrimental) now. Only the utilities serving the larger population levels are profitable and this could be explained by economies of scale and larger industrial base from which higher charges can be applied. Nevertheless, the trend for this is optimistic – in 2000 there were only two profitable water companies and in 2001 – already seven.

B.8. Other subsidies (specify);

Investments mainly into wastewater treatment are still subsidised by the State budget and foreign donors. In 2001, investments into the water sector amounted to approximately 60 million Litas. The following table presents the portion provided to the construction of wastewater treatment systems by the State budget in recent years.

Table. State budget expenditure for the wastewater treatment in Lithuania in million Litas

	1996	**1997**	**1998**	**1999**	**2000**
Environmental expenditure for investments	57,10	71,11	77,50	31,87	26,19

Foreign donors have financed mainly construction of wastewater systems as well. Up to 2001 approximately 15 million euros or 60 million Litas have been provided for water related infrastructure by PHARE.
In 1998 Large Scale Infrastructure Facility (LSIF) in the EU was created and Lithuania received from this instrument technical aid in the water sector. This amounted to 14.4 million Euros in 1999 of which 12.2 mEuro went to investment projects.
Bilateral donors (governments of Sweden, Finland, Norway and others) supported Lithuanian environmental sector infrastructure creation as well and granted approximately 80 million Litas or 20 million euros up to 2001.
Generally, though it is quite difficult to attach a concrete sum of investment funds provided each year, it could be roughly calculated that the bilateral and EU assistance for Lithuania water sector amounted to approximately 30 million Litas or 7 million euros per year up to 2001.
Note that the exchange rate between Lt and Euro for the above numbers is 1Euro = 4.1 Lt.

Sources: 1. Ministry of Environment annual reports. 2. Lithuanian Environmental Financing Strategy, final report, 2001

- Environmental (abstraction) taxes/charges imposed on water intakes

B.9. Payments by municipal operators;

There is no official statistics on payments for the abstraction of groundwater/surface water resources by separate user groups.

In total, 8.4 million Litas were collected for the usage of water resources in 2000.
Source: Environmental Taxes in an Enlarged Europe, REC, 2001

B.10. Payments by industrial users (own intakes, only);

See answer for the B.9.

B.11. Payments by agriculture;

See answer for the question B.9.

B.12. Payments by others (specify);

See answer for the question B.9.

- Environmental taxes/charges imposed on wastewater discharges

B.13. Municipal operators;

There is no separation of pollution charges paid according to separate user groups. In total, 8.5 million Litas were paid for pollution of water bodies by all polluters. Fines for exceeding limits set are not included in this number.
Source: Environmental Taxes in an Enlarged Europe, REC, 2001

B.14. Industrial users (direct discharges, only);

See answer for the question B.13.

B.15. Agriculture;

See answer for the question B.13.

B.16. Payments by others (specify);

See answer for the question B.13.

Fines

B.17. Total fines (municipalities and industry alike);

In 2000, 1.65 million of Litas were paid as penalties for the discharges into water bodies exceeding the permitted limits (according to the Law on Pollution Charges) and as damage compensation in cases of accidents.
Source: Environmental Taxes in an Enlarged Europe, REC, 2001

- Other taxes imposed on water supply and wastewater treatment (VAT)

B.18. Amount of VAT imposed on water and wastewater services;

The VAT on water and wastewater services, as for other services and products, comprises 18%.

B.19. Amount of VAT transferred to state budget from water and wastewater operators;

Approximate estimate for municipal water companies – 50 million Litas in 2000.

B.20. Others (specify);

No others.

- Cross-subsidies between different groups of consumers/users

B.21. Does different prices applied for different user groups reflect different costs of the provided services?

Different prices applied for different user groups usually do not reflect different costs. The main reasons for the different prices – traditions coming from the past and social and political reasons.

B.22. If not, what is the amount of subsidies (total and per m^3);

Water supply: Out of 44 municipal water companies belonging to the Water Suppliers Association, 24 companies set bigger tariffs for industries than for households; 6 companies set higher tariffs for households than industries and 14 companies set the same tariff for all user groups.
The difference between tariffs differs up to 140%.

Wastewater discharge: Out of 44 municipal water companies belonging to the Water Suppliers Association, 16 set higher tariffs for industries than for households; 11 set higher tariffs for households than for industries and 17 companies set the same tariff for all user groups.
The difference between tariffs differs up to 150%.

Source: Water Suppliers Association, data of 2002 04 01

B.23. Necessary price increase aimed at removing cross-subsidies;

As seen from the above answer, different increases may be needed in different water companies.

Flows connected to investments, annual data for 1996-2000

B.24. Financial sources of municipal investments (split into loans and grants including subsidies; indicate trends - from the period of the previous 5 years; structure according to EU requirements[16]);

Financial sources of municipal investments in 2000:
Public: Central budget and Privatisation fund subsidies – 26.875 million Litas,
Foreign grants – 24.35 million Litas
IFIs: loans for 60.49 million Litas

So far almost no municipal own resources have been used for the wastewater infrastructure. Portion of state subsidies for wastewater treatment plants construction was increasing up to 1998 and since then is constantly diminishing.

B.25. Average prices for water provision and wastewater treatment, (local currency/m^3, 2000);

There is no separate statistics for average prices for households and other users.

	Water	Wastewater
Households	1.40 Lt/m^3	1.71 Lt/m^3
Other users		

Source: Biannual reports of indicators of water companies, Water Suppliers Association

B.26. Financial sources of industrial investments (as before);

Industrial companies usually finance water related investments from their own resources and bank loans. Recently soft loans are applied with the support provided for industrial companies by the Lithuanian Environmental Investment Fund.

According to the data from the Statistical department, approximately 10 million Litas were used by industrial enterprises for the end-of-pipe water related installations and approximately 0.4 million Litas for integrated technologies in 2000. More detailed distribution according to financing sources is not available.

B.27. Financial sources of agricultural (irrigation etc.) investments (as before);

During recent years no irrigation related investments have been made in Lithuania. For other investments in agricultural companies see answer B.26.

B.28. Financial sources of flood control investments (as before);

[16] The structure of investment capital according to EU requirements is as follows: Public/Private/International Financial Institutions (like EIB, EBRD, WB etc.). Furthermore "public" consists of: "EU" and "country". The "country" consists of: the budget (central and regional levels), local government entities (municipal and county) and others (including environmental and water funds);

According to the Programme for the preparation for floods in Klaipeda region, adopted by the Government of Lithuania, approximately 10 million Litas are devoted for the control of floods in Lithuania each year. The financing sources for this are only national. The approximate structure of financial sources and amounts for the previous and coming years is as follows:
State budget - 4 million Litas
Road Fund – 5.5 million Litas -
Municipal budgets – 0.05 million Litas
Ministry of Environment (Hydro-meteorological service) – 0.01 million Litas

B.29. Financial sources of other water management activities (e.g. river regulation) (as before);

River regulation (dikes maintenance and repairing) is financed by the State budget only and approximately 2 – 2.5 million Litas is devoted for this purpose each year.

B.30. Illustration of the above flows on a figure;

C. Targets[17]

- Legal base of the targets (please indicate which area of water management[18] is covered by specific regulation)

C.1. Binding laws and acts;

The majority of the fundamental requirements of water directives are at present recognised in the national laws. The general provisions laid down in the said directives have been transposed into the Law on Environmental Protection (1992, 1996, 2000), Law on Water (1997), Law on the Marine Environment (1997), Law on Environmental Monitoring (1997), Drinking Water law (2001), the Underground Law (1995) and other. The technical provisions of the directives have been transposed into subordinate legislation.

Water pollution resulting from individual types of human activity is regulated by the following main legal acts: Waste Water Pollution Standards (1997), Environmental Rules for the Design, Installation and Operation of Filtering Equipment for Domestic Waste Waters (1997); Procedure for Issuing Permits for the Use of Natural Resources and Determining the Limitations on the Use of Natural Resources and Standards for Permitted Levels of Environmental Pollution (1999), Environmental Requirements for the Handling of Manure and Effluents in Farms (1999), Code of Good Agricultural Practice (2000), Standards for the Use of Sewage Sludge (2001). The said legal acts transpose the requirements laid down in Directives 91/271/EEC and 91/676/EEC. Standards of Pollutants in Industrial Wastewater Drained into the Filter Fields were

[17] Here a set of targets will be presented in different ways: (a) legal documents; (b) goals related to quantity, quality, infrastructure etc. and the implementation of the EU WFD and EU directives;
[18] Areas are specified in Chapter 3 of the "concept" paper;

approved by an order of the Minister of the Environment in 2001 (directive 80/68/EEC).

The main legal act establishing the requirements for the quality of water intended for human consumption is the Lithuanian hygiene norm on the Quality of Drinking Water and on the Programmed Monitoring of the Quality of Drinking Water of 1998 (transposes the requirements of Directive 98/83/EC). The requirements of the Directive on bathing waters (76/160/EEC) were transposed into the Lithuanian hygiene norm on Beaches and Bathing Waters in 2000.

The practice of recording the use of water resources and monitoring the state of the environment is regulated by the State Monitoring Programme (1998), Regulations for the State Environmental Laboratory Control (1998), Procedure for Recording Pollutant Emissions into the Environment (1999), Procedure for Initial Recording and Monitoring of the Use of Water Resources and Pollutants Emitted with Effluents (2001).

C.2. Implementation programmes (e.g. government documents presented to the European Commission binding for investment programs);

Negotiation position of Lithuania reflects all main obligations Lithuania accepted for the implementation of water sector EU legislation. Directive-specific implementation plans are prepared for all main EU environmental directives. ISPA strategy presents main investment projects to be implemented before 2010, when all environmental *acquis* should be implemented in Lithuania.

The main obligations Lithuania adopted for the most "hot" directives are the following:
UWWTD:
All waters discharging into the catchment area of the Baltic Sea are treated as sensitive, i.e. the whole territory is identified as sensitive area. The EU accepted the requested transitional period with the following intermediate targets: Collecting systems in line with Article 3 of Directive 91/271/EEC will be provided as from 31 December 2009 in all 84 agglomerations of a population equivalent above 2,000. Treatment in line with Article 5 of Directive 91/271/EEC will be provided from 31 December 2007 in 38 agglomerations with a population equivalent of more than 10 000, representing currently a total biodegradable load of about 2 484 500 population equivalents. As from 31 December 2009 treatment will be provided in 46 agglomerations with a population equivalent between 2,000 and 10,000, representing currently a total biodegradable load of about 199 300 population equivalents.

Directive 91/676/EEC on nitrate pollution from agricultural sources:
Lithuania is ready to establish an action programme in 2003 and to begin its implementation by the date of accession. All new livestock units will comply upon accession and all measures not requiring large investments will be made mandatory upon accession. Lithuania will implement the second action programme by 2008 ensuring progressive compliance for smaller farms. Lithuania will apply Article 3(5) to its whole territory.

Directives80/778/EEC and 98/83/EC on the quality of water intended for human consumption:
Full implementation of Directive 98/83/EC will be ensured by the date of accession, taking into account the derogations possible under Article 9 of Directive 98/83/EC.

Directives on discharges of dangerous substances into surface water (Directive 76/464 and "daughter" Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC and 86/280, amended by 88/347/EEC and 90/415/EEC):
Lithuania will fully transpose the Directives in 2002, will review permits accordingly and will implement the Directives upon accession. Lithuania confirmed to the EU that it would regularly present results of the ongoing activities listed in Annex XXIII of CONF-LT 30/01 and that, with regard to List II substances, it will establish pollution reduction programmes upon accession for the entire territory.

C.3. Binding international agreements (in terms of investments);

International agreements like the Convention on the Protection of the Marine Environment of the Baltic Sea area (Helsinki Convention), Convention on the Protection and Use of the Transboundary Water Courses and International Lakes do not add a need to make additional investments than those foreseen according to the EU requirements.

C.4. Other programmes without binding character.

The new Lithuanian Water Management Strategy is under preparation right now. It will describe main general targets related to the achievement of good drinking and surface water quality.

Lithuania has decided to apply river basins as basis for grouping water infrastructure projects for ISPA and following financial programmes. Lithuania will be divided into 5 river basins of approximately the same number of inhabitants. The projects which are going on now prepare pre-feasibility studies for master plans for the 5 river basins.

- Targets for 2015 (please use the same units as in Section A)

There are no specific additional targets established for 2015 yet. The EU environmental *acquis* should be implemented by 2010. The technical assistance project, which will prepare more concrete targets for the WFD implementation is not yet finished in Lithuania.
Therefore, answers for the following questions are not available.

C.5. Public water supply (new connections, units as in Section A and also in m^3/year);
C.6. Sewerage (new connections units as in Section A and also in m^3/year);
C.7. Wastewater treatment (new connections units as in Section A and also in m^3/year);
C.8. Industrial wastewater treatment;
C.9. Provision of water for agriculture;
C.10. Reduction of C, N and P non-point source pollution from agriculture (% in comparison to the year 2000);

C.11. C, N and P emission reduction to surface waters (% in comparison to the year 2000);
C.12. Industrial emission reduction (% in comparison to the year 2000);
C.13. Toxic material emission reduction (% in comparison to the year 2000);
C.14. Targets of flood control (% reduction of the "safety gap");
C.15. Amount of wetland reconstruction (% of the present)
C.16. Targets of the EU WFD implementation (% of waters of "good status");
C.17. Targets of other sections of water management;
C.18. Ratio of solving shared river basin problems – Black and Baltic Sea, Danube, Danube Delta etc. (% of the level in 2000);

- Targets for 2025[19] (please use the same units as in section A)

The same reasons for not having answers for these questions as for year 2015 targets.

C.19. Public water supply (new connections, units as in Section A and also in m^3/year);
C.20. Sewerage (new connections, units as in Section A and also in m^3/year);
C.21. Wastewater treatment (new connections, units as in Section A and also in m^3/year);
C.22. Industrial wastewater treatment;
C.23. Provision of water for agriculture;
C.24. Reduction of C, N and P non-point source pollution from agriculture (% in comparison to the year 2000);
C.25. C, N and P emission reduction to surface waters (% in comparison to the year 2000);
C.26. Industrial emission reduction (% in comparison to the year 2000);
C.27. Toxic material emission reduction (% in comparison to the year 2000);
C.28. Targets of flood control (% reduction of the "safety gap");
C.29. Amount of wetland reconstruction (% of the present)
C.30. Targets of the EU WFD implementation (% of waters of "good status");
C.31. Targets of other sections of water management;
C.32. Ratio of solving shared river basin problems – Black and Baltic Sea, Danube, Danube Delta etc. (% of the level in 2000);

- EU Directives and their scheduling[20]

C.33. EU WFD

According to the dates set in the directive.

C.34. 91/271/EC - municipal wastewater directive

By 2010.

C.35. 75/440/EEC - drinking water directive

By 2004.

[19] CEE Water Vision related targets;
[20] Indicate the period of planned implementation;

C.36. 1996/61/EC – IPPC

By 2004.

C.37. 91/676/EC - nitrate directive

By 2004.

C.38. 76/464/EEC - discharge of dangerous pollutants;

By 2004.

C.39. Others (specify)
All others by 2004 or according to the dates set in directives.

D. Financial needs[21]

- Evaluation of total investment outlays to meet targets from:

D.1 91/271/EC - municipal wastewater directive, total and needs of sewerage;

According to the recent Environmental Financing Programme prepared by the Ministry of Environment for the adoption by the Government, water sector will need approximately 1220 million Litas. Approximately 70% of this sum will be needed for the extension or renovation of sewerage systems.

D.2 75/440/EEC - drinking water directive;

According to a recent study prepared for the European Committee of the Republic of Lithuania on the implementation of the Drinking water directive, for the removal of fluoride in the drinking water in Northern-Western part of Lithuania, 10.8 million of Litas is required.

D.3 1996/61/EC - IPPC;

Indicative number for the implementation of the IPPC directive is 700 million Litas. Water pollution control measures amount to approximately 30% of this sum (200 million Litas). However, it is recognised that the more reliable number could be received only by a case by case study of all industrial entities.

D.4 91/676/EC - nitrate directive;

According to different scenarios (different modernisation levels) the investment costs vary from 614 to 1100million Litas (in the table below average number of 800 million will be used). Note that though the Nitrates directive will be implemented by 2004,

[21] ***Whenever appropriate, indicate the currency and appropriate price level (e.g. million Euro'2000);***

private investments by farmers are allowed to be made until the end of the overall two-stages implementation programme, i.e. by 2008.

D.5. 76/464/EEC - discharge of dangerous pollutants;

Private costs for the implementation of this directive are not yet defined.

D.6. Other directives;

Other water sector directives will not impose considerable costs of the implementation.

D.7. EU WFD;

Costs for the implementation of the WFD are not yet assessed.

- Evaluation of total investment outlays to meet additional targets by 2015 (see above):

N.a.

D.8. Flood control;
D.9. Wetland reconstruction;
D.10. Targets of other sections of water management;
D.11. Handling shared river basin problems – Black and Baltic Sea, Danube, Danube Delta etc.;

- Evaluation of total investment outlays to meet other targets by 2025 (see above):

N.a.

D.12. Flood control;
D.13. Wetland reconstruction;
D.14. Targets of other sections of water management;
D.15 Handling shared river basin problems – Black and Baltic Sea, Danube, Danube Delta etc.;

- Derivation of annual outlays (2000-2025)

D.16 Annual investment outlay and their sum for the period of 2000-2025;

Financial needs		Total	2002	2003	2004	2005	2006	2007	2008	2009	2010
UWWTD – (plants)	M Lt	370	~50	~50	~50	~50	~50	~50	~50	~50	
UWWT(sewerage)	M Lt	850	~100	~100	~100	~100	~100	~100	~100	~100	
Drinking	M Lt	11	~5	~5							
IPPC-water	M Lt	~200	~30	~30	~30	~30	~30	~30			
Nitrates	M Lt	~800	~70	~70	~70	~70	~70	~70	~70		
Total	M Lt	~2230	~260	~260	~250	~250	~250	~250	~220	~150	

D.17. Evaluation of total OMR cost for existing facilities (water supply, sewerage, municipal wastewater treatment, industrial wastewater treatment, irrigation, flood control and others) in % of the investment cost;

As investment sums are constantly being updated, there are no latest estimates of the O&M costs. Lithuanian Environmental Financing Strategy (2001) used 7 % of the investment cost for water sector investments.

D.18 OMR cost for new investment - water supply;

O&M costs require approximately 7% for new wells needed in areas with the excess fluoride quantities. This amounts to approximately 0.35 million Litas in 2002 and reaches approximately 0.8 million Litas in 2003 and following years.

D.19 OMR cost for new investment – sewerage;

It is suggested to take 0.5% of investments for the O&M costs for sewerage systems. This would amount to approximately 0.5 million Litas for sewerage in 2002 and grow up to 4 million of Litas in 2009.

D.20. OMR cost for new investment – municipal wastewater treatment;

If the 7% rate is used, O&M costs would amount to approximately 3.5 million in 2002 and reach approximately 28 million in 2009.

D.21. OMR cost for new investment – industrial wastewater treatment;

n.a.

D.22. OMR cost for new investment – irrigation;

n.a.

D.23. OMR cost for new investment – flood control;

3 million Litas each year.

D.24. OMR cost for new investment – others;

No other. O&M costs for the implementation of the Nitrates directive are not considerable.

D.25. Graph of the outlay of annual investment cost;

E. Potential financial sources

- Expected grants from the EU (indicate ranges in absolute value)[22]

E.1. ISPA (annual, million Euro 2000);

It is possible to receive approximately 25 million euros for environmental sector from ISPA in Lithuania each year.
In 2000-2002 14 investment projects have been prepared for ISPA financing. Implementation of all those projects will require 195 million euros and ISPA part will amount to 100 million euros.

General rule applied by the Government of Lithuania is that ISPA part should amount to approximately 50% of all investment needs for a specific investment project. Only water and waste projects are presented for ISPA financing so far.

E.2. Cohesion fund 2004, 2005, 2006 (annual, million Euro 1999[23]);

According to preliminary estimations of the Ministry of Environment, Lithuania will receive approximately 80 – 100 million euros each year.

E.3. Structural fund 2004, 2005, 2006 (annual, million Euro 1999);

According to preliminary estimations of the Ministry of Environment, Lithuania will receive approximately 30 million euros each year from the Regional Development Fund.

E.4. Others;

Implementation of some investment projects, financed by SAPARD, will improve water quality. Overall amount of SAPARD money received for agricultural measures will be approximately 30 million Litas each year. It is not yet estimated what part of it will be directly related to the improvement of water resources.

- National sources (indicate range)

E.5. Budget (state and local levels);

State budget commitment for financing environmental projects each year amount to approximately 40 million Litas.

E.6. Environmental fund;

Contributions from environmental funds in Lithuania are minimal. They are not considerable in comparison to all other sources.

[22] Please distinguish between "assistance", "commitments" and real money transfers or "payments". Note that it is not possible to construct the infrastructure using declaration about a hypothetical support (such as "assistance"). For financial flow balancing we need the "payments". In the case of lack of reliable data concerning payments, please indicate (a) the likely ratio of your country's Cohesion Fund in EU budget prepared for the 10 CEE countries till 2006 (min-max, %), and (b) the likely Structural Fund (min-max %) and the anticipated share of "Environment" within this;
[23] The EU budget for 2000-2006 is in Euro 1999, therefore all EU documents operate in Euro 1999.

E.7. Self government entities (municipality, county etc.);

Not considerable at all.

E.8. Private (including commercial credit);

It is expected that private capital should invest approximately the same amount of funds into environment related issues as is needed into the municipal infrastructure.

E.9. Others;

- International sources (indicate ranges)

There are no specific numbers available for each IFI. According to the financing rules applied in Lithuania and co-operation agreements with IFIs, at least 50 million Litas should be provided by international banks each year.

E.11. World Bank;
E.12. EBRD;
E.13. EIB;
E.14. Others;

F. Closing the gap and affordability: scenario formulation

The analysis made in the Lithuanian Environmental Financing Strategy and updated estimates of the demand and supply of funds indicates that the supply each year is adequate to implement environmental (not only water sector related) EU requirements. The estimated tariff burdens do not approach the level of 4-5% of household income that is considered to be an acceptable upper bound.
The State co-financing share represents only a small percentage of GDP (for water projects less than 0.1%).
With at least moderate economic growth and expected financial schemes as well as favourable loan conditions, implementation of water sector projects should not be a significant burden for Lithuania.
However, the administrative absorption capacity for the management of all possible projects may cause problems.

Annex 2. General information

GDP per capita in Litas for the period of 1996-2000

	1996	1997	1998	1999	2000
Current prices	8510	10347	11611	11529	12157
Constant prices, 1995=100					
Litas	6804	7307	7687	7393	7645
Change in %	4.9	7.4	5.2	-3.8	3.4

Average disposable income per capita per month in Litas for the period of 1996-2000

	1996	1997	1998	1999	2000
Disposable income	326.7	368.9	422.5	428.0	415.4
Disposable income in cash	253.0	297.0	350.4	360.4	349.4
Disposable income in kind	73.7	71.9	72.1	67.6	66.0

Total and urban population (million inhabitants, 2000);

	1996	1997	1998	1999	2000
Total	3.712	3.707	3.704	3.700	3.698
Urban	2.518	2.534	2.525	2.523	2.522
Urban in % of total	67.8	68.4	68.2	68.2	68.2

Average number of person per household

	1996	1997	1998	1999	2000
Average size of a household	2.76	2.74	2.69	2.65	2.62
Urban	2.69	2.68	2.66	2.62	2.60
Rural	2.93	2.89	2.77	2.72	2.66

Long term forecast of the disposable (net) income changes of households

	2002	2003	2004	2005
In million Litas, per year for all households	32081	34385	36613	38692
Growth in %, 2002=100%	100	107.2	114.1	120.6

Changes of prices

Previous year = 100%	1995	1996	1997	1998	1999	2000
Changes of consumption prices (inflation)	100	24.6	8.9	5.1	0.8	1.0
Changes of investment outlay prices	100	9.8	31.7	11.8	-9.6	-9.7

Annex 3. Transposition of the main EU water directives into the national law

EU directive	Main national legal acts
Water Framework Directive (2000/60/EC)	Law on water (1997) Law on Environmental Monitoring (1997)
Urban Wastewater Treatment Directive (91/271/EEC)	Environmental Requirements for Wastewater Treatment (2001) Rules of Water Resources Use and of Primary Accounting and Control of Pollutants Emitted in Wastewater (2001) Procedure for Issuing Permits for the Use of Natural Resources and Determining the Limitations on the Use of Natural Resources and Standards for Permitted Levels of Environmental Pollution (1999)
Nitrates Directive (91/676/EEC)	Requirements of Water Protection from the Pollution by N compounds from agriculture (2001) Environmental Requirements for Handling of Manure and Effluents in Farms (1999). Code of Good Agricultural Practice (2000)
Drinking Water Directive (98/83/EC)	Law on Drinking Water (2001) Hygiene Norm of the Quality of Drinking Water and on the Programmed Monitoring of Drinking Water (1998)
Bathing Water Directive (76/160/EEC)	Hygiene Norm HN 92:1999 on Beaches and Bathing Water (1999) Monitoring Programme of the Quality of Bathing Water (2001)
Dangerous Substances Directive 76/464/EEC, and Daughter directives 83/513/EEC, 82/176/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC, 88/347/EEC, 90/415/EEC	Rules for Reduction of Water Pollution by Priority Dangerous Substances (2001) Rules of Water Pollution by Dangerous Substances (2001)