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**ESTONIAN MINISTRY OF THE ENVIRONMENT  
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**TECHNICAL ASSISTANCE IN THE  
FIELD OF ENVIRONMENTAL  
MONITORING AND MANAGEMENT**

**Contract CX 822165-01**

**FINAL REPORT**

**October 1, 1993 - September 30, 1996**

<b>SUMMARY</b>	<b>3</b>
<b>CHAPTER I</b>	
<b>1. FRAMEWORK OF PROGRAMME IMPLEMENTATION</b>	<b>4</b>
<b>1.1. COOPERATIVE AGREEMENT AND RESPONSIBLE OFFICIALS</b>	<b>4</b>
1.1.1. AMENDMENTS	4
1.1.2. RESPONSIBLE OFFICIALS	5
1.1.3. RECORDING SYSTEM	5
<b>1.2. PURPOSE AND TARGET GROUP OF THE PROGRAMME</b>	<b>6</b>
<b>1.3. COORDINATION AND COOPERATION WITH OTHER ACTIVITIES AND AUTHORITIES</b>	<b>6</b>
1.3.1. COORDINATION AND COOPERATION WITH ESTONIAN GOVERNMENTAL STRUCTURES AND INSTITUTIONS	6
1.3.2. COORDINATION AND COOPERATION WITH INTERNATIONAL INSTITUTIONS AND ORGANIZATIONS	7
1.3.4. ACKNOWLEDGEMENTS	7
<b>1.4. FINANCIAL FRAMEWORK</b>	<b>8</b>
1.4.1. REQUESTS FOR ADVANCE AND/OR REIMBURSEMENT	8
1.4.2. BANK REQUISITES	9
1.4.3. VALUE-ADDED TAX	9
1.4.4. RECORDING SYSTEM	10
1.4.5. FINAL BUDGET SUMMARY	11
<b>CHAPTER II</b>	
<b>2. TWINNING (PROJECT #J)</b>	<b>12</b>
<b>2.1. OVERVIEW OF THE PROJECT TWINNING</b>	<b>12</b>
2.1.1. BALTIC COORDINATOR'S MEETING IN JULY 1994	12
2.1.2. MR. NITZE VISIT IN SEPTEMBER 1995	12
2.1.3. CONFERENCE ON ASSISTANCE FOR ENVIRONMENTAL PROTECTION IN THE BALTIC REPUBLICS	13
2.1.4. CLOSE OUT OF U.S. AID ESTONIAN OFFICE IN SEPTEMBER 1996	13
<b>2.2. TRAINING ACTIVITIES</b>	<b>12</b>
<b>2.3. LITERATURE, HARDWARE AND SOFTWARE PURCHASED IN FRAMES OF THIS PROGRAMME</b>	<b>13</b>
<b>2.4. ENVIRONMENTAL ASSESSMENT IN SILMET</b>	<b>15</b>
<b>2.5. TECHNICAL ASSISTANCE TO PRINTER'S ASSOCIATION</b>	<b>16</b>
<b>CHAPTER III</b>	
<b>3. ENVIRONMENTAL MANAGEMENT TRAINING (PROJECT #JX)</b>	<b>16</b>
<b>3.1. THE PRINCIPLES OF ENVIRONMENTAL ASSESSMENT</b>	<b>16</b>
<b>3.2. THE RISK ASSESSMENT</b>	<b>17</b>
<b>3.3. FATE AND TRANSPORT OF CONTAMINANTS IN THE SUBSURFACE ENVIRONMENT</b>	<b>17</b>
<b>3.4. PUBLIC PARTICIPATION TRAINING COURSES</b>	<b>18</b>

3.5.	<b>HAZARDOUS MATERIAL MANAGEMENT</b>	18
3.5.1.	<b>TRAINING OF FACILITATORS IN RAMSTEIN</b>	18
3.5.2.	<b>TRAINING OF FACILITATORS IN ŠIAULIAI</b>	19
3.5.3.	<b>TRAINING COURSE IN ŠIAULIAI</b>	19
3.5.4.	<b>TRAINING EXERCISE BERE 96</b>	20
3.6.	<b>GROUNDWATER MODELLING WORKSHOP</b>	20
3.7.	<b>CISCO TRAINING</b>	21
3.8.	<b>WEC TRAINING</b>	21
3.9.	<b>SALZBURG SEMINAR SESSION 319</b>	22
3.10.	<b>MEDIATION TRAINING</b>	22
3.11.	<b>EU LIFE-ESTONIA PROGRAMME OFFICE TRAINING COURSES</b>	22
<b>CHAPTER IV</b>		
4.	<b>ENVIRONMENTAL ASSESSMENT DEMONSTRATION PROJECT (#J1)</b>	23
4.1.	<b>RESPONSIBLE AUTHORITIES AND CONTRACTS</b>	23
4.1.1.	<b>RESPONSIBLE AUTHORITIES</b>	23
4.1.2.	<b>CONTRACTS</b>	23
4.2.	<b>INSTITUTIONS INVOLVED AND COOPERATIVE WORK</b>	24
4.3.	<b>SCOPE OF THE EIA</b>	25
4.4.	<b>EXPERT CONCLUSION</b>	26
4.5.	<b>PUBLIC PARTICIPATION</b>	26
4.6.	<b>IMPLEMENTATION OF THE RESULTS OF THE EIA</b>	27
<b>CHAPTER V</b>		
5.	<b>ASSESSMENT OF ENVIRONMENTAL MONITORING CAPABILITIES (J#2)</b>	28
5.1.	<b>BALTIC ENVIRONMENTAL MONITORING REVIEW PROJECT. ESTONIA</b>	28
5.2.	<b>DEMONSTRATION OF COMPUTERIZED POSSIBILITIES OF ENVIRONMENTAL MONITORING</b>	28
5.3.	<b>BALTIC ENVIRONMENTAL DATA AND INFORMATION MANAGEMENT CONFERENCE</b>	29
5.4.	<b>IMPROVEMENT OF ENVIRONMENTAL INFORMATION SYSTEMS IN ESTONIA</b>	29
5.4.1.	<b>OVERALL OBJECTIVE OF THE PROJECT</b>	29
5.4.2.	<b>IMPLEMENTATION AND IMPACTS OF THE PROJECT</b>	30
5.5.	<b>FUTURE COOPERATIVE ACTIVITIES IN THE FIELD OF ENVIRONMENTAL MONITORING</b>	31

## SUMMARY

Cooperative Agreement CX 822165-01 Technical Assistance in the Field of Environmental Monitoring and Management was signed in September 1993 between Estonian Ministry of the Environment and U.S. Environmental Protection Agency in order to build capacity in the Republic of Estonia to collect, analyse and disseminate environmental information for effectively decision-making and to support economic restructuring, democratic pluralism, and an improved quality of life.

The implementation period of the Cooperative Agreement CX 822165-01 was October 1, 1993 - September 30, 1996.

The Cooperative Agreement was funded by U.S. Agency of International Development *via* U.S. EPA and coordinated by U.S. EPA

Institutions and authorities both at the National, regional and local level were involved in Estonia in implementation the different subprojects. Among other aspects, high interest and very active public participation should be emphasised.

The results of high value for the development of environmental protection and safeguarding sound development in Estonia and neighbouring areas and contribute to enhancing cooperation with counterpart authorities and institutions outside Estonia, both in United States and elsewhere can be mentioned.

A lot of joint activities in the field of environmental monitoring in the Region was planned to carry out in future as follow up to this Cooperative Agreement.

There were carried out four environmental assistance projects with a lot of subprojects. The assistance in four main projects was as follows:

**Twinning J<sub>3</sub>** - The objective of this project was to strengthen the capacity of the environmental authorities at the national and local level by providing expert advisors from U.S. EPA, and from U.S. state and local environmental officials to assist on environmental management issues.

**Environmental Management Training J<sub>1</sub>** - The objective of this project was to strengthen the capacity of the environmental authorities at the national and local level by providing management training in the principles of environmental impact assessment (EIA) and comparative risk assessment, and in other areas.

**Environmental Assessment Demonstration J<sub>1</sub>** - This project provided technical assistance and training to help Estonian environmental authorities implement an EIA process and provided guidance to reduce the environmental risks to the Kurtna Lakes.

**Assessment of Environmental Monitoring Capabilities J<sub>2</sub>** - This project had three primary objectives -

1. To assist in the design of Estonia's monitoring system to ensure data is collected, analysed and disseminated to meet the needs of the Ministry of the Environment and other environmental authorities for developing sound environmental policies.

2. To assist the Estonian Government in strengthen institutional capacity to manage environmental monitoring.

3. To encourage compatibility of environmental data management among the Baltic nations.

## **CHAPTER I**

### **FRAMEWORK OF PROGRAMME IMPLEMENTATION**

#### **1.1. COOPERATIVE AGREEMENT AND RESPONSIBLE OFFICIALS**

The Cooperative Agreement CX 822165-01-0 Technical Assistance in the Field of Environmental Monitoring and Management (hereinafter: Agreement) was signed on June 26, 1993 by Minister of the Environment Mr. Andres Tarand on the behalf of the Ministry of the Environment of the Republic of Estonia (hereinafter: Ministry) and by Chief, Grants Operation Branch (3903F) Mr. Mildred Lee on the behalf of the Grants Administration Division U.S. Environmental Protection Agency (hereinafter: U.S. EPA). According to the Agreement U.S. EPA contributed originally USD 250,000 for the implementation of the Programme and by the final Cooperative Agreement CX 822165-01-2 the total contribution was USD 273,732.00 (with in-kind support USD 303,000). In accordance with the Agreement, the Programme was scheduled originally to be completed by July, 31, 1996. Within the close out of the U.S. AID Office in Estonia it was agreed that this Programme will be completed by the same date - September 30, 1996.

##### **1.1.1. AMENDMENTS**

The first Assistance Amendment CX 822165-01-0 on USD 35,000 was signed in September, 1993 by Mr. Mildred Lee, Chief, Grants Operation Branch, U.S. EPA and by Mr. Andres Tarand, Estonian Minister of the Environment.

The second Assistance Amendment CX 822165-01-1 on USD 40,000 was signed in July, 1994 by Mr. Mildred Lee, Chief, Grants Operation Branch, U.S. EPA and Mr. Andres Tarand, Estonian Minister of the Environment.

The third and final Assistance Amendment CX 822165-01-2 on USD 228,000 was signed in July, 1995 by Mr. Mildred Lee, Chief, Grants Operation Branch, U.S. EPA and Mr. Villu Reiljan, Estonian Minister of the Environment.

In total with three grants the contribution was USD 274,742.00 and including in-kind contribution as for equipment it formed USD 303,000.

On June 19, 1996, Mr. Allan Gromov, Head of the Department of International Relations at the Ministry in his letter to Mr. Jon Grand made a proposal concerning possible changes in the Assistance Amendment CX822165-01-2 in order to redistribute funds between the breakdown by object classes - a result of preceding negotiation between Ministry and U.S. EPA in starting of new subprojects in the implementation process of the Programme as the original agreement stated that the scope of work would be "renegotiated to reflect the amount awarded if additional funds are available" and that "further incremental awards...will be made in response to budget proposals for specific needs". As Estonian side have not received a confirmation for this joint proposal from U.S. EPA side by the close-up time of this project, total expenditures given here reflect the breakdown by objects according to Assistance Amendment CX822165-01-2 signed on July 30, 1995.

In his letter from August 30, 1996 Mr. Gromov made a proposal to use the remaining funds of this Cooperative Agreement in future for supporting Estonian participation in the regional environmental monitoring activities initiated by U.S. EPA and other international institutions (see also p.5.5 here).

### 1.1.2. RESPONSIBLE OFFICIALS

The responsible official for the Agreement in the U.S. EPA was Mr. Daniel Thompson from U.S. EPA Office of International Activities since January 29, 1996 and since September 30, 1996, Mr. Jon Grand, from U.S. EPA Region 5.

The responsible official for the Agreement in the Estonian Ministry of the Environment was Mr. Allan Gromov, Head of International Relations Department.

The implementation of the Agreement started in October 1, 1993, by Ministerial officials and on February 1, 1994, Mrs. Kai Helm was appointed as a Programme Coordinator for implementation of this Programme by Mr. Andres Tarand, Minister of the Environment of Estonia.

The Programme Coordinator has been provided office space in the buildings of the Ministry of the Environment: between February 1994 and May 1995 at the address Toompuiestee 26 (room 4), Tallinn and from June 1995 on at the address Rävala blvd. 8 (room B411b), Tallinn. The expenses related to the office and communication has been covered from the Ministry's budget.

### 1.1.3. RECORDING SYSTEM

According to the conditions in Agreement, quarter progress reports with description of recent activities, evaluation of project successes and impacts, and inventories of purchased equipment, compiled by the Programme Coordinator has been submitted to U.S. AID, to U.S. EPA and to the Ministry and semiannual financial reports has been submitted to U.S. EPA Financial Management Unit FMU.

In June 1996, it was agreed that all files (total 9 volumes and computerized information on diskettes) concerning the implementation of the Programme will be preserved at the Ministry's archive. All financial documents (total 3 volumes and computerized information on diskettes) will be duplicated and one set of these (originals) will be preserved at the Ministry and another set (copies) will be sent to U.S. EPA Region 5 (see also p.1.4.4. here) by October 1996.

In addition to those reports mentioned above, Programme Coordinator compiled progress reports in Estonian and in English, which had been submitted to Ministry for Ministerial annual reports for the Estonian Government, and several progress reports of the Programme and of different projects for several authorities in Estonia and international institutions.

This Cooperative Agreement and activities concerning relevant project implementation have been introduced by Programme Coordinator to wide circle of interested people *via* Estonian State Television, State Radio, daily and weekly newspapers and fact sheets.

## **1.2. PURPOSE AND TARGET GROUP OF THE PROGRAMME**

The purpose of this Agreement was technical assistance and training to upgrade inadequate legal and administrative infrastructures, to strengthen public participation in environmental policy making, to improve environmental and economic policies, to encourage privatization and investment, and to assist industry managers in implementing waste minimization programmes to redress the waste and pollution. A significant part of this Agreement was allocated to a demonstration project that address high priority environmental problems in key geographic hot spot where large populations are at risk from exposure to numerous pollutants and where unique natural resources are threatened. This project demonstrated innovative, cost effective, and appropriate technologies.

The main target group of this Agreement included Estonian officials working within the sphere of authority of the Minister of the Environment: in the core Ministry, district environmental departments, environmental laboratories, etc. Please find Attachment No.1.here.

The other target groups included officials of the other environmental institutions in Estonia, representatives of scientific institutions, universities, non-governmental organizations (NGOs), business, and small companies dealing with environmental problems.

## **1.3. COORDINATION AND COOPERATION WITH OTHER ACTIVITIES AND AUTHORITIES**

### **1.3.1. COORDINATION AND COOPERATION WITH ESTONIAN GOVERNMENTAL STRUCTURES AND INSTITUTIONS**

All activities concerning implementation of the Programme have continuously coordinated with the Ministry of the Environment. Comments and suggestions concerning the proposals of various projects have before finalization been asked from officials of the Ministry, as well as from other experts in the relevant area.

At the preparation of different projects in frames of the Agreement, officials of the Ministry of Economy, Ministry of Foreign Affairs, Agency of Foreign Investments, Privatization Agency has been very helpful. Implementation and the next steps to be taken by Estonian Government concerning the project J<sub>1</sub> (see here p.4.6) were discussed with Mr. Rein Järlik, member of the Parliament, Head of the Environmental Commission in March 1996 and September 1996.

At the issues related to financial part of the Agreement, officials of the Ministry of Justice, Ministry of Economy, Ministry of Finance, Estonian Taxation Board, and of the Bank of Estonia have been also very helpful.

On the other hand, Programme Coordinator has been consulted concerning matters related to environmental issues within the sphere of authority of the Ministry of the Environment and foreign cooperation projects in this area.

More detailed descriptions of cooperative activities please find here under project descriptions in chapters II, III, IV and V.

### **1.3.2. COORDINATION AND COOPERATION WITH INTERNATIONAL INSTITUTIONS AND ORGANIZATIONS**

The fruitful cooperation in frames of this project was with relevant U.S. EPA supported programmes in Latvia and Lithuania. Information between three Programme Coordinators was exchanged currently and a lot of joint activities were carried out e.g. see here p. 2.1.1., 3.3. , 3.5., 3.6.

Several activities concerning the environmental monitoring has been cooperatively carried out with the Baltic Environmental Forum (BEF), see here p.2.1.3. and 5.3.

Cooperation has been with experts working with the Estonian Ministry of the Environment under the PHARE programme since 1994. Meetings have been held and materials exchanged with representatives of the LIFE-Estonia Programme Office who organized training courses in Estonia. Programme Coordinator also assisted in preparations of training courses to the Estonian officials in frames of the LIFE-Estonia Programme Office see here also p.3.11. While preparing activities related to projects J<sub>1</sub> and J<sub>x</sub>, an excellent coordination was with WEC (World Environmental Centre) Office in Estonia.

Project Coordinators of all U.S. AID supported programmes in Estonia gathered on regular basis for monthly meetings at U.S. AID Office in Estonia. At round table meetings overviews of project implementation were given and these meetings gave an excellent possibility for better information exchange between ongoing projects. Programme Coordinator submitted the Progress Reports to U.S. AID Office in Estonia (see p.1.1.3. here).

Here I would like to express my sincerest gratitude to Mr. Robert Maushammer, Director of the U.S. AID Office in Estonia. Under his leadership all U.S. AID projects in Estonia were currently supported with sincerest interest and help and he also gave a friendly atmosphere to monthly meetings.

A lot of organizations and private companies from U.S. were involved in the implementation of this Agreement. See here p.1.3.4.

### **1.3.4. ACKNOWLEDGEMENTS**

I am very grateful to all persons who have been kind and have provided advice, assistance, and all possible other help to the Agreement and me during projects implementation.

I would especially like to thank the following authorities:

The Ministry of Economy; the Ministry of Foreign Affairs, the Ministry of Finance, the Bank of Estonia, the Embassy of USA in Tallinn, the U.S. AID Office in Tallinn, the Estonian Taxation Department, the Estonian Land Board, the Central Laboratory of Environmental Research, the Estonian Management Institute, the Estonian Environmental Fund, the Stockholm Environment Institute branch in Tallinn.

In the Estonian Ministry of the Environment, I would like to thank:

Mr. Andres Tarand, Mr. Vootele Hansen, Mr. Villu Reiljan, Mr. Allan Gromov, Mr. Kalju Kukk, Ms. Helgi Kook, Ms. Eva Kraav, Mr. Einar Kivimäe, Mr. Lembit Liivak, Mr. Harry Liiv,



Mr. Voldemar Tassa, Ms. Mari Lahtmets, Ms. Gaida Rattus, and very helpful colleagues of the following departments: the Environmental Impact Assessment and Normative Department, the International Relations Department, the Water Department, the General Department, the Project Management Unit (PHARE).

I would especially like to express my sincerest gratitude to all helpful partners from U.S. EPA OIA, U.S. EPA FMU, U.S. EPA Region 5, U.S. EPA Region 8 during this Programme implementation, and also to other institutions in U.S.: Robert S. Kerr Environmental Research Laboratory at Ada, Oklahoma, U.S. Environmental Training Institute, Environmental and Safety Designs (EnSafe), EET, the U.S. Air Force and Fire Academy in Ramstein, Wisconsin University, Bowling Green State University, Purdue University, CDR Associate Centre in Boulder

In addition to persons and authorities mentioned above, and in Chapters II, III, IV and V; I would like to thank everybody and everyone, with whose assistance this Programme has been implemented.

#### **1.4. FINANCIAL FRAMEWORK**

##### **1.4.1. REQUESTS FOR ADVANCE AND/OR REIMBURSEMENT**

According to the conditions in Assistance Amendment CX 822165-01 for implementation of the Programme, 19 requests for Advance and/or Reimbursement (SF 270) were submitted to U.S. EPA Financial Management Unit (FMU). The SF270 was always supported by an explanation letter with description of the activities and relevant expenditures for previous period and for requested period, draft of which was at first submitted to U.S. EPA Region 5 for approval and confirmation, and after its approval, SF 270 was submitted to U.S. EPA FMU. The semiannual financial reports with an explanation letter were submitted to U.S. EPA FMU separately.

In addition to funding (incl. in-kind part) provided for project implementation from U.S. EPA, a part of in-kind support was provided by Ministry of the Environment of Estonia: office to the Programme Coordinator and covered costs related to the office, e.g. communication costs. LIFE-Estonia Programme Office provided a possibility to use a personal computer during the first year of Programme implementation and also supported with other office equipment and office stationary. Ida-Viru County and Environmental Department provided with rooms and transport for arranging Public Meetings in the frames of project J<sub>1</sub>.

As the final Assistance Amendment CX 822165-01-2 was confirmed later than it was expected originally, implementation of ongoing projects was entangled by financing beginning from March 1995. The confirmation letter from March 21, 1995 concerning processing delay of the Amendment from U.S. EPA and detailed description of ongoing projects gave the basis for applying a loan from the Estonian Environmental Fund in April 1995. The decision by the Board of the Estonian Environmental Fund was to obtain a loan of EEK 229,640.00 (corresponding to USD 20,000USD) in May, 1995. The loan was reimbursed in September 1995. As there were significant differences in the currency rates during this period, after reimbursement of the loan (in EEK), in the balance corresponding amounts in USD was 1113.39 in positive. Together with this amount of funds (USD 1113.39), additionally accumulated interest through the use of the bank account (USD 437.19), and returned VAT (USD 1757.87) (see here p. 1.4.3.), total USD 3,308.45

was in addition to the funds (USD303,000) contributed by U.S. EPA. Programme implementation and its relevant financial issue has been considerably influenced also by frequent changes in the working schedule of U.S. Governmental authorities related to the beginning of a new fiscal year on November 1, 1995 since March 1996.

#### **1.4.2. BANK REQUISITES**

For managing the project budget, a special bank account 22-116474 was opened on December 2, 1993 on the name of the Ministry of the Environment of Estonia at Hansapank (Tallinn) and consequently closed on September 24, 1996 with the closing of this Programme.

Problems concerning managing an USD-account during the implementation period of the Programme have been numerous. They have arisen from the legal acts currently in force in Estonia, and the bank procedures established by the Bank of Estonia. The exchange rate between USD and EEK changes daily. While planning projects and long-term activities, the differences between proposed and actual expenses, due to the differences between exchange rates, were considerable.

Besides, the bank procedures have been changed a number of times during Programme implementation, due to which for example the bank fees for different services have changed. It is therefore difficult to prognosticate the exact expenditures related to bank account management of future projects (co)financed by foreign partners.

#### **1.4.3. VALUE-ADDED TAX**

The question of VAT has been consequently under the discussion between U.S. EPA and Ministry. Due to the changes in the Estonian VAT legislation, especially at the beginning of the programme implementation, it was impossible to purchase the equipment without VAT using the zero rate. According to Estonian legislation VAT forms 18%.

As concerns the terms and conditions by the U.S. EPA within the final Assistance Amendment No. CX822165-01-2 p.3. that VAT refunds must be returned to U.S. EPA FMU, there have been some problems with actually following this rule through the whole implementation period of the Programme. Although it is stated in the legislative acts of Estonia that certain contracts with foreign partners are not subject to VAT, the procedure for tax exemption was only legally established during Programme implementation, and has been changed since then. As a result of correspondence with the Ministry of Finance, the Taxation Department, and the Ministry of Foreign Affairs, the Programme Coordinator has managed to reimburse VAT (in EEK, afterwards transferred to USD) for purchased equipment in the frames of the Programme.

The other contracts of international programmes are likely to encounter similar problems concerning the VAT in the future until the procedures for tax exemption will remain stable and be clear.

Returned VAT (to the equipment purchased in the frames of this Agreement between period December 1994-November 1995) from the Estonian Taxation Board formed significant part

(USD 11,544.75). After negotiations between U.S.EPA and Ministry in June 1996 it was reached to an agreement that this amount of the funds, originally allocated for purchasing equipment within the projects J<sub>3</sub> and J<sub>2</sub>, will be used for same purposes and on same conditions - purveyance of equipment was done in June 1996. It was decided that the reimbursed VAT (corresponding to USD 1757.87) from the Estonian Taxation Board for the equipment purchased in June 1996 is a subject to be returned to U.S. EPA FMU together with other interests (see here p.1.4.1). After negotiations with U.S. EPA Region 5 in July 1996 it was decided: while submitting the last Request to U.S. EPA FMU for covering the final expenditures the consequent amount will be less, corresponding to amounts accumulated at the bank account in Estonia.

#### 1.4.4. RECORDING SYSTEM

All financial documents were submitted to U.S. EPA side according to the terms and conditions of the Agreement (see also p.1.1.3. here). According to the Estonian legislation Programme Coordinator submitted monthly special reports concerning social, health insurance and income taxation (as a part of contracts made in frames of this Agreement) to the Financial Department of Ministry.

During the period of October 1994 - June 1995 all recording system of the Programme implementation was filled in written form according to the terms and conditions of the Agreement and by computerized tracking system worked out by Programme Coordinator. Invoices, relevant payment orders and other financial documents were duplicated by copying at once and were kept separately.

On July 28, 1995, there was a serious fire accident in the main building of the Ministry of the Environment (Toompuiestee 24, Tallinn EE0100) consequently of which a high number of files and documents got damaged or destroyed. Among those were the originals of the financial documents concerning the Agreement from the period December 2, 1993 up to March 31, 1995, which were destroyed. Therefore, in the files to the archive of the Ministry (see p. 1.1.3. here) of this Agreement, instead of those originals, are submitted copies which were kept in the neighbouring building.

In March 1995, financial specialists from Office of the Inspector General Agency for International Development (U.S. AID) at Bonn provided the financial auditing of this Programme.

In June 1995, Programme coordinator was trained on computerized project management tracking system which tracks the cooperative agreement expenditures by project, and is broken down by object class (contract, travel, equipment, and supplies) worked out by U.S. EPA Region 5. This system enabled to simplify the financial accounting of the programme and made it more understandable for both of the sides. Final Project Summary of the Programme is given in the Table 1 here.

The computerized tracking system (on diskettes and the printed version) is a part of the financial documentation and is separate to this Final Report submitted to Ministry and U.S. EPA Region 5. According to the conditions of the Agreement, all financial documents and documents concerning the implementation of the Programme will be kept in the archive of the Ministry at least within three years after September 1996. The duplicated version of all financial documents

will be sent to U.S. EPA Region 5 by October 1996.

### 1.4.5. FINAL BUDGET SUMMARY

For giving overview of the financial part of the Programme, please find attached Table 1, which is an abstract from computerized tracking system worked out by U.S. EPA Region 5. The whole system is a part of the financial documentation submitted to U.S. EPA and Ministry. The changes in the break down by objects proposed by Ministry in June 1996 (see here p.1.1.1) are not shown here and therefore the project summary is corresponding to Assistance Amendment CX822165-01-2 signed in July 1995.

TABLE 1

OFFICE OF INTERNATIONAL ACTIVITIES  
EESUTA

#### PROJECT SUMMARY

COUNTRY: ESTONIA [J]  
TOTAL PROGRAM FUNDING: 274742.00  
EXPENSES: 248068.92  
FUNDING AVAILABLE: 26673.08

PROGRAM FUNDING						
PROJECT TITLE AND CODE	TRAVEL	EQUIPMENT	SUPPLIES	CONTRACTS	OTHER	TOTAL
Environmental Assess. Demo/J1	9500.00	3406.00	3892.00	78500.00	0.00	95298.00
Assess. of Environ. Monitor./J2	11922.00	48681.00	2891.00	35500.00	0.00	98994.00
Twining/J3	13998.00	26547.00	1500.00	10000.00	0.00	52045.00
Environmental Mgmt. Training/JX	2000.00	1405.00	1500.00	23500.00	0.00	28405.00
						0.00
						0.00
<b>TOTAL PROGRAM FUNDING</b>	<b>37420.00</b>	<b>80039.00</b>	<b>9783.00</b>	<b>147500.00</b>	<b>0.00</b>	<b>274742.00</b>

PROGRAM EXPENSES						
PROJECT TITLE AND CODE	TRAVEL	EQUIPMENT	SUPPLIES	CONTRACTS	OTHER	TOTAL
Environmental Assess. Demo/J1 [M]	5900.57	0.00	9343.81	78501.24	0.00	93745.62
Assess. of Environ. Monitor./J2 [N]	171.57	45975.83	1057.78	10267.64	0.00	57472.82
Twining/J3 [O]	4741.45	39313.09	2446.44	10813.37	0.00	57314.35
Environmental Mgmt. Training/JX [P]	14383.17	0.00	1716.60	23436.36	0.00	39536.13
						0.00
						0.00
<b>TOTAL EXPENSES</b>	<b>25196.76</b>	<b>65288.92</b>	<b>14564.63</b>	<b>123018.61</b>	<b>0.00</b>	<b>248068.92</b>

TOTAL FUNDS AVAILABLE						
PROJECT TITLE AND CODE	TRAVEL	EQUIPMENT	SUPPLIES	CONTRACTS	OTHER	TOTAL
Environmental Assess. Demo/J1 [M]	3599.43	3406.00	-5451.81	-1.24	0.00	1552.38
Assess. of Environ. Monitor./J2 [N]	11750.43	2705.17	1833.22	25232.36	0.00	41521.18
Twining/J3 [O]	9256.55	-12766.09	-946.44	-813.37	0.00	-5269.35
Environmental Mgmt. Training/JX [P]	-12383.17	1405.00	-216.60	63.64	0.00	-11131.13
						0.00
	12223.24	-5249.92	-4781.63	24481.39	0.00	26673.08

**CHAPTER II**  
**OVERVIEW OF PROJECTS AND SUB-PROJECTS**  
**2.TWINNING (PROJECT #J<sub>3</sub>)**

**2.1. OVERVIEW OF THE PROJECT TWINNING**

This project is consistent with the overall country strategy of promoting policy, economic, and legal reform through activities that strengthen the environmental governmental institutions in Estonia, particularly the Ministry of Environment by providing expert advisors from U.S. EPA Region 5, and from U.S. state and local environmental officials to assist on environmental management issues. This project included activities concerning completion and installing of the Ministry and its institutions technological infrastructure (see here p. 5.4) by improving local area networks.

One of the aims of this project was to link activities between the rest of other projects in frames of this Agreement, including information management, administrative tracking, arranging meetings between officials from the Ministry and U.S. EPA, etc. Some of the main activities are described in more detail in this chapter.

**2.1.1. BALTIC COORDINATOR'S MEETING IN JULY 1994**

Three programme Coordinators of U.S. EPA projects from Estonia, Latvia and Lithuania-Ms. Kai Helm, Ms. Inguna Grinsteine and Ms. Victoria Maceikaite had a fruitful discussion in July 1994. Many problems, similar to all three countries, were discussed and each of the managing coordinator gave an overview of the projects specific to country. This joint meeting of Programme Coordinators gave a good start for futher excellent cooperative work among the three Baltic Countries and probably simplified U.S. EPA Project Officers in coordination of activities between three countries.

At the same meeting Mr. Daniel Thompson from U.S. EPA OIA and Mr. Jon Grand, U.S. EPA Region 5 introduced the environmental monitoring projects for the Baltic Countries and next steps to be taken in order to coordinate monitoring activities between donor countries. It was agreed to held a meeting concerning this issue (see here p.5.2.)

**2.1.2. MR. NITZE VISIT IN SEPTEMBER 1995**

In September 1995, Mr. William Nitze, U.S. EPA Assistance Administrator visited Estonia and other Baltic Countries in order to review current U.S. EPA and other U.S. environmental assistance programmes and to begin discussions on U.S. EPA involvement after the end of U.S. AID funded projects. In Estonia Mr. Nitze had fruitful meetings with H.E. Lawrence Taylor, Ambassador of U.S. in Estonia, with Mr. Villu Reiljan, Minister of the Environment and with other high level Governmental officials. At the Ministry of the Environment was given a press conference where the wide audience of interested in persons were introduced the implementation of the U.S. EPA supported Projects in Estonia with special accent to the implementation of computerized information exchange between environmental authorities *via* Internet and Local Area Network as in frames of this Agreement Estonian Ministry of the Environment received a significant support from U.S. EPA as well as by technical assistance and by purchased equipment (see here also p.5.4.)

### **2.1.3. CONFERENCE ON ASSISTANCE FOR ENVIRONMENTAL PROTECTION IN THE BALTIC REPUBLICS**

On February 7-9, 1996 the Estonian delegation participated on the Conference on Assistance for Environmental Protection in the Baltic Republics in Vilnius, which goal was to discuss policy issues of regional importance and to hold project-level meetings between individual Baltic country officials and donor representatives. The Conference was organized cooperatively with the Baltic Environmental Forum (BEF) and it was very successful. Plenary sessions were focused on the donor countries activities in the region and on activities carried out in different countries. Special sessions were held for each of the country for introducing the ongoing and planned activities in order to meet the goals of recently established environmental strategy.

### **2.1.4. CLOSE OUT OF U.S.AID ESTONIAN OFFICE IN SEPTEMBER 1996**

In September 1996 close out ceremony of U.S. AID supported projects in Estonia took place. In frames of these activities Mr. Valdas Adamkus, Administrator of U.S. EPA Region 5 participated on meetings with Mr. Lennart Meri, President of Estonia, and with other high level Estonian and USA Governmental Officials. Mr. Adamkus had a fruitful meetings with the member of Estonian Parliament (Riigikogu) Mr. Rein Järlik, Head of the Environmental Committee and with Mr. Rein Aidma, Governor of Ida-Viru County concerning the implementation of the project J<sub>1</sub> (see p. 4.6 here).

## **2.2. TRAINING ACTIVITIES**

A significant part of this Agreement was allocated to training activities as the objective of this Programme was to strengthen the capacity of the environmental authorities at the national and local level by providing management training in the environmental issues. A lot of training was provided by U.S. EPA in order to strengthen public participation in environmental policy making, to improve environmental and economic policies, to encourage privatization and investment, and to assist industry managers in implementing waste minimization programmes to redress the waste and pollution.

For giving a better overview of the training activities carried out in the frames of this Programme, more detailed descriptions of those training activities carried out in frames under the project twinning are jointly described in Chapter III here.

## **2.3. LITERATURE, HARDWARE AND SOFTWARE PURCHASED IN FRAMES OF THIS PROGRAMME**

In frames of this Programme in order to meet the goals of the Agreement an essential part of literature and software was donated to Estonia. As one of the primary objectives both of the projects, twinning J<sub>3</sub> and project on assessment of environmental monitoring capabilities J<sub>2</sub>, was to assist in the design of Estonian monitoring system to ensure data is collected, analysed and disseminated to meet the needs of the Ministry of the Environment and other environmental authorities for developing sound environmental policies. More detailed information of

implementation and impacts of the project please find in p.5.4.2. here, and list of purchased equipment in frames of this Programme please find in Attachment 3.

In 1994 U.S. EPA Region 5 proposed a possibility to Ministry of the Environment and for other environmental institutions in Estonia to purchase environmental publications (Technical Information Packages) and computer software programmes worked out by U.S. EPA. After consulting with Estonian authorities it was decided that the most beneficial way to make the publications available for more a wide audience of environmental specialists in all over Estonia is by duplicating the publications in three main libraries of Estonia - the Library at the Ministry of the Environment, the Library at Tallinn Technical University and the Library at Tartu University. In October 1995 for each of these libraries were shipped more than 200 units of publications worked out by U.S. EPA. Upon the request of the Sillamäe Environmental College (see here p.2.4.), Technical Information Package was also sent to this institution in June 1996 in order to improve the educational level of students and environmental specialists at Ida-Viru County.

In frames of the training programme Fate and Transport of Contaminants in the Subsurface Environment (here p.3.3). in addition to the training course material given to each of the participant and in addition to more than 60 publications and a lot of relevant software donated after the training course to the Ministry's Library, there was also a possibility to order the EPA Robert S. Kerr Environmental Research Laboratory publications and software. Participants made request on 188 publications and manuals of software and these were mailed after the training course from Laboratory directly to participants from Estonia, Latvia and Lithuania.

On August 29, 1995, 42 interactive environmental, agricultural and developmental computer programmes developed by U.S. EPA Region 5 and Purdue University on a complimentary CD-ROM disk were sent to Ministry. These programmes were installed into the Ministry's local network for a wide circle of users and officials were informed about it.

In February 1996 Programme Coordinator compiled a list of all literature and software donated by U.S. EPA in frames of this Agreement available at Ministry and at libraries and mailed it to more than 50 environmental institutions all over Estonia. Programme Coordinator informed also a wide audience of possible users of U.S. EPA publications *via* State Radio in March 1996.

In addition to the literature and software donated directly to the Ministry and to libraries in Estonia, a lot of training course material and relevant literature and software was provided directly to participants of the training courses. By opinion of participants, these materials are very valuable in upgrading their knowledge as environmental specialists and a lot of materials provided by U.S. EPA are in daily use.

In frames of the project hazardous material management (p.3.5), in addition to the training course materials, participants from Estonian Rescue Board received a lot of manuals concerning hazardous materials and relevant literature in May 1996.

Upon the request of institutions and private organizations involved into the implementation process of the Programme, a lot of publications and software according to the list worked out together with representatives from U.S. EPA were donated. Some publications were also sent

upon the request of individual experts.

In frames of the project concerning the assessment of environmental issues of Silmet (p.2.4) a lot of literature was provided to rare earth processing plant in order to give possibilities in finding solutions in improvement the environmental conditions in Ida-Viru County in May 1996.

U.S. AID Office in Estonia provided several video material concerning the training programmes of safety regulations in U.S.

A list of literature and software provided in frames of this Agreement and described above please find in Attachment 2. The list is not final, because a lot of literature and software were donated after establishing personal contacts between environmental specialists and institutions in U.S. and in Estonia, Latvia and Lithuania. We can consider it as a very beneficial follow-up to this Programme as these contacts give possibility for future contacts and information exchange among all partners and based on these personal contacts, new cooperative activities between different institutions may be started.

#### **2.4. ENVIRONMENTAL ASSESSMENT IN SILMET**

At the end of year 1995, representatives from U.S. EPA Region 5, U.S. AID, USA Embassy from Denmark and from Ministry started to look for possibilities to assist in environmental issues at the rare earth mineral processing plant Silmet, which locates in Sillamäe town at Ida-Viru County and which used to process raw materials for military industry in former Soviet Union. Currently this plant is still governmentally owned, but it is on the privatization list. As previous investigations, including those with foreign assistance, have been payed attention to ponds of hazardous waste, then the idea of this assistance was to pay more attention to the process itself and find possibilities for waste minimization and pollution prevention.

At the beginning of 1996 it was drafted the scope of the project in three phases, which included several visits by U.S. EPA contracted experts from U.S. Environmental Training Institute, Environmental and Safety Designs (EnSafe), EET, etc. in order to start the project on environmental auditing, risk and economic analyses in the process of Silmet management.

In April 1996, an abovementioned team of U.S. experts visited Silmet and met with responsible officials. During three day visit experts were introduced the whole process of the main production, waste ponds, local power plant. Based on findings of this visit was drafted a workshop for Silmet officials in waste management and risk analyses to be held in June 1996. It was also planned to held a workshop for a wider circle of interested authorities among Estonian officials, including representatives from Ministry of Economy, Ministry of Foreign Affairs, Privatization Agency, Silmet Board, etc. with the aim to introduce the possible environmental management plan for Silmet from the point of view future investments in the privatization process. As during the preparation period for the planned workshops, there was a lot of misunderstanding from both of the sides concerning the privatization process, business management plans, relevant data available for a wider audience, ongoing environmental auditing by Estonian specialists, etc., the actual benefit of workshops held in July 1996 was less than it was expected. Therefore, it was decided not to start the implementation of the third phase originally scheduled for August 1996. U.S. expert team prepared a final report based on materials of two phases and together with the



materials of the training course held in July 1996, these materials will be used by Silmet in working out the environmental management plans and workers safety plans. A lot of literature concerning processing the environmental management of hazardous materials was provided by U.S. team in July 1996.

## **2.5. TECHNICAL ASSISTANCE TO PRINTER'S ASSOCIATION**

In March 1996, U.S. EPA made a proposal to start with a pilot project to use computer technology to link the printing industry in Estonia with electronic sources of environmental information in the States. The same proposal was made also to relevant institutions in Latvia and in Lithuania. Estonian side was provided with a fact sheet with description of the possibilities available for printing industry concerning the environmental issues and with examples of electronic technical assistance in the States. Estonian side introduced this pilot project to the representatives from the Printers Association of Estonia. By opinion of PAE this pilot project meets the goals of the association and the fact sheet was translated into Estonian and will be available also in Internet on home pages of the Ministry. As success of this project depends a lot on availability of Internet access, it will come more beneficial in accordance with the rise of the level of electronic communication in whole Estonia, which corresponds to the priorities worked out by Estonian Government - to force the electronic communication and relevant training on each level and among various groups of interest.

## **CHAPTER III**

### **3. ENVIRONMENTAL MANAGEMENT TRAINING (PROJECT #JX)**

#### **3.1. THE PRINCIPLES OF ENVIRONMENTAL ASSESSMENT**

During period October 1993 - June 1995, U.S. EPA trainers conducted three times a five-day training courses "The Principles of Environmental Assessment" in Estonia. The training course manuals (a handbook and facilitator manual), prepared by U.S. EPA were translated into Estonian and during the training courses simultaneous and consequent interpretation was used. The training course materials are now available also at the Ministry's Library (see attachment 2).

Proposals for participating at the training course were made to those institutions and persons, who had already applied for licences at the Ministry for conducting the EIA and to those experts, who were interested in the conducting of EIA. The final selection of participants (all together 65) was made by EIA Department at the Ministry. Before the last training course there was held an additional four-day training for nine Estonian facilitators, following the principle "train the trainers". The last training course was conducted by U.S. EPA and Estonian facilitators and as a case study, Estonian examples were provided. Following the approach "train the trainers" gives an excellent possibility for follow-up activities and it is beneficial also in upgrading the training course materials. Thanks to the training courses provided by U.S. EPA, an initiative group of EIA and environmental auditing specialists of Estonia was formed. Those specialists are consultants

to the Ministry in working out Estonian legislation concerning EIA and environmental auditing, as they have and are actually carrying out a lot of EIAs in Estonia, therefore based on their experiences, the legal acts are designed to be more working ones and correspond to real conditions.

In October 1994 Estonian Management Institute (EMI) gave two training courses on the Principles of Environmental Assessment based on material prepared by U.S. EPA and with help of Estonian facilitators trained by U.S. EPA trainers in June 1994.

In summer 1996, EMI prepared materials and manuals for conducting the training courses for experts, who apply for licence to conduct EIA in Estonia at the Ministry - training course EIA procedures and regulations. These materials are in Estonian, correspond to Estonian legislation, case studies are from Estonia (e.g. the Kurtna EIA, project in frames of this Cooperative Programme (here see p.4.), but the main idea and the structure are based on the training courses provided by U.S. EPA. Authors of these materials and facilitators to the training course are the same persons trained by U.S. EPA specialists in frames of this Cooperative Programme. In August 1996 was conducted the first part of the training course (procedures) for 12 participants and the follow up (regulations) will be in October 1996.

### **3.2. THE RISK ASSESSMENT**

In June 1993, U.S. EPA trainers conducted a training course "The Risk Assessment" in Tallinn for 22 Estonian participants from various institutions. According to the opinion and responses from the course participants, a broader course providing more general approach to ecological risk and assessment would be appreciated, because by that time overall knowledge about risk assessment was not enough for understanding the issue in full details. In last years a lot of information concerning risk assessment has been provided by various international institutions (incl. U.S. EPA) and the understanding of its importance is more obvious today. The training course materials are available at the Ministry's Library.

### **3.3. FATE AND TRANSPORT OF CONTAMINANTS IN THE SUBSURFACE ENVIRONMENT**

Due to the project of Kurtna EIA, there was a specific need for training Estonian specialists in the field of groundwater pollution. Thanks to the efforts made by members of the EIA expert team in U.S. EPA Region 8 and financing the training course in frames of this cooperative programme, training courses on "Fate and Transport of Contaminants in the Subsurface Environment" was held for 24 participants in Tallinn in March 1995. The training course was conducted by specialists from U.S. EPA Robert S. Kerr Environmental Research Laboratory at Ada, Oklahoma. A possibility of participation at the training courses was provided *via* U.S. EPA Latvian and Lithuanian Programme Coordinators to specialists from the rest of Baltic Countries. In addition to the training course material given to participants, materials were later sent to various institutions in Estonia, whose representatives registered preliminary, but were not able

to participate at the courses. There was also a possibility to order the U.S. EPA Robert S. Kerr Environmental Research Laboratory publications and software (see here p.2.3).

The training course, by opinion expressed in the evaluation sheets of participants, gave a new approach to the environmental problems, was very useful and successful and the training course materials and other publications and software is in daily use also in practical cases.

### **3.4. PUBLIC PARTICIPATION TRAINING COURSES**

In the frames of this Cooperative Programme a significant attention was paid to increase access to information and public participation. As a part of the Environmental Assessment Demonstration Project -J<sub>1</sub> (see also here Chapter IV), a special training course on Public Participation was carried out.

U.S. EPA awarded grant No. CX823172-01-0 to the International Programs Consortium (IPC) in order to assess the following: needs for public participation; assistance sought by technical experts from U.S. EPA; working baselines; interactions between ethnic Estonians and Russians; Work plan linking the Kurtna Lakes EIA and development of public participation legislation. In order to meet the goals Mr. Bruce Stedman from ICA and in cooperation with the Estonian Management Institute and with assistance Programme Coordinator carried out a three-phase workshop on Public Participation. First phase of which was carried out in March 1995 in Tallinn and in Ida-Viru County. The second phase was carried out in June 1996 in Ida-Viru County after the public meeting held in this region in frames of Project J<sub>1</sub>(see also p.4.5 here). Persons, who attended the training course also participated at the Public Meeting held in the frames of project J<sub>1</sub> day before. The meeting and its results were analysed in detail on this workshop. The third phase was carried out in December 1995 in Tallinn.

These training courses were very beneficial to the officials at Environmental Departments of Counties, as according to the Estonian legislation, responsibility for providing information for public is lying on those institutions. These training courses gave an overview of the general problems and also gave a practical training in arranging such activities. Although according to the new regulations, EIA and its part of public involvement will be carried out not by officials of environmental departments themselves, but by licenced private companies, this training gave a good understanding of the wide range of possibilities in PR and consequently helped the officials in evaluation of the proposals submitted in the tenders for carrying out the EIA activities.

### **3.5. HAZARDOUS MATERIAL MANAGEMENT**

In summer 1995, between the Coordinators of the U.S. EPA Programmes in Baltic, was under discussion a possibility for two Estonians to participate on Emergency Response Workshop held in Šiauliai, Lithuania. As the final information about this opportunity was received too late from U.S. EPA to Estonia, it was impossible to sent representatives from Estonia.

On the initiative of representatives from the Estonian Rescue Board, negotiations started to have an Emergency Response Workshop for Estonians in Lithuania (as the needed equipment for these

training courses was already located in Lithuania) in May 1996.

On January 12, 1996, National Rescue Board submitted an official request for covering the expenditures related to the training course from this cooperative agreement and the request was approved by U.S. EPA.

### **3.5.1. TRAINING OF FACILITATORS IN RAMSTEIN**

U.S. EPA provided also an opportunity for two Estonian specialists from National Rescue Board for participation on the ten day training courses in Ramstein U.S. Air Force Fire Academy in April 1996. Together with specialists from Latvia and Lithuania, participants were introduced and trained as facilitators of the training course of emergency response to hazardous materials. Follow up to this training was provided in Lithuania (see p.3.5.2. here).

### **3.5.2. TRAINING OF FACILITATORS IN ŠIAULIAI**

Three specialists from National Rescue Board were trained on five days training courses in Šiauliai, Lithuania in May 1996. Two of them, as a follow up to the training at Ramstein (see p.3.5.1. here) received training on the U.S. training methodology and a deeper briefing on the chemistry of hazardous materials and instrumentations together with Latvian and Lithuanian colleagues. The principle of "train the trainer" is very valuable for starting implementation of some new issues as some training courses. There are some obstacles while using materials prepared not specially for country needs (here for Estonia). The conditions, equipment available, legislation etc. does not always correspond to a current situation, which makes the results of the training courses not so effective. But after training the trainers in methodology and in basic principles, they are able to adapt the materials for local needs. This principle has given very good results e.g. while training the procedures of conducting EIA (see p.3.1. here).

### **3.5.3. TRAINING COURSE IN ŠIAULIAI**

19 specialists from Estonian National Rescue Board and from institutions of Ministry of the Environment managing with hazardous waste participated on the training course "Hazardous Materials Health and Safety" in Šiauliai, Lithuania in May 1996. Materials sent in time to Estonia were translated from English to Estonian and copies for each participant were given.

Several participants from Latvia and Lithuania also joined the class. The facilitators were from U.S. EPA, U.S. AF, Estonia, Latvia and Lithuania (see p.3.5.1. and 3.5.2 here). A number of lectures were given and an essential part of practical training with equipment and exercises were provided. Participants from the Estonian side were chosen according to the preparation of the international exercise BERE 96 which took place in Estonia in September 1996 (see here p.3.5.4). Mainly half of the participants were directly from the district where the activity was planned to take place. Training courses provided by U.S. EPA gave an essential knowledge of management hazardous materials and emergency response to the participants. For participants of BERE 96, not trained on those training courses, was very beneficial to see the improvement of their colleagues' knowledge in hazardous materials emergency response. As members of Estonian Rescue Board were trained to be facilitators in this field, consequently this gives a perfect follow-

up for training possibilities among the rest of the employees of the Rescue Services.

Two interpreters from Estonia joined the team for consequent interpreting. By opinions of participants, here was stressed once again the demonstration of preference to consequent interpretation for the simultaneous one during such kind of training courses. Although the details of interpreting are described here, they were the same for all training courses provided by U.S. EPA (see Chapter III as a whole) and for the rest of training courses provided in Estonia in frames of international cooperation. Consequent interpreting gives a double result. First appears, when one issue is repeated twice (first in English by facilitator and then in Estonian by interpreter), which gives more time for participant to understand and remember it. Second a result appears for Estonian speakers in improving their knowledge in English. The consequent interpretation gives an immediate possibility for self-controlling of understood issue. Sometimes, as participants are specialists of their own bias, their knowledge in English concerning some specific terms and expressions is better than it is of interpreters, who may be specialized on wider terms. In friendly atmosphere of a workshop it always appeared that participants assisted interpreters to find more precise expressions in Estonian. For only English speaking facilitator consequent interpretation gives also possibilities for using more precise expressions, although is this a preference or not, depends very much on facilitator's individuality.

In addition to the abovementioned, I would like to pay attention once again, that although the knowledge of English among Estonian speakers has improved very rapidly even during the years of implementation of this Programme, tariffs of translation and interpretation have continued being high and it must be considered while designing in future international cooperative programmes.

#### **3.5.4. TRAINING EXERCISE BERE 96**

On June 28, 1996 in his letter Mr. Mati Raidma, Deputy Director General of the Estonian Rescue Board expressed his gratitude to Mr. Valdas Adamkus in case of the successful training course provided by U.S. in May for Estonian Rescue Services this year. He also invited Mr. Bruce Potoka from U.S. EPA to participate as observer on the international training exercise of simulation of hazardous materials accident BERE 96 in Estonia on September 5, 1996. There was simulation of collision of a passenger train and a train with hazardous materials. The training exercise was carried out very successfully and a group of U.S. specialists made a video of it. According to the project, U.S. specialists are going to prepare a training video for emergency response of hazardous materials based on activities and interviews filmed at BERE 96 and other activities in Latvia and Lithuania. The same team of U.S. specialists are going to prepare a video which gives an overview of U.S. AID activities in the Baltic Countries. Both of the videos will be available in Estonian, Latvian, Lithuanian and in English by the end of 1996.

#### **3.6. GROUNDWATER MODELLING WORKSHOP**

On June 3-7, 1996, a training course in applied groundwater modelling was carried out by U.S. EPA, U.S. Geological Survey, University of Wisconsin-Extension and Latvian Ministry of Environmental Protection and Regional Development in Riga, Latvia. After the negotiations with U.S. EPA and of U.S. EPA Programme Coordinator in Latvia, for three specialists from Estonia

was given a possibility to participate on these training courses.

By opinion of participants these training courses were very useful for groundwater specialists as the instructors were profoundly prepared and had abundant experience in the field of hydrogeological exploration. The lectures were clear and illustrated by a lot of interesting visual aids. Participants highly appreciated that every attendant of the course had a possibility to use a personal computer for practical cases, also that each participant had a possibility to consult the instructors concerning special problems connected with groundwater modelling and a lot of relevant software and manuals were distributed among participants. This workshop gave also an excellent possibility for future contacts between U.S. and Baltic specialists in the field of groundwater as the facilitators from U.S. themselves are currently dealing with solving the practical cases.

### **3.7. CISCO TRAINING**

Upon request of the Ministry, a study visit of Data and Networks Specialist at the Ministry to Brussels on January 15-19, 1996, was organized using partly funds of System Administration and Training under the project Twinning J<sub>3</sub>. Other parts were covered from the budget of the Estonian Ministry of the Environment and EU LIFE-ESTONIA Programme Office.

Currently in Estonian Ministry of the Environment the overall aim of the effort is to improve environmental data exchange between the Environmental Information Centre -EIC (which is responsible for organizing environmental monitoring in Estonia), the Central Laboratory of Environmental Research -CLER (which coordinates the activities of all environmental laboratories in Estonia, and where the bulks of the analysis are made), and different parts of the Ministry of the Environment (see Attachment No.1 here), through linking the Local Area Networks of these institutions into a fast-operating Wide Area Network. This is also a significant part of this Cooperative Agreement in the frames of Assessment of Environmental Monitoring Capabilities -J<sub>2</sub> (here see also p.5.4.). Since this effort was the first of its kind in our country, relevant experiences were only found with international experts. As a result of screening the relevant possibilities, participation in the CISCO training course held in Brussels was selected to be the most useful and relevant to the objective. By opinion of participant these training courses were extremely fruitful. The experience and knowledge gained from CISCO training course is essential since it developed an ability to design and maintain networks in Estonia based on the newest technology. The actual benefits were seen fast: the first parts of the new (first in Estonia) Wide Area Networks of environmental authorities become usable by March 1996 and by September 1996 EIC, CLER and several buildings of Ministry are already connected with WAN.

### **3.8. WEC TRAINING**

On September 1995 Programme Coordinator participated on Initial Workshop for Cleaner Production in Estonian Industry, conducted by Norwegian Society of Chartered Engineers at recently opened Centre of Technical Assistance for Pollution Prevention in Estonia, funded by WEC (World Environment Centre) and U.S. AID. Although this training course was not directly funded in frames of this Cooperative Agreement, facilitators from Estonian side were able to use their knowledge gained previously on training courses provided by U.S. EPA (see here p. 3.1., 3.2., 3.3.,3.4)

### **3.9. SALZBURG SEMINAR SESSION 319**

The programme coordinator participated in September 1994 on the Salzburg Seminar on Session 319 "Environment and Diplomacy." (U.S.-managed nonprofit organization, based in Austria) where 58 representatives from 29 countries participated in various lectures and workshops during one week. Although the possibility to participate came about outside of the framework of this Cooperative Agreement, the Seminar provided an excellent opportunity to introduce for an international audience the joint activities between Estonia and U.S. in the field of environmental management.

### **3.10. MEDIATION TRAINING**

In June 1996 programme coordinator participated on a five-day training course Mediating Environmental and Public Policy, provided by CDR Associates, U.S. CO. Opportunities for participate on this training course was provided in the frames of this Cooperative Agreement under the project Environmental Assessment Demonstration (J<sub>1</sub>)

As mediation is new issue in Estonia, valuable knowledge was gained in the field of mediation for practical strategies, the step-by-step process, analyses of complex disputes, principles of consensuses, etc. which are the basic source in the mediation process. In addition to the benefit from the participation of one representative from Estonia, a lot of training material, which was provided during the course, is available now in Estonia. This material gives a lot of ideas in the process of establishing the Environmental Mediation Centre in Estonia. Need of establishing such centre has been raised by NGOs, green movement, nature conservation authorities, etc. and relevant projects have been initiated in EMI during last years.

### **3.11. EU LIFE-ESTONIA PROGRAMME OFFICE TRAINING COURSES**

Working place for Programme Coordinator provided by Ministry during the implementation of the Cooperative Agreement was in the EU LIFE-ESTONIA Programme Office, the purpose of which was the preparation and conducting of training courses for providing the Estonian officials with knowledge, information and skills necessary for working in the changing conditions of transition to a market-based economy. See here also p.1.3.3. Programme Coordinator assisted periodically in the preparation phase of training courses and also participated on them. During three year implementation period 27 runs of nine topics for around 600 persons was provided with assistance of EU experts, therefore a wide circle of environmentally interested persons in Estonia and outside of it were also introduced about this Cooperative Agreement as an excellent example of successful cooperative activity between CEEC (Central and Eastern European Countries including former Soviet Union) and USA

## **CHAPTER IV**

### **4. ENVIRONMENTAL ASSESSMENT DEMONSTRATION PROJECT (#J1)**

#### **4.1. RESPONSIBLE AUTHORITIES AND CONTRACTS**

##### **4.1.1. RESPONSIBLE AUTHORITIES**

The Kurtna Lakes system, situated in the Ida-Virumaa County of Estonia, presents a valuable natural complex with almost 40 lakes spread over the territory of 30 km<sup>2</sup>. Some of these lakes are unique due to their type as well as the rare species found there. Now the survival of the lakes is endangered by human activity as the result of the rapid industrial development in the Ida-Virumaa.

In 1993 on the initiative of the Ida-Virumaa County Government, the Estonian Ministry of Environment and the U.S. Environmental Protection Agency (EPA) an Environmental Impact Assessment (EIA) was undertaken in frames of this Cooperative Agreement. The aim of the EIA was to determine the impact of industrial areas on the hydrogeological condition of the Kurtna Lakes. This was done to provide an expert assessment based on the available industrial and scientific research findings, and it was accompanied by extensive additional investigations to complement the inadequate data.

The precondition of the EIA was to identify alternatives for maintaining or even improving the condition of the Kurtna Lakes while meeting the demands of the economy.

As the Kurtna EIA was extremely complicated and important, for better management this process from Estonian side, Minister of the Environment formed Steering Committee on November 2, 1994, which members were six experts from various Ministries and from Ida-Viru County local authorities. The aim of Steering Committee was to evaluate proposed terms of reference, interim reports, to solve current problems already during the EIA process to make the final EI Statement more effective. Steering Committee responsibility was also to evaluate the final results of the EIA and EIS and based on the results to make his suggestions to Minister for future action.

##### **4.1.2. CONTRACTS**

The implementation of EIA of Kurtna Lakes started in February 1994. After involvement of several experts for scoping the EIA, it was obvious that for management EIA of this kind, there is need of one contractor, whose responsibility is to manage the whole EIA with involvement of different experts from various areas. Therefore a public tender for the EIA contractor was announced by Ministry in May 1994 which was won by Ideon & Ko., a licenced expert company. The partners from U.S. side were experts from U.S. EPA Region 8 Mr. Weston Wilson and Michael Wireman (see here also p.4.2).

In order to implement the EIA step by step, four contracts were made between the Ministry and Ideon & Ko during years 1994-1996.

- 1) Environmental Impact Assessment of Kurtna Lakes and Ground Water Protection
  - \*Detailed scope of EIA Kurtna Lakes and Groundwater protection - impacts from oil-shale mining, ground-water supply, peat mining and sand-gravel extraction development in the Kurtna Lakes and Kurtna Landscape Area
  - \*Description of situation of the Kurtna Lakes and Kurtna Landscape Reserve Area
  - \*Description of proposed recourse development (oil-shale, groundwater, peat, sand-gravel



\*Hydrobiological investigations in certain lakes in summer time

2) Groundwater Pollution of Kurtna Lakes Area

- \* Background and state of ground water pollution in Kurtna Lakes Area
- \* Investigations and groundwater contamination database
- \* Detailed programme of ground water contamination sampling, field investigations and laboratory analyses
- \* Preparation, clean-up, pumping and field tests of the wells
- \* Ground water sampling and field tests according to the programme of field works
- \* Laboratory analyses of groundwater samples - macroelements and microelements
- \* Interpretation of investigated results
- \* Conclusions

3) Criteria, Methodology and Alternatives to the Proposed Action of Environmental Impact Assessment - Kurtna Lakes and Groundwater Protection

- \* System and hierarchy of the EIA criteria connected with environmental setting, continued resource extraction and proposed action
- \* Generating and screening of the proposed action alternatives for continued resource extraction
- \* Hydrogeological model as an instrument to compare and assess alternatives
- \* Mitigation measures to minimize environmental impacts

4) Draft and Final EIS of Environmental Impact Assessment of Kurtna Lakes and Ground Water Protection

- \* Analysis of final scenarios of proposed actions
- \* Results of the EIA
- \* Draft of EIS
- \* Kurtna EIS and EIS workshop - results and decision making
- \* Final EIS

#### **4.2. INSTITUTIONS INVOLVED AND COOPERATIVE WORK**

In eastern Estonia, where oil shale (the main energy source for the republic) and other minerals are mined, natural mineral deposits have been relatively well studied. The availability of the resources, their location, and the size of the reserves are well known. Separate, extensive studies have also been carried out by lake scientists. However, the environmental impacts resulting from the utilization of mineral resources have not been sufficiently analysed, and attempts to integrate industrial studies with scientific research on the lakes have been unsuccessful.

Therefore Ideon&Ko involved in this EIA process the best Estonian specialists known for their previous involvement in the problems of the region. Valuable expertise and assistance in the whole EIA process were provided by the environmental specialists from the U.S. EPA Region 8 Mr. Wireman and Mr. Wilson, who were members of the main expert group. On their initiative a lot of additional expert assistance from U.S. for improving the results of the EIA was provided (see here also p. 2.3. and 3.3).

The successful cooperative work was done with most of the institutions in this region and with relevant to this project institutions from all over Estonia. Here I would like to express the highest gratitude on the behalf of the experts from Ideon&Ko and of myself to such institutions as:

County Governments of Ida-Virumaa and Lääne-Virumaa; town councils of Jõhvi, Kohtla-Järve, Sillamäe, Narva and Tallinn; parishes of Illuka, Vaivara, Toila, Jõhvi, Mäetaguse and Saare; high schools of Jõhvi and Kohtla-Järve; Environmental Departments of Ida-Virumaa, Lääne Virumaa, Narva; Estonian Oil-shale Co.; Waterworks of Kohtla-Järve and Jõhvi; peat-mining industry at Oru; RAS Kiviter; RAS Silbet; RAS Viru Geologia; AS Maves, AS Veerek; The Ministry of Economy, Ministry of Finance; the Estonian Forest Board; the Estonian Land Board; the Estonian Fishery Board; Estonian Geological Survey; Tallinn Technical University, Tartu University; Estonian Management Institute, Institute of Ecology, Institute of Zoology and Botany, Institute of Geology, Institute of Hydrometeorology; Institute of Energy, Institute of Economy; Estonian Green Movement; Estonian Fund of Environment, Estonian Fund of Nature, and to rest of institutions involved in this project but not listed above.

Special thanks to all departments of the Ministry of the Environment.

In frames of this project cooperation and information was exchanged with international institutions such as EU PHARE Programme; EU LIFE-ESTONIA; Krüger Consult (Denmark); VKI (Denmark); Swedish EPA; International Economic & Energy Consultants, Division of International Mining Consultants Limited IMCL, United Kingdom; The Ministry of the Environment in Finland; National Board of Waters and the Environment in Finland; Nordic Investment Bank, etc.

#### **4.3. SCOPE OF THE EIA**

In order to achieve the objectives of the EIA, a computer-assisted model for the studies of the hydrogeological condition of the area was prepared, and available reliable characteristics as well as data from earlier research was fed in. All potential, existing, and planned impacts associated with various industrial activities were then simulated. As a result, 24 alternatives were initially identified which reflected both the minimum and maximum levels of the cumulative impacts from the planned action.

Finally, eight perspective options for future development were identified. The key principle of the EIA effort was the preservation and improvement of the Kurtna Lakes system's condition. Therefore, most of the work concentrated in more detail on these alternatives which could have facilitated the achievement of the objective. Detailed research work was not given to those alternative solutions which, if applied, had obviously caused the ruin of the lakes.

In addition to the hydrogeological computer simulation, separate studies were carried out to determine the quality of groundwater and its conformity with the Estonian standards for potable water. This work entailed numerous analysis and additional tests. The current biochemical and biological characteristics of the lakes were also thoroughly examined. Thanks to prior limnological studies conducted there for many decades, it was possible to compare available data and then predict further development of Kurtna Lakes. Because the area is an important recreational area holiday place, the recreational value of the lakes was also considered.

#### 4.4. EXPERT CONCLUSION

On basis of these investigations experts proposed several actions for decision makers, where the basic conditions for choosing the preferred alternatives were as follows:

For the survival of the lakes:

- \* it is expedient to considerably limit the water extraction loads from the central drinking water (Vasavere) intake or to completely stop it;
- \*it is expedient to limit or terminate the discharge of mine drainage water into the lakes;
- \*it is essential to stop oil-shale mining activities in the northern section of the Sirgala pit without any delay and in the southern section to refrain from moving closer to the lakes than 2000 metres from the established land border.
- \* it is essential that peat production will not move closer to the lakes than 1000 m from the established land border.
- \*it is expedient that sand production shall not go beyond the groundwater level nor exceed the 500 m<sup>3</sup> output limits per day.

On suggested alternative all these conditions were considered and a detailed action plan was submitted to meet the both of the requirements - maintaining or even improving the condition of the Kurtna Lakes and meeting the demands of the industry.

The EIA results indicate that if a sustainable development alternative is chosen now, it will be the last possibility to preserve the Kurtna Lakes system as an entity and to improve the damaged lakes. If decision-making and the implementation process are postponed for more years, the chance to save the lakes will be lost.

#### 4.5. PUBLIC PARTICIPATION

This particular EIA has initiated considerable large scale of public participation. For Estonia, public participation on such a large scale was a novel experience; consequently, all those involved - officials, experts, the public - learned a great during this two-year project.

In frames of this project five Public Meetings (May.26, 1994; October 19, 1994; June 13, 1995; December 13, 1995; March 13, 1996) were held. On these five PM more than 400 participants were involved. Before each PM, special announcements were in local newspapers and at State Radio and fact sheets with invitations were mailed to each participant of previous PM and persons possible interested in the process of the EIA.

The part of public participation was carried out by Programme Coordinator with assistance Mrs. Anne Randmer from Estonian Management Institute and Mr. Bruce Stedman from ICA. Members of the expert team and persons involved to the public participation gave an idea to edit in addition to the final act of the EIA also a nontechnical summary for introducing the process and the results of this EIA for the wider circle of interested persons - local people, all experts involved, possible investors, etc. Nontechnical summary of the Kurtna EIA (bilingual - in Estonian

and in English) was published in September 1996.

On basis of this public involvement to EIA process several training courses were carried out separately (see here p.3.4.). using this case as an example of public participation.

In summer 1996 EMI prepared materials and manuals for conducting the training courses for experts, who apply for licence to conduct EIA in Estonia at the Ministry - training course EIA procedures and regulations where Kurtna EIA and the part of it public participation is used as a case study (see p.3.1.here).

It has been also used as a case to implement the newly passed relevant legislative acts of Estonia in practice, with the specific aim to obtain feedback from the practice for using it at the development of the law on EIA.

#### **4.6. IMPLEMENTATION OF THE RESULTS OF THE EIA**

In December , 1995 expert group met with representatives from Denmark Mr. Sven Pauner and Mr. Jens Lønholdt. They introduced the just started EU PHARE Programme Project "Reduction of Pollution in Oil Shale Mining areas: Water Resource Management (Estonia) The Redos Project which deals with the problems of watersupply in this region.

In March 1996 and in September 1996 the implementation of the results of the EIA were under discussion in the Riigikogu (Parliament) Environmental Committee and the next steps to be taken have continuously been under discussion between the authorities at the Ministry and Ida-Viru County. Riigikogu, Estonian Government and the Ministry are showing their willingness to support Ida-Viru County activities in the implementation of the EIA results. In September 1996 at the meeting between Mr. Adamkus from U.S. EPA and Mr. Aidma, Governor of Ida-Viru County it was announced that a special initiative group from Ida-Virumaa will be established in order to start the implementation phase - coordination of activities concerning environmental monitoring in this district, upgrading the groundwater model worked out in frames of this project etc . Some of the proposals of implementation made by expert group are already carried out, for example the closing activities of the Sirgala north oil shale open pit and reducing the leaks of the water loses in the frames of the EU PHARE programme. The initiative group will be funded via Estonian Environmental Fund. Intensive negotiations between Ministry and Ida-Viru County Government concerning the EIS implementation started at the end of September 1996.

In frames of this Programme U.S. EPA supported the implementation phase by purchasing an automatic titrator for determining water analyses in this region as the decisions to be taken and developments of implementation depend mostly on the water quality in different lakes and in groundwater.

In August 1996 director of the International Environmental College at Sillamäe announced that the students are voluntarily ready to start monitoring the water quality of Kurtna lakes in order to support the region in the preservation of the Kurtna Lakes and in order to put in the practice the knowledge studied from the literature donated by U.S. EPA in July 1996 (see p.2.3.) here. The public awareness concerning the future of the Kurtna Lakes has been grown enormously during the process of the EIA. Results of which were obviously seen in September 1996 during the greatest fire of last decades at Oru peat fields, located eastern to the Lakes. Under the public pressure local authorities had to correspond to questions concerning the future of the Kurtna Lakes and steps to be taken to preserve this area.

In October 1996 there will be presentation of the nontechnical summary of the EIA (see p.4.5. here) in order to inform the participants of five public meetings and the wide circle of publicly interested in the future of the Kurtna Lakes.

## **CHAPTER V**

### **5. ASSESSMENT OF ENVIRONMENTAL MONITORING CAPABILITIES (J#2)**

#### **5.1. BALTIC ENVIRONMENTAL MONITORING REVIEW PROJECT. ESTONIA**

This project was initiated in the order to assist in the design of Estonia's monitoring system to ensure that data is collected, analysed and disseminated to meet the needs of the Ministry and other environmental authorities for developing sound environmental policies and also with aim to encourage comparability of environmental data management among the Baltic nations, as the similar projects were initiated also in Latvia and Lithuania.

This project was conducted in three phases. The first phase involved the gathering of existing data based on questionnaires focussed on air and water monitoring, worked out by U.S. EPA experts and filled in by Estonian specialists. The second phase consisted of the development of a written report based on questionnaires, written materials concerning Estonian environmental monitoring, site visits of laboratories and on opinions of Estonian monitoring specialists. In November 1994 the team of U.S. EPA and PHARE experts drafted a report on the findings and proposed recommendations for improving monitoring capacities in Estonia.

In January 1995 a team of U.S. EPA specialists presented the final draft version of the report "Baltic Republics Environmental Monitoring Review Project. Findings and Recommendations. Estonia" to Estonian officials. The final report was published by U.S. EPA and it was disseminated in April 1995.

The Estonian side started to introduce the Report to the wide circle of donors. One of the advantages of the final report on "Baltic Republics Environmental Monitoring Review Project. Findings and Recommendations. Estonia" was the EU PHARE involvement and interest to the results of this report. Partly based on this report EU PHARE started a 2.5 million ECU project on Pollution Monitoring and Legislation, which first sub-project Master plan for Pollution Monitoring and Enforcement, which started in April, 1996, will design the following sub-projects. The next joint activities (EU PHARE, U.S. EPA and Minisrty) concerning environmental monitoring are planned to be held in October 1996. (see here p. 5.5).

#### **5.2. DEMONSTRATION OF COMPUTERIZED POSSIBILITIES OF ENVIRONMENTAL MONITORING**

U.S. EPA team of nine persons visited Estonia in September 1994 with the aim of demonstrating possibilities in using computerized monitoring data. The meeting was arranged cooperatively with CIESEN Estonian Office located at the National Library. In addition to specialists and officials from Estonian, several specialists from Latvia, Lithuania, Finland and Sweden also participated. For demonstration as a case was used the data concerning air and water monitoring collected in the frames of this Programme (see p. 5.1). This demonstration was also a good example of possibilities in using local area network and Internet in developing management strategies, assessment of environmental reports, information exchange with other countries etc. (see here also p.5.4).

Meeting on International Cooperation in Environmental Protection was held in Estonia in October 1994, on which it was clearly obvious that there was a strong need to integrate and coordinate the efforts of Estonia and the donor community in promoting the environmental monitoring system and environmental data management capacity in Estonia. For this reason the Meeting on Environmental Monitoring and Data management was held in Tallinn in November 1994, in order to identify the main targets and needs of Estonia in this field and to define the possible actions to be taken to provide the coordinated collaboration of different parties involved.

Parallel to the above, the Meeting focused on introducing the results of the review of the joint U.S. EPA/PHARE team assessment of air and water monitoring situation in Estonia with the aim of considering the possibility to utilize the review as the basis for the overall environmental monitoring assessment for Estonia.

### **5.3. BALTIC ENVIRONMENTAL DATA AND INFORMATION MANAGEMENT CONFERENCE IN JURMALA DECEMBER 1995**

As a part of cooperative work between the Baltic countries in the field of environmental monitoring, the Baltic Environmental Data and Information Management Conference was held in Jurmala, Latvia, in November 1995. This conference was organized by Latvian Environmental Data Centre, Baltic Environmental Forum, U.S. EPA Region 5, Environmental Consulting and Monitoring Centre of Latvia. This conference was focused on development of reliable information exchange which is essential for the actors in the political decision process, for the participants in territorial planning process, for communication with international organizations and for general public participation in political life.

### **5.4. IMPROVEMENT OF ENVIRONMENTAL INFORMATION SYSTEMS IN ESTONIA**

#### **5.4.1. OVERALL OBJECTIVE OF THE PROJECT**

In May 1994 U.S. EPA Region 5 visited Estonia to conduct a requirement analysis of the Estonian Ministry of the Environment. During this visit, a draft preliminary requirements for supporting the U.S. EPA Cooperative Agreement concerning the possibilities for funding the procurement of the equipment, were made. This cooperative work had a follow-up with several activities through the whole Program implementation period and was accomplished through a series of joint managerial discussions with managers on the short and long-term information needs and goals of the Ministry, coupled with technical site visits to Ministry facilities, review of organizational structure, and discussion of joint agreements. The objectives of the project were:

The identification of information partnerships, technical support agreements and support platforms internal and external to the Ministry that could promote and sustain the creation of a modern environmental information infrastructure within the Ministry.

Define the current technical environment of the Ministry. This includes identifying technical support elements, telecommunication links, current software and hardware capabilities and the availability to support advanced GIS, database and DOS/UNIX network systems.

Define the short-term and long term information needs. This includes defining how technical staff are utilizing their current equipment and what problems they may currently be experiencing in the areas of information collection and dissemination, telecommunications, equipment support, user support and staffing.

The identification of local vendors who could provide technical support, electronic components, and service agreements to support the current technical environment or any equipment furnished to the Ministry *via* U.S. EPA Cooperative Agreement.

#### **5.4.2. IMPLEMENTATION AND IMPACTS OF THE PROJECT**

In order to start the next step of the implementation of this project - purchasing of a package of equipment in accordance with specifications which had been prepared under supervision of U.S. EPA experts, special funds were allocated within the Grant CX822165-01-2 under the projects Twinning J<sub>3</sub> (here p.2.3. also) and Assessment of Environmental Monitoring Capabilities J<sub>2</sub>. According to the Equipment list Attachment A to the Grant CX822165-01-2, U.S. EPA provided to the Ministry USD64,605.00 in order to purchase equipment in Estonia and USD28,258.00 as in-kind contribution to the Ministry. Please find a list of purchased equipment in Attachment No.3 here.

Start of the implementation of projects on Assessment of Environmental Monitoring Capabilities and Twinning entangled by financing, as mentioned here in p. 1.4.1. already. The part of in-kind equipment, purchased by U.S. EPA, was shipped to

Estonian in August 1995. In September 1995 some of it (Xtree Net Utility Software) was returned to U.S. EPA for exchange as that version did not suit with Novell software. Most of the equipment according to the list was purchased in Estonia in September 1995, but the installation of it was also entangled due to the reconstruction works after Ministry's the main building fire accident (see here also p. 1.4.4.). As the part of Value-Added Tax returned by the Estonian Taxation Board formed a significant part of funds (see here p. 1.4.3.) it was agreed to purchase additional equipment to the list approved earlier, according to the terms and conditions of U.S. EPA to meet objectives of this Programme.

In June 1996 it was also agreed that in order to strengthen the capabilities of environmental monitoring at Ida-Viru region and in order to support the implementation process of the results of the EIA (see p.4.4 here), to support purchasing an automatic-titrator for mobile water sampling in Ida-Viru County in frames of this Cooperative Agreement. 80% of the cost of the automatic-titrator (Model 58950-15VAC50/60Hz with peripheral devices) was covered from budget of this Programme and 20% from the budget of the Central Environmental Laboratory.

Impacts of the implementation of this Project are of great value (see here also p. 3.7). The most beneficial part of it is that improvement of the information technological infrastructure for the Ministry and its institutions (please find Attachment No.1. here) in order to meet the goals set up by this Agreement correspond totally the long term goals of the recently confirmed Environmental Strategy of the Estonia. Drafting the preliminary requirements for supporting Estonia in frames of this Agreement, U.S. EPA experts supported the ideas of long term plans in improvement of the environmental information structures and technology worked out by Estonian specialists. The Estonian monitoring system and data information exchange management plans were drafted in order to use the capacities from Estonian Government and of those already donated by neighbouring Nordic countries with the aim to improve the information exchange and comparability of liable data in the area. Harmonization with the previously worked out long term plans and with significant support with equipment and with technical assistance improved the

environmental data management not only in Ministry and in Estonia, but also in the whole region including the Baltic and Nordic countries. From the National Budget of Estonia for improvement the environmental information structures and technology were allocated in 1995-5.18 mln. EEK (0.43 mln. USD), in 1996 - 6.2 mln. EEK (0.52 mln. USD) and for 1997 there is the proposal for allocating 7.0 mln. EEK (0.58. mln. USD).

#### **5.5. FUTURE COOPERATIVE ACTIVITIES IN THE FIELD OF ENVIRONMENTAL MONITORING**

In order to develop and improve the Estonia's environmental monitoring system with the aim to improve the information exchange and comparability of liable data in the area, future harmonization of monitoring management is needed. To meet these goals, a lot of regional activities are drafted. As mentioned above, according to the State Environmental Monitoring Plan (SEMP), Ministry appointed the Estonian Information Centre (EIC) as a responsible authority in carrying out these activities. The long term plans of SEMP correspond to the plans of the Baltic region and a lot of joint activities are drafted with the aim of the harmonization process with the EU directives as all three Baltic countries have shown their willingness to join the EU. Steps towards harmonization of the activities related to regional monitoring were taken already with the support of this Cooperative Programme (see p. 2.1.3. , 5.1. ,5,3, etc.).

In August 1996 Ministry made a proposal to use the remaining funds of this Cooperative Agreement in future for supporting Estonian participation in the regional environmental monitoring activities initiated by U.S. EPA and other international institutions as a follow up to the activities started in frames of this Programme. According to this proposal, experts from Estonia, U.S. EPA, EU PHARE and from other organizations will meet in Estonia in October 1996 in order to discuss the coordination of regional environmental monitoring.

Kai Helm

September 30, 1996

Programme Coordinator



MINISTER OF THE ENVIRONMENT

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NATIONAL FORESTRY BOARD 35

NATIONAL LAND BOARD 30

ESTONIAN LAND SURVEY 40

LAND BOARDS DEVELOPING CENTRE 30

LAND CATASTRE CENTRE 130

NATIONAL FISHERIES BOARD 17

PÖLULA FISHERY CENTRE

NATURE PROTECTION INSPECTION 15

MARINE INSPECTORATE 141

ENVIRONMENTAL FUND 3

FOREST RESEARCH INSTITUTE 90

16 COUNTY FOREST DEPARTMENTS 162

185 FOREST DISTRICTS 4230

ESTONIAN FOREST INFORMATION CENTRE 35

11 STATE OWNED HUNTING AREAS 66

FOREST PROTECTION SERVICE 11

ESTONIAN FOREST BREEDING CENTRE 10

RADIATION CENTRE 20

METEOROLOGICAL AND HYDROLOGICAL INSTITUTE 613

MARINE RESEARCH INSTITUTE 45

ENVIRONMENTAL INFORMATION CENTRE 39

4 ENVIRONMENTAL LABORATORIES 160

NATURAL HISTORY MUSEUM 25

NARVA ENVIRONMENT DEPARTMENT 12

FOREST SURVEY CENTRE 95

221 NATURE PROTECTION AREAS AND NATIONAL PARKS 158

GEOLOGICAL SURVEY CENTRE 200

ESTONIAN MAPPING CENTRE 130

SECRETARIATE

MINISTRY OF THE ENVIRONMENT 102

GENERAL DEPARTMENT

WATER DEPARTMENT

MINERAL RESOURCES DEPARTMENT

NATURE CONSERVATION AND WILDLIFE MANAGEMENT DEPARTMENT

ENVIRONMENTAL IMPACT ASSESSMENT AND NORMATIVES DEPARTMENT

PHYSICAL PLANNING DEPARTMENT

INTERNATIONAL RELATIONS DEPARTMENT

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BUILDING DEPARTMENT

FINANCIAL BUREAU

ADMINISTRATION BUREAU

DATA PROCESSING CENTER

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ECONOMIC SERVICES BUREAU

INTERNATIONAL RELATIONS DEPARTMENT

WASTE MANAGEMENT BUREAU

AIR PROTECTION AND RADIATION BUREAU

BUILDING INSPECTORATE

NORMATIVES BUREAU

15 COUNTIES AND TALLINN ENVIRONMENTAL DEPARTMENTS

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- EPA-820-B-95-004 Great Lakes Water Quality Initiative Technical Support Documents for the Protection of Aquatic Life in Ambient Water
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EPA-820-B-95-008 Great Lakes Water Quality Initiative Criteria Documents for the Protection of Wildlife DDT; Mercury 2,3,7,8-TCDD; PCBs

## **SOFTWARE FOR ENVIRONMENTAL AWARENESS**

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Stratospheric Ozone Depletion

Indoor Air Quality

Fish Contamination Advisory

Electronic Wetlands Herbarium

Environmental Assessment Resource Guide (EARG)

Municipal Solid Waste Factbook and Landfill Inventory v.2.0

National Primary Drinking Water Regulations

Private Water Systems Education System

UIC Class V Wells

Wellhead Protection

Lead in the Environment

The Lead Contamination Information System

Soil and Geologic Site Evaluation

Pesticide Storage and Handling Practices on the Farm

Fuel Storage Practices on the Farm

Livestock Waste Storage

Livestock Yards Management

Milking Center Wastewater Treatment  
Agricultural Pollution Prevention  
Best Management Practices for Soil Erosion  
Worker Protection Standard (1992 Pesticide Applicator Regs)  
Residential Water Conservation Techniques  
Water Efficient Landscape Planner  
Onsite Waste Disposal With Septic Systems  
Alternatives for Unsewered Communities  
Municipal Pollution Prevention Diagnostic Planner (CMAR 2.0)  
Groundwater Education System  
Surface Water Education System  
Wetlands Education Systems  
Programas en Espanol  
Comparative Risk Assessment  
RCRA Corrective Action Process  
Heart to Heart  
Comparative Risk Assessment '95

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DOD/FEDERAL Hazard Communication Training Program (in two parts (57.24 min and 28.24 min)

Asbestos Management and Control (11.04 min)

You & Office Safety 10.10 min

Don't Fall For It 14.00 min

Our Invisible Friend - "Electricity" 17.00 min

Video Display Terminal & You 17.00 min

"Breathing Easy" Maintaining Acceptable Air Quality in Federal Buildings 13.13 min

AID S&H Training Tape

1. Legislation (13 min)
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45

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52

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625/9-85/006	Protecting Health and Safety at Hazardous Waste Sites: An Overview
625/6-79/005	Continuous Air Pollution Source Monitoring Systems
600/2-80/018	Samplers and Sampling Procedures for Hazardous Wastes Streams
600/2-85/104	Practical Guide for Groundwater Sampling
SW-846	Test Methods for Evaluating Solid Waste - Volume IA
SW-846	Test Methods for Evaluating Solid Waste - Volume IB
SW-846	Test Methods for Evaluating Solid Waste - Volume IC
SW-846	Test Methods for Evaluating Solid Waste - Volume II
600/4-79/020	Methods for Chemical Analysis of Water and Wastes
625/6-85/006	Remedial Action at Waste Disposal Sites (Revised)
625/7-88/003	Waste Minimization Opportunity Assessment Manual
625/4-89/020	Corrective Action: Technologies and Applications
625/8-87/014	A Compendium of Technologies Used in the Treatment of Hazardous Wastes
540/2-90/002	Handbook on In Situ Treatment of Hazardous Waste-Contaminated Soils
600/2-87/008	Leaking Underground Storage Tanks: Remediation with Emphasis on In Situ Bioremediation
625/6-89/022	Stabilization/Solidification of CERCLA and RCRA Wastes
SW-874	Hazardous Waste Land Treatment
600/6-88/001	Treatment Potential for 56 EPA Listed Hazardous Chemicals in Soils
625/4-89/022	Requirements for Hazardous Waste Landfill Design, Construction, and Closure
625/4-91/025	Design and Construction of RCRA/CERCLA Final Covers
625/4-87/017	Permitting Hazardous Waste Incinerators
625/6-89/023	Q A/Q C Procedures for Hazardous Waste Incineration
625/6-86/014	Control Technologies for Hazardous Air Pollutants
625/6-89/024	Operation and Maintenance of Hospital Medical Waste Incinerators



**SOFT AND HARDWARE PURCHASED IN FRAMES OF THE COOPERATIVE AGREEMENT CX-822165-01  
UNDER PROJECTS TWINNING AND ASSESSMENT OF ENVIRONMENTAL MONITORING  
AS OBTAINED IN ESTONIAN SIDE AND IN-KIND CONTRIBUTION FROM U.S.EPA**

**ATTACHMENT 3**

Hard- and Software	Units	Date of purchasing or arrival	Date of transfer and receipt	Price of purchasing	Location*	Responsible person
Network Interface Cards (BNC)	10	Sep.12.1995	Jan.29.1996	1100.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
Additional Printer Memory for HP	5	Sep.12.1995	Jan.29.1996	2500.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
Pentium Server,32MB RAM,2GB HD	1	Sep.12.1995	Jan.29.1996	5700.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
4Mb 70ns 72-Pin SIMM Chips	8	Aug.10.1995	Jan.29.1996	1280.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
Seagate ST1523 N4.29MB SCS12HD	1	Aug.10.1995	Jan.29.1996	2150.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
SeagateST31200N1.2MB SCS12HD	4	Aug.10.1995	Jan.29.1996	2740.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
Mountain FS 1200-4 4GB DAT Tape Back	1	Aug.10.1995	Jan.29.1996	2125.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
CD-ROM Drivers	5	Sep.12.1995	Jan.29.1996	950.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
PC 486 File Server	1	Sep.12.1995	Jan.29.1996	2700.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
Laser Printer (HP)	4	Sep.12.1995	Jan.29.1996	5600.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
Pentium graphics PC,20"SVGA,16,1Gb	1	Sep.12.1995	Jan.29.1996	5500.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment

56

Writingdevice CD-R	1	Sep.12.1995	Jan.29.1996	5700.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
Uninterruptable Power Supply	1	Sep.12.1995	Jan.29.1996	1000.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
486DX-66	3	Sep.12.1995	Jan.29.1996	6585.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
Mounting Brackets for 3.5 "HD to 5.25"	6	Aug.10.1995	Jan.29.1996	90.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
Tape Cartridges (4MM)4GB 5 Pack	2	Aug.10.1995	Jan.29.1996	350.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
CorelDraw 5.0 (CD version)	1	Aug.10.1995	Jan.29.1996	450.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
Novell LAN V4.xx	1	Aug.10.1995	Jan.29.1996	2764.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
PC Mapinfo 3.0	3	Aug.10.1995	Jan.29.1996	2925.00	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
Network Interface Cards (BNC)	3	Sep.12.1995	Jan.10.1996	330.00	Central Laboratory for Environmental Research Marja 4d, Tallinn	Enn Otsa, Director of CLER
CD-ROM Drivers	1	Sep.12.1995	Jan.10.1996	190.00	Central Laboratory for Environmental Research Marja 4d, Tallinn	Enn Otsa, Director of CLER
PC 486 File Server	1	Sep.12.1995	Jan.10.1996	2700.00	Central Laboratory for Environmental Research Marja 4d, Tallinn	Enn Otsa, Director of CLER
486 DX-66	1	Sep.12.1995	Jan.10.1996	2195.00	Central Laboratory for Environmental Research Marja 4d, Tallinn	Enn Otsa, Director of CLER

Intel LanDesk Virus Protect 4Pak	1	Aug.10.1995	Jan.10.1996	1950.00	Marja 4d, Tallinn Central Laboratory for Environmental Research Marja 4d, Tallinn	Enn Otsa, Director of CLER
486DX-66	1	Sep.12.1995	Jan.29.1996	2195.00	National Forest Board Toompuiestee 24, Tallinn	S.Svilponis, Informatics Adviser
CD-ROM Drivers	1	Sep.12.1995	Jan.29.1996	190.00	National Forest Board Toompuiestee 24, Tallinn	S.Svilponis, Informatics Adviser
Windows NT3.5(Server/w 25userlic.)	1	Aug.10.1995	Jan.29.1996	1225.00	National Forest Board Toompuiestee 24, Tallinn	S.Svilponis, Informatics Adviser
PC Mapinfo 3.0	1	Aug.10.1995	Jan.29.1996	975.00	National Forest Board Toompuiestee 24, Tallinn	S.Svilponis, Informatics Adviser
486DX-66	1	Sep.12.1995	Jan.03.1996	2195.00	National Land Board Mustamäe tee 51, Tallinn	Raivo Vallner, Deputy Direktor of the National Land Board
PC Mapinfo 3.0	1	Aug.10.1995	Jan.03.1996	975.00	National Land Board Mustamäe tee 51, Tallinn	Raivo Vallner, Deputy Direktor of the National Land Board
Network Interface Cards(BNC)	10	Sep.12.1995	Jan.03.1996	1100.00	Environmental Information Center Mustamäe tee 33, Tallinn	Leo Saare, Director of Environmental Info Centre
Additional Printer Memory for HP	2	Sep.12.1995	Jan.03.1996	1000.00	Environmental Information Center Mustamäe tee 33, Tallinn	Leo Saare, Director of Environmental Info Centre
Seagate ST31200N 1.2MB SCS12HD	1	Aug.10.1995	Jan.03.1996	685.00	Environmental Information Center Mustamäe tee 33, Tallinn	Leo Saare, Director of Environmental Info Centre
CD-ROM Drivers	1	Sep.12.1995	Jan.03.1996	190.00	Environmental Information Center Mustamäe tee 33, Tallinn	Leo Saare, Director of Environmental Info Centre
Laser Printer (HP)	2	Sep.12.1995	Jan.03.1996	2800.00	Environmental Information Center Mustamäe tee 33, Tallinn	Leo Saare, Director of Environmental Info Centre
486DX-66	1	Sep.12.1995	Jan.03.1996	2195.00	Environmental Information Center Mustamäe tee 33, Tallinn	Leo Saare, Director of Environmental Info Centre

VMS-Novell, Pathworks for Open VHS	1	Oct.24.1995	Jan.03.1996	2100.00	Environmental Information Center Mustamäe tee 33, Tallinn	Leo Saare, Director of Environmental Info Centre
Novell LAN V4.xx	1	Aug.10.1995	Jan.03.1996	2764.00	Environmental Information Center Mustamäe tee 33, Tallinn	Leo Saare, Director of Environmental Info Centre
PC Mapinfo 3.0	1	Aug.10.1995	Jan.03.1996	975.00	Environmental Information Center Mustamäe tee 33, Tallinn	Leo Saare, Director of Environmental Info Centre
Mounting Brackets for 3.5"HD to 5.25"	2	Aug.10.1995	Jan.03.1996	30.00	Environmental Information Center Mustamäe tee 33, Tallinn	Leo Saare, Director of Environmental Info Centre
486DX-66	1	Sep.12.1995	Jan.02.1996	2195.00	Forest Management Centre Iva 12, Tallinn	Ülo Viilup, Director of Forest Survey Centre
PC Mapinfo 3.0	1	Aug.10.1995	Jan.02.1996	975.00	Forest Management Centre Iva 12, Tallinn	Ülo Viilup, Director of Forest Survey Centre
486DX-66	1	Sep.12.1995	Oct.22.1995	2195.00	Estonian Geological Survey Kadaka tee 80/82, Tallinn	Vello Klein, Director of Geological Survey of Estonia
PC Mapinfo 3.0	1	Aug.10.1995	Oct.22.1995	975.00	Estonian Geological Survey Kadaka tee 80/82, Tallinn	Vello Klein, Director of Geological Survey of Estonia
PC Micron Pentium 133MHz, 15 MB RAM 1,0 GB HDD, 512 KB cache 3.5" 1,5 MB FDD; 15" Micron VGA Monitor, mouse, keyboard, software MS Works (OEM); MS Windows 95 Plus Kit	4	Jun. 14, 1996	Sep.26.1996**	11544.75	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
PC ARC 486DX/66 8MB RAM 420 MB HDD 1MB VLB video 14" SVGA screen EE keyboard, mouse	2	Dec.16, 1994	Sep.26.1996	5658.22	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
Telefax FAX-B200S VHVO2452 BC-1	1	Dec.16, 1994	Sep.26.1996	1768.64	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
PC ARC 486DX/66 8MB RAM 420 MB HDD 1MB VLB video 14" SVGA screen EE keyboard, mouse and Laserprinter HP LASER Jet 4L	1 1	Jan.11.1995	Sep.26.1996	3933.21	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment

19

Photocopier NP 6010 "Canon"	1	Jan.11.1995	Sep.26.1996	2037.30	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
upgrading of CorelDraw 5.0 to 6.0	1	Sep.23.1996	Sep.23.1996	635.32	Ministry of Environment Toompuiestee 24, Tallinn	Vahur Eenmaa, Head of Data Centre Ministry of Environment
upgrading of PageMaker 5.0 to 6.0	1					
automatic titrator, model-58950-15,220 VAC 50/60HZ with peripheral devices	1	Sep.11.1996	Sep.11.1996****	7500.33	Central Laboratory for Environmental Research Marja 4d, Tallinn	Enn Otsa, Director of CLER
<b>Total contribution</b>				<b>120585.77</b>	<b>****</b>	

Remarks:

- location corresponds to the day of transfer and receipt of durable equipment and will be disseminated according to the improvement plans of the datainformation exchange worked out by Ministry
- \*\* in addition to 11544.75 USD Ministry contributed 2775.97EEK for purchasing equipment
- \*\*\* in addition to 7500.33 USD CLER contributed 23458.90EEK for purchasing equipment
- \*\*\*\* the final sum of includes in-kind contribution and prices to software (supplies), therefore does not correspond to the breakdown by objects - equipment - in the table 1 Project Summary