STANDARD SUMMARY PROJECT FICHE

1 Basic Information

1.1. Désirée Number 2002/000-579.05.01
Twinning light EE02-IB-AG-01

Title: Development of administrative capacity for monitoring and evaluation of the agri-environment measures

1.3. Sector:
Agriculture

1.4. Location:
Estonia

2 Objectives

2.1 Overall objective:

2.2. Project purpose:
Monitoring and evaluation system for agri-environment measures established.

2.3. Accession Partnership and NPAA priority
Accession Partnership 2001:
Reinforce the administrative structures needed for the design, implementation, management, monitoring, control and evaluation upon accession of EC funded rural development programmes.

Upgrade the capacity of the agricultural administration and complete preparations for the enforcement and practical application of the management mechanisms of the CAP.

NPAA 2001

Chapter 7 Agriculture, 7.3 Rural Development: agri-environment measures
In accordance with the EU rural development regulation (1257/99), elaboration and implementation of agri-environment measures is compulsory for all Member States./.../
In 2002, the Rural Development and Agricultural Market Regulation Act will be amended, enabling more extensive implementation of agri-environment measures. “The environment programme for Estonia agriculture” will be approved by the Government./.../
Program administrators, advisers, trainers and monitoring officials are trained for implementation of agricultural environment program. Cooperation projects with Member States of the EU also need to be launched.
NPAA 2002-2003

The preparations will continue in 2002 – 2003 for nation-wide introduction of agri-environment measures after accession. The training of administrators, advisers, trainers and monitoring staff will be continued primary with the assistance from foreign trainers. Within the Control Centre of Plant Production a unit will be established responsible for coordination and partial implementation of monitoring of agri-environment measures.

Progress Report 2001
Chapter 7 Rural Development and Forestry:
/.../ a pilot agri-environment measures have been carried out in two regions during 2001. Measures supported included rearing Estonian breeds of horses, restoration and maintenance of stone fences, maintenance of arable land overgrown with bushes and construction of ponds and wetlands. Staffing of the environment bureau in the Agriculture Department has been increased by two additional positions.

National Development Plan
In accordance with the Development Strategy for Estonian Agriculture (approved by Government in September 2000) and with the Estonian National Development Plan for 2001-2004, the main objectives of the agricultural sector are:

- development of a competitive and efficient agricultural sector (including diversification of agricultural production (agri-environment subsidies);
- development of an environmentally friendly agriculture (including the development of agri-environment measures, funding allocated for systematic scientific research and information dissemination events required and increasing the environmental awareness of agricultural producers).

Rural Development Plan (SAPARD 2000-2006)
Based upon the results from nationally-funded preliminary pilot projects, further pilot areas will be proposed for SAPARD co-financing from 2003 under Measure 7 of the national Agriculture and Rural Development Plan (SAPARD 2000 – 2006).
- Rural Development and Agricultural Market Regulation Act sets the legal basis for the implementation of the agri-environmental national funded program;

3. Description

Background and justification:

The development and implementation of agri-environment measures has been a legal requirement for all EU Member States since the Agri-environment Regulation (EC Council Regulation No.2078/92) accompanied the reforms of the CAP in 1992. Subsequently the new EC Rural Development Regulation (No. 1257/1999) indicates that agri-environment measures are now the only compulsory element.
Article 43(1) of the Regulation (EC) No 1257/1999 states that rural development plans shall include "provisions to ensure the effective and correct implementation of the plans, including monitoring and evaluation". Article 48(2) of the same Regulation foresees that "monitoring shall be carried out by reference to specific physical and financial indicators" and that "Member States shall submit annual progress reports to the Commission". According to Article 41 of the Commission Regulation No. 1750/1999 laying down detailed rules for implementation of the Rural Development Regulation, annual progress reports must be submitted to the Commission by 30 April of each year covering the previous calendar year. These progress reports should contain information on:

(a) any change in the general conditions of relevance to the implementation of the measure, and in particular any major socio-economic trends, or changes in national, regional or sectoral policies;
(b) the progress of measures and of priorities, with respect to their operational and specific objectives, expressed as quantitative indicators;
(c) the action taken by the management authority and the monitoring committee, if any, to ensure high-quality and effective implementation, and in particular:
(i) monitoring measures, financial control and evaluation, including data collection procedures,
(ii) a summary of the major problems encountered in managing the measure and any steps taken;
(d) measures taken to ensure compatibility with Community policies.

The Commission has presented a set of common indicators to Member States (Document VI/120004/00 - December 2000), as well as a common structure to present such indicators. These indicators are intended to provide a basic level of harmonised information on the implementation of rural development measures in member States and according to Article 41 of Regulation No. 1750/1999 should be followed "as far as possible" plus additional indicators where required.

1268/99/EC Article 5
Ex-ante appraisal, monitoring and evaluation

1. In order to assess their effectiveness, support for measures included in the program shall be subject to prior and mid-term appraisal, on-going monitoring and ex-post evaluation designed to appraise the success and impact with respect to the defined objectives.

2. The Commission and the applicant country shall monitor the implementation of the program. Such monitoring shall be carried out by way of jointly agreed procedures. Monitoring shall be carried out by reference to specific physical environmental and financial indicators agreed and established beforehand. Applicant countries shall submit annual progress reports to the Commission not later than the end of the first six months of the following year, which shall contain at least the information referred to in Article 37 of Regulation (EC) No 1260/1999.

In the Phare project (ES 9507.03.01.0001.) “Development of an Agri-Environmental Scheme in Estonia”, a national agri-environment measures were proposed for Estonia. The objectives of this project are presented at 3.2 (Linked activities) but the final report stated that “monitoring and evaluation are very important, inter-related parts of an agri-
environment measures. Monitoring data is the most important source of information, used for evaluation purposes. Appropriate monitoring and evaluation systems are one of the main concerns of the EC and should receive great attention during the planning period”. The objective of monitoring is to gather information on the effect that the program has on the environment and agriculture.

The overall justification for the project, therefore, is the need to conform with the EU legislation on the development and implementation of agri-environment measures. This includes the ability to monitor and evaluate the program based upon specified indicators. An indicator system was proposed by the previous project (ES 9507) and details on the requirements as well as the actual indicators proposed are presented in Annex 7.

### 3.1.1 Description of the Problem

The main requirements for monitoring the agri-environment measures and launching an efficient system for gathering and disseminating information are the following:

* **Indicators** A system of indicators (see Annex 7) was developed by Phare ES9507 for launching the monitoring of agri-environment measures, consisting of three parts (Environmental indicators, Socio-economic indicators and General indicators) but this existing set of indicators needs to be:


  2) Clearly identify and justify additional indicators where required to monitor progress towards the objectives of agri-environmental actions under the specific conditions of Estonia. For example, soil quality indicators need to be developed as these have not been described in the present list.

* **Administrative and technical capacities**

  Most of the data collection needed for monitoring and evaluation of agri-environment measures is planned to collect jointly from the existing systems. There does exist National Environmental Monitoring Program (NEMP) in Estonia, FADN/FSS (farm structure survey) data systems and IACS (Integrated Administration and Control System) is under construction but the implementation institutions have not been trained on specific agri-environment issues. As some of the monitoring activities are started as a pilot project, the need for the special co-ordination centre of the agri-environment monitoring is found to be important. For starting these activities under the pilot project, Centre for Ecological Engineering is taking this role but for implementing the whole scheme Control Centre of Plant Production (CCPP) has been nominated through the reorganisation in 2001 to take this responsibility. CCPP is a state institution under the Ministry of Agriculture with
direct co-operation links with the other data sources (ARIB, Jäineda). CCPP participates also in National Environmental Monitoring Programme co-ordinated by the Ministry of Environment. The Departments of agricultural monitoring, agri-ecology and environment protection were established in CCPP, but additional staff, training and equipment is needed before they have the capability to implement the monitoring program.

The monitoring data will be gathered from 7 reference areas. Considerable amounts of data will be collected and in terms of effectiveness the data should be aggregated into a common information system for the purpose of analysis. At the moment, there is no information system available that matches the monitoring requirements of the agri-environment measures.

To summarise the problem there is a need for additional technical expertise, staff resources, equipment and data management capability before the monitoring and evaluation requirements of the agri-environment measures can be met in full. Further details on the requirements for the new project are provided below.

### 3.1.2 Description of the Project

The aim of the project is to develop a functioning system for monitoring and evaluation of the agri-environment measures, including the unit responsible for executing and coordinating the program. The staff of the institutions involved in the monitoring and evaluation process should be trained, guidelines for monitoring and evaluation developed. The requirements are considered below.

#### * Indicators*

The list of the indicators will be amended during the course of the project, based upon the experience of the pilot projects.

#### * Guidelines*

At the moment, there are no guidelines (manuals) required for organization of the monitoring and evaluation of agri-environment measures; unfortunately, efficient monitoring and evaluation is not possible without such guidelines.

#### * Storing and processing of data*

The monitoring data required for the agri-environment measures is gathered from at least seven reference areas. The institution responsible for aggregation of the data required for monitoring and primary analysis is CCPP (they will also gather soil data including the results of laboratory analyses). Additionally, primary data required for analyses will also be gathered from other institutions (ARIC, Jäineda). As the structure of the databases is different and the volumes of data required relatively small, it does not make sense to develop software for the integration of different databases. It will be considerably easier to ask the institutions responsible for gathering the data to provide raw data that will be incorporated into one information system. The structure of the information system to be established must enable the user to allocate the data to a specific geographic location (geographic coordinates) or the unit of area (for example, the field register).
3.2. Linked activities:

The Phare project “Development of an Agri-Environmental Scheme in Estonia” (ES No. 9507.03.01.0001) has already been referred to. The stated objectives were as follows:

- to promote the uptake of environmentally-friendly agricultural practices which protect and enhance traditional landscapes, biodiversity and the wider environment;
- to contribute to providing income for farmers who deliver environmental benefits;
- to increase awareness of more environmentally-friendly production practices;
- to support a positive image for farmers amongst other members of Estonian society.

Two other Phare projects are relevant. The first is the “Development of Phytosanitary Control Services; the investment component “Equipment for Development of Estonian Phytosanitary Control Services” (1998)” included the provision of equipment to the CCPP relevant to the needs of the new project. The second project, Development of Agricultural Support System Administration (0008.01) resulted in the establishment of a field register which is relevant to the new project.

It is also relevant to mention another linked activity which is the agri-environmental support that has been allocated for pilot activities in Estonia. Certain agri-environmental measures are implemented on a national basis (for example, organic farming, landscape maintenance support and indigenous local breeds support). A program was launched in 2001 in two pilot areas (Lümanda and Kihelkonna municipalities in Saaremaa and Palamuse municipality in Jõgeva county). In 2002 it is planned to involve up to 55 municipalities in the simplified agri-environment measures. Information on the National Environmental Monitoring Programme is provided in Annex 9.

3.3 Results

The stated purpose of the project is to develop and complete the whole monitoring and evaluation system for the agri-environment measures. The project results are designed to collectively contribute to this purpose and the projected results are as follows:

1. Theoretical base for the system for collecting data (indicators) developed
2. Staff prepared and trained for carrying out monitoring activities;

3.4. Activities:

3.4.1 Twinning – Contract 1 (Phare € 394 600 )

a) Pre Accession Adviser (PAA) for 12 working months (€ 140 000)
   Tasks of PAA:
   - analysing the overall situation in the field of monitoring agricultural impact on the environment;
- analysing of the quality of data collected under pilot projects;
- evaluation of the scheme used for data collection in pilot project of agri-
  environment measures;
- development of the list of indicators;
- development of monitoring and evaluation scheme;
- development of training plan for the Phare project;
- preparation of manual for monitoring and evaluation of the agri-environment
  measures (250 copies);

Profile of the expert: The PAA should have an educational and professional background
both in the fields of agriculture and environmental protection (professional experience
at least 10 years). Fluent English and good computer literacy required.

b) Preparation of the manual for monitoring and evaluation of agri-environment
measures. Training (both general and specific) of beneficiary institutions staff (CCPP,
Ministry of Agriculture, Ministry of Environment, NEMP system and other institutions
- at least 40 persons) according to the training plans elaborated by the PAA (1 working
month and 1 week each expert, (€ 158 750). All the named activities are same for the
STEES but different in the speciality. For these activities several professional specialist
are used, each is covering the very specific area (activities are divided according to the
group of indicators).
1. Short term expert for 1 working month and 1 week
Task of the expert: assistance in preparation of the manual for monitoring and
evaluation of agri-environment measures, training of beneficiary institutions staff
relating to socio-economic aspects.

Profile of the expert: 10 years professional experience in socio-economics. The expert
should have good English language skills and be computer literate.

2. Short term expert for 1 working month and 1 week
Task of the expert: assistance in preparation of the manual for monitoring and
evaluation of agri-environment measures, training of beneficiary institutions staff
relating to soil science aspects.

Profile of the expert: 10 years professional experience in soil science. The expert should
have good English language skills and be computer literate.

3. Short term expert for 1 working month and 1 week
Task of the expert: assistance in preparation of the manual for monitoring and
evaluation of agri-environment measures, training of beneficiary institutions staff
relating to water protection aspects.

Profile of the expert: 10 years professional experience in water protection. The expert
should have good English language skills and be computer literate.

4. Short term expert for 1 working month and 1 week
Task of the expert: assistance in preparation of the manual for monitoring and evaluation of agri-environment measures, training of beneficiary institutions staff relating to air protection aspects.

Profile of the expert: 10 years professional experience in air protection. The expert should have good English language skills and be computer literate.

5. Short term expert for 1 working month and 1 week
Task of the expert: assistance in preparation of the manual for monitoring and evaluation of agri-environment measures, training of beneficiary institutions staff relating to biodiversity aspects.

Profile of the expert: 10 years professional experience in biodiversity. The expert should have good English language skills and be computer literate.

6. Short term expert for 1 MM and 1 week
Task of the expert: assistance in preparation of the manual for monitoring and evaluation of agri-environment measures, training of beneficiary institutions staff relating to landscape science aspects.

Profile of the expert: 10 years professional experience in landscape science. The expert should have good English language skills and be computer literate.

• Training of agri-environment measures monitoring and evaluation staff:
  - representatives from institutions responsible for administration of program and for environmental monitoring (15), including soil, water, air, biodiversity and landscape monitoring – 5 day study tour for 10 persons, 5 day training in Estonia for 15 persons (ministries, NEMP system, CCPP, CEET etc). Study tour is needed for better understanding of existing monitoring and evaluation system in some Member States. All main institutions involved to this process will be visited and their part in monitoring and evaluation system analysed in details.
  - representatives from institutions responsible for administration of program and for agricultural and socio-economic monitoring (12) – 5 day study tour for 6 persons, 5 day training in Estonia for 12 persons (ARIB, Jämeda, MoA, CCPP etc). Study tour is needed for better understanding of existing monitoring and evaluation system in some Member States. All main institutions involved to this process will be visited and their part in monitoring and evaluation system analysed in details.

c) Short term expert for 2 MM (€ 31250)

Task of the expert: development of the system of data collection (indicators), training of beneficiary institutions staff on databases, data interpretation and analysis – 5 day training in Estonia for 20 persons (all institutions involved)

Profile of the expert: educational and professional background in the field of information systems development, 5 years experience, good English language skills; computer literate.
e) PAA assistant (12 months, 6600 EUR)
Tasks:
• assisting of PAA
• arranging of training events
• organising of translation

Profile:
• experience in Phare / Twinning project (management)
• good knowledge of English
• good knowledge of Estonian
• good computer proficiency

f) MS Project Leader (3 days per month, 22 000 EUR)
Tasks:
• Assists the PAA with the project management:
  • monitoring and guidance of the whole project;
  • provision of legal and technical advice and analysis;
  • overviews the development of all key project outputs.

Profile:
• 15 years working experience
• Working experience in EU structures or other Accessions counties
• Fluent English
• Excellent inter-cultural communication skill

g) Local experts (Phare € 5000)

Six local short –term experts ( 1 man-month each) to assist in preparing the manual for monitoring and evaluation of the agri-environment measures and 1 local short-term expert (3 man-months) to assist in developing the system for collecting data (indicators).

There is need to use the local expert in co-operation with foreign experts in order to use the knowledge about local conditions.

Profile of the experts for preparing the manual:
Good knowledge of local conditions and activities in the field of environmental monitoring, experience in one of the areas (1 expert for each area): socio-economy, soil science; water protection; air protection, biodiversity, landscape science. The experts should have good knowledge of Estonian and English and be computer literate.

Profile of the expert for developing the system for collecting data (indicators):
Good knowledge about environmental databases in Estonia, good knowledge of Estonian and English.

3.5 Lessons learned
As stated in section 6.2.1 of the Annual Assessment Report R/ES/AGR/99031, Commission Services, together with the Beneficiaries, should ensure that the activities are implemented in a logical sequence, designed to optimise the results from the components and Programmes. All Phare activities in Ministry of Agriculture are in accordance with long-term priorities of Development Strategy for Estonian Agriculture.

Project ES 9507 clearly illustrated the need to increase the awareness of farmers about the agri-environment measures and the overall need for activities to monitor the effect of agriculture upon the environment in Estonia.

The summary of the Recommendations of PHARE CBC Project O.S.S. No. 9507.03.01.001 Development of an Agri-environment Scheme in Estonia states that Agri-environment programmes will be the only compulsory element of the new EU Rural Development Regulation (EC Council Regulation No. 1257/99) and will be enhanced by new measures such as capital expenditure for environmental purposes (not previously permitted under Regulation 2078/92).

4. Institutional Framework

A number of institutions in Estonia will be involved in the administrative structure for implementing the monitoring and evaluation system of the agri-environment measures. The institutions and their relationship is shown in Annex 8.

By statute of the Ministry of Agriculture (MoA), the Bureau of Environment is the managing authority for the agri-environment measures. The bureau is responsible for setting up a monitoring and evaluation system and for ensuring that the evaluation will be carried out in the most effective manner (see also Annex 8).

CCPP as the public body under the MoA will be responsible for monitoring of the agri-environment measures, and particularly for storing and processing the collected data and submitting the annual agri-environmental monitoring report to the Ministry. Institutions under NEMP system, ARIB and Jäned Training Centre are the main parts of data collecting system.

The investments made in the course of the project will be included in the budget of CCPP after the termination of the project.
### 5. Detailed Budget (€)

<table>
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<th>Contract 1 – twinning</th>
<th>Phare support</th>
<th>National Co-financing</th>
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<th>TOTAL</th>
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<td>0,008</td>
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National co-financing will be used as follows: in 2003 13 000 EUR and in 2004 4000 EUR will be used for PAA; 40 000 EUR will be used for training and study tours in 2003; in 2003 31000 and in 2004 4000EUR will be used for hiring local experts. The local experts are not civil servants. Estonian funds will be used as joint co-financing.

### 6. Implementation Arrangements

#### 6.1. Implementing Agency
The CFCU is the implementing agency responsible for tendering, contracting and accounting. Responsibility for technical preparation, implementation and control will rest with the recipient institution.

**PAO:**
Mr Renaldo Mändmets  
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Ministry of Finance  
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**PO:**
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Head of the Department of Public and Foreign Affairs  
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Project manager:
Illar Lemetti  
Director, Control Center of Plant Production
The MoA will be responsible for overall co-ordination of the project. Project implementation will take place in the CCPP.

The contact person in the Ministry of Environment is:
Mr Ott Roots
Ph +372 6 604 629
ott.roots@ekm.envir.ee

A Steering Committee will be established consisting of representatives of the MoA, Ministry of Environment, Ministry of Finance, EC Delegation, CCPP and CFCU. Main function of the Steering Committee is to ensure the surveillance of the project.

An independent organization appointed through open tendering will perform the evaluation of the agri-environment measures. The terms of references (ToR) for performing the evaluation will be the responsibility of MoA; a special Monitoring and Evaluation Committee (MEC) will be established. Practical work i.e. preparing all the relevant materials for the ToR and for the tendering process will be carried out by the Bureau of Environment. The evaluation report will be sent to the MoA for approval by the MEC). The MEC will also approve the relevant indicators and supervise the implementation of the agri-environment measures. The membership of the MEC is envisaged to be as broad as possible involving relevant line ministries (Ministry of Environment etc), local government, and economic and social partners.

The MoA will conduct publicity and dissemination of information related to the agri-environment measures. As the data collection function for monitoring the agri-environment measures is provided by institutions subordinated under the Ministry of Environment (MoE), the current project also involves specialists of the MoE.

The Ministry of Environment approved their support to this project with their letter (November 27th, 2001/no.2-1/151) from Mr Sulev Vare (Secretary General) to Mr Norbert Sagstetter (Delegation of the European Commission in Estonia).

The Ministry of Environment will participate in the Steering Committee of this project. It is planned, that representatives from the Ministry of Environment and from monitoring structures (National Environmental Monitoring Program) will participate in the administration of monitoring and evaluation of agri-environment measures (in the Monitoring and Evaluation Committee).

6.2. Twinning
Pre-Accession adviser (PAA)
Input: 12 months
The PAA will be located in Saku in the CCPP, as the actual work will be done there. The PAA will have an assistant to help with co-ordination of the project.

Contact persons for PAA:

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Control Centre of Plant Production  
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The project will consist of one component: twinning. For the twinning component Twinning Manual rules apply.

6.3. Non-standard aspects

No non-standard aspects, the DIS and Twinning manuals and Phare Practical Guide will be strictly followed.

6.4. Phare contracts

The total number of contracts is expected to be 1: twinning contract in the total amount of € 394 600.

7. Implementation Schedule

7.1. Start of tendering/call for proposals – August 2002
7.2. Start of project activities- April 2003
7.3. Project Completion – March 2004

8. Equal Opportunity

During the implementation of the project there will be no discrimination on the grounds of race, sex, sexual orientation, mother tongue, religion, political or other opinion, national or social origin, birth or other status. Equal opportunities for women, men and minorities will be ensured by the Steering Committee during the implementation of the project. The Estonian laws and regulations concerning the equal opportunities for women, men and minorities will strictly be followed. Equal opportunity for men and women to participate in the project will be measured by recording the experts and consultants employed.
9. **Environment**
As a result of successful launching of the project a system for monitoring and evaluation of agri-environment measures will be implemented. The monitoring and evaluation system will provide the interested parties with a better view of the possible dangers to the environment; the status of the agricultural environment will be under constant surveillance. Therefore, the project will have a positive impact on the environment.

10. **Rates of return**
The major benefit is the sustainable utilization of natural resources and protection of the environment.

11. **Investment criteria**

11.1. **Catalytic effect:**
Without Phare support Estonia will not be able to manage agri-environment measures at the moment of accession.

11.2. **Co-financing:**
The project will be co-financed by the Estonian Government through the state budget funds in the amount of € 0,092 m. Estonian funds will be used as joint co-financing.

11.3. **Additionality:**
Not applicable as this is state institution and no private investments are foreseen (relevant). Phare support does not replace other financiers.

11.4. **Project readiness and Size:**
The project will be ready for implementation as soon as funds are available. Total project size is € 486 600.

11.5. **Sustainability:**
The project will be sustainable, as Estonia has undertaken to adopt the EU Common Agricultural Policy without reservation and monitoring and evaluation are very important parts of agri-environment measures.

11.6. **Compliance with state aids provisions**
State aids provisions of the Europe Agreement will be respected.

11.7. **Contribution to National Development Plan**
12. **Conditionality and sequencing**

Before the Phare project is launched:
- 3 Officials are appointed for the positions in CCPP in January 2003, related to the monitoring and evaluation of agri-environment measures.
- Formal agreement between all the institutions involved is concluded
- Preliminary monitoring and evaluation scheme is worked out by Estonian side

**Sequencing of project activities**

The first part of the twinning project is to analyse the activities, carried out for monitoring of agricultural impact on the environment in Estonia and the activities under pilot project for developing agri-environment measures. Also the preliminary monitoring and evaluation scheme worked out by Estonian side will be evaluated and thereafter developed.

After this the list of indicators will be developed and manual for monitoring and evaluation of the agri-environment measures will be prepared.

At the same time training plan for the Phare project will be worked out and training activities will be started.
ANNEXES TO PROJECT FICHE

1. Logical framework matrix
2. Time implementation chart
3. Contracting and disbursement schedule by quarter
4. List of relevant Laws and Regulations
5. Reference to relevant Government Strategic plans and studies.
6. Main tasks and operating areas, and structural units of the CCPP
7. Proposed Indicator System for Agri-environment measures
8. Administration of monitoring and evaluation of Agri-environment measures
9. National environmental monitoring program
10. Data Flow Chart
11. Reference Area Data
**Phare log frame**

**LOGFRAME PLANNING MATRIX FOR**

<table>
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<th>Project title:</th>
<th>Programme name and number:</th>
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<tr>
<td>Development of the administrative capacity for monitoring and evaluation of agri-environment measures</td>
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**Contracting period expires**: 30th November 2004  
**Disbursement period expires**: 30th November 2005

**Total budget**: € 486 600  
**Phare budget**: 394 600 EUR

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<tr>
<th>Overall objective</th>
<th>Objectively verifiable indicators</th>
<th>Sources of Verification</th>
</tr>
</thead>
</table>
| Development and implementation of the agri-environment measures in conformity with EC requirements (EC/1257/1999; EC/1750/99). | EU accession in 2004  
Compliance with relevant EU regulations | 1. National Env. Monitoring Program, CCPP monitoring programs, international evaluation  
2. Ministry of Agriculture, EU reports concerning rural development programs |

<table>
<thead>
<tr>
<th>Project purpose</th>
<th>Objectively verifiable indicators</th>
<th>Sources of Verification</th>
<th>Assumptions</th>
</tr>
</thead>
</table>
| Monitoring and evaluation system for the agri-environment measures established. | Monitoring system fully operational by the end of 2003 | 1. Annual Report by CCPP  
2. Project reports Annual Report by CCPP | Good co-operation between the institutions involved |

<table>
<thead>
<tr>
<th>Results</th>
<th>Objectively verifiable indicators</th>
<th>Sources of Verification</th>
<th>Assumptions</th>
</tr>
</thead>
</table>
| The stated purpose of the project is to develop and complete the whole monitoring and evaluation system for the agri-environment measures. The project results are designed to collectively contribute to this purpose and the projected results are as follows:  
1. Theoretical base for the system for collecting data (indicators) developed  
2. Staff prepared and trained for carrying out monitoring activities;  
3 Manual for monitoring activities prepared. | Action and training plan prepared in beginning of 2003; 40 people trained (monitoring, logical analyses, IT, interpretation, sampling) and manual prepared by December 2003 | 1. Project report, participants’ evaluation | Good co-operation between the institutions involved |

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1 Contracting period expires 2 years after the Financing Memorandum is signed.  
2 Disbursement period expires 3 years after the Financing Memorandum is signed.
**Activities**

Pre Accession Adviser (PAA) for 12 working months (€ 140 000)

**Tasks of PAA:**

- analysing the overall situation in the field of monitoring agricultural impact on the environment;
- analysing of the quality of data collected under pilot projects;
- development of the list of indicators;
- development of monitoring and evaluation scheme;
- development of training plan for the Phare project;
- preparation of manual for monitoring and evaluation of the agri-environment measures (250 copies);
- evaluation of the scheme used for data collection in pilot project of agri-environment measures;

b) Preparation of the manual for monitoring and evaluation of agri-environment measures. Training (both general and specific) of beneficiary institutions staff (CCPP, Ministry of Agriculture, Ministry of Environment, NEMP system and other institutions - at least 40 persons) according to the training plans elaborated by the PAA (1 working month and 1 week each expert).

1. **Short term expert for 1 working month and 1 week**
   
   Task of the expert: assistance in preparation of the manual for monitoring and evaluation of agri-environment measures, training of beneficiary institutions staff relating to socio-economic aspects

2. **Short term expert for 1 working month and 1 week**

<table>
<thead>
<tr>
<th>Activities</th>
<th>Means</th>
<th>Cost (€)</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre Accession Adviser (PAA) for 12 working months (€ 140 000)</td>
<td>1. <strong>Twinning covenant</strong></td>
<td>Phare</td>
<td>Estonia</td>
</tr>
<tr>
<td>Tasks of PAA:</td>
<td></td>
<td>140 000</td>
<td>92 000</td>
</tr>
<tr>
<td>- analysing the overall situation in the field of monitoring agricultural impact on the environment;</td>
<td></td>
<td>17 000</td>
<td></td>
</tr>
<tr>
<td>- analysing of the quality of data collected under pilot projects;</td>
<td></td>
<td>40 000</td>
<td></td>
</tr>
<tr>
<td>- development of the list of indicators;</td>
<td></td>
<td>22 000</td>
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<tr>
<td>- development of monitoring and evaluation scheme;</td>
<td></td>
<td>10 000</td>
<td></td>
</tr>
<tr>
<td>- development of training plan for the Phare project;</td>
<td></td>
<td>8 000</td>
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</tr>
<tr>
<td>- preparation of manual for monitoring and evaluation of the agri-environment measures (250 copies);</td>
<td></td>
<td>10 000</td>
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<tr>
<td>- evaluation of the scheme used for data collection in pilot project of agri-environment measures;</td>
<td></td>
<td>5 000</td>
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</tr>
<tr>
<td>b) Preparation of the manual for monitoring and evaluation of agri-environment measures. Training (both general and specific) of beneficiary institutions staff (CCPP, Ministry of Agriculture, Ministry of Environment, NEMP system and other institutions - at least 40 persons) according to the training plans elaborated by the PAA (1 working month and 1 week each expert).</td>
<td></td>
<td>3 000</td>
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</tr>
<tr>
<td>1. <strong>Short term expert for 1 working month and 1 week</strong></td>
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</tr>
<tr>
<td>Task of the expert: assistance in preparation of the manual for monitoring and evaluation of agri-environment measures, training of beneficiary institutions staff relating to socio-economic aspects</td>
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<td></td>
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</tr>
<tr>
<td>2. <strong>Short term expert for 1 working month and 1 week</strong></td>
<td></td>
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</tr>
<tr>
<td>Week</td>
<td>Task of the expert: assistance in preparation of the manual for monitoring and evaluation of agri-environment measures, training of beneficiary institutions staff relating to soil science aspects.</td>
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<tr>
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</tr>
<tr>
<td>3.</td>
<td>Short term expert for 1 working month and 1 week</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Task of the expert: assistance in preparation of the manual for monitoring and evaluation of agri-environment measures, training of beneficiary institutions staff relating to water protection aspects.</td>
<td></td>
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<tr>
<td>4.</td>
<td>Short term expert for 1 working month and 1 week</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Task of the expert: assistance in preparation of the manual for monitoring and evaluation of agri-environment measures, training of beneficiary institutions staff relating to air protection aspects.</td>
<td></td>
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</tr>
<tr>
<td>5.</td>
<td>Short term expert for 1 working month and 1 week</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Task of the expert: assistance in preparation of the manual for monitoring and evaluation of agri-environment measures, training of beneficiary institutions staff relating to biodiversity aspects.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Short term expert for 1 MM and 1 week</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Task of the expert: assistance in preparation of the manual for monitoring and evaluation of agri-environment measures, training of beneficiary institutions staff relating to landscape science aspects.</td>
<td></td>
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</tr>
</tbody>
</table>

- Training of agri-environment measures
monitoring and evaluation staff:
- representatives from institutions responsible for administration of program and for environmental monitoring (15), including soil, water, air, biodiversity and landscape monitoring – 5 day study tour for 10 persons, 5 day training in Estonia for 15 persons (ministries, NEMP system, CCPP, CEET etc). Study tour is needed for better understanding of existing monitoring and evaluation system in some Member States. All main institutions involved to this process will be visited and their part in monitoring and evaluation system analysed in details.
- representatives from institutions responsible for administration of program and for agricultural and socio-economic monitoring (12) – 5 day study tour for 6 persons, 5 day training in Estonia for 12 persons (ARIB, Jāneda, MoA, CCPP etc). Study tour is needed for better understanding of existing monitoring and evaluation system in some Member States. All main institutions involved to this process will be visited and their part in monitoring and evaluation system analysed in details.

c) Short term expert for 2 MM
Task of the expert: development of the system of data collection (indicators), training of beneficiary institutions staff on databases, data interpretation and analysis – 5 day training in Estonia for 20 persons (all institutions involved)

g) Local experts
Six local short –term experts ( 1 man-month each) to assist in preparing the manual for monitoring and evaluation of the agri-environment measures and 1
A local short-term expert (3 man-months) to assist in developing the system for collecting data (indicators).

There is need to use the local expert in co-operation with foreign experts in order to use the knowledge about local conditions.

<table>
<thead>
<tr>
<th>Preconditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustainability in terms of budgetary financing</td>
</tr>
</tbody>
</table>
**TIME IMPLEMENTATION CHART**

Project N°: ES  
**Project Title:** Development of administrative capacities for monitoring and evaluation of agricultural impact on environment

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
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<tbody>
<tr>
<td>Contract 1</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Twinning package</td>
<td>T</td>
<td>T</td>
<td>T</td>
<td>T</td>
</tr>
<tr>
<td>PAA for 12 months</td>
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</tr>
<tr>
<td>PAA assistant</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>MS Project Leader</td>
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<tr>
<td>Training and study tours</td>
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</tr>
<tr>
<td>Local experts</td>
<td></td>
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</table>

**CUMULATIVE CONTRACTING SCHEDULE** (by quarters)  

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<thead>
<tr>
<th>Year</th>
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<th>2004</th>
<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>II</td>
<td>III</td>
</tr>
<tr>
<td>Institution Building</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Contract 1 Twinning</td>
<td>0,3946</td>
<td>0,3946</td>
<td>0,3946</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0,3946</td>
<td>0,3946</td>
<td>0,3946</td>
</tr>
</tbody>
</table>
### CUMULATIVE DISBURSEMENT SCHEDULE (by quarters)

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th></th>
<th></th>
<th>2004</th>
<th></th>
<th></th>
<th>TOTAL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
</tr>
<tr>
<td>Institution</td>
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<td>Building</td>
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<td>Contract 1</td>
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<td>0.275</td>
<td>0.325</td>
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<td>0.3946</td>
<td>0.3946</td>
<td>0.3946</td>
<td>0.3946</td>
</tr>
<tr>
<td>Twinning</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>0.214</td>
<td>0.275</td>
<td>0.325</td>
<td>0.3946</td>
<td>0.3946</td>
<td>0.3946</td>
<td>0.3946</td>
<td>0.3946</td>
</tr>
</tbody>
</table>
LIST OF RELEVANT LAWS AND REGULATIONS

Project No: ES
Project title: Development of administrative capacities for organization of monitoring and evaluation of agri-environment measures

Organic Agriculture Act (RT I 2001, 42, 235)


Fertilizers Act (RT I 1997, 93, 1563; 2001, 50, 283)


"The Code of Good Agricultural Practice", approved by the Estonian Agricultural Producers Union (14.02.2001) and the Estonian Farmers Central Union (01.03.2001)

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3 This annex is optional.
Annex 5

Reference to relevant government strategic plans and studies

Project No.: ES
Project title: Development of administrative capacities for monitoring and evaluation of agri-environment measures


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This annex is optional. Government strategic plans and studies are e.g. Institution Development Plan, Business plans, Sector studies etc.
ANNEX 6

MAIN TASKS AND OPERATING AREAS, AND STRUCTURAL UNITS OF THE CONTROL CENTER OF PLANT PRODUCTION (excerpt from the bylaws of CCPP)

§ 5. The main tasks of the Center in course of performing the analysis and field trials required for national surveillance, arising from legislation, in force in Estonia, are:

1) performance of registration and economic tests on varieties to be added to the List of Varieties; performance of ex post tests on batches of seed; laboratory analysis of the seeds for seed certification and duplicate samples;
2) testing of crop protection chemicals (pesticides) before the products are registered for attestation of conformity, analysis of the control samples of crop protection chemicals; analyses of plant diseases and pests in control samples
3) attestation of conformity of fertilisers, analysis of control samples;
4) attestation of conformity of fodder/feedstuff, analysis of control samples;
5) analysis of food control samples.

§ 6. The mains tasks of the Center, to be performed in the field of research and development and monitoring and in course of processing the applications filed by the customers are:

1) administration of the network of experimental stations and laboratory facilities;
2) development of environmentally friendly agricultural technologies and organisation of research and development projects in the field of good agricultural practice;
3) implementation of monitoring of agricultural environmental effects, food safety monitoring and other types of monitoring required;
4) performance of laboratory analysis and field trials and attestation of product conformity (if the applications are filed by customers).

§ 7. The Center may participate in any foreign projects, related to the main tasks of the institutions.

§ 8. The Center organizes training courses and testing of new methodologies for analysis, participates in development of new methodologies of determination and quality standards, appropriation of international methodologies for analysis and participates in international lab tests and organizes lab tests on national level.

§ 9. The Center is responsible for maintaining and replenishing the collection of micro-organisms, kept at the laboratory of microbiology for applied research.

§ 10. The Center is responsible for development of liming and fertilisation maps and other information materials, development and maintenance of related databases.

§ 11. The Center co-operates with research and science institutions of Estonia and other countries and any parties, interested in joint research projects.
§ 12. The Center participates in development of agricultural advisory system within its competence, supplies agricultural sector with information required and makes the research results available for the public.

§ 13. The Center is responsible for the accuracy of the trial results and trustworthiness of the results of the analysis, but also for timely presentation of related information and data.

§ 14. The Center gets approvals required for analysing the control samples, taken as a part of the national surveillance procedures and consults national bodies of supervision when choosing the methodologies for testing and sampling.

§ 15. The Center takes and analysis control samples within its administrative and operating area.

The structural units of the Control Center of Plant Production
1) Laboratory of microbiology, the task of which is the maintenance and replenishment of the collection of micro-organisms, selection and testing of new strains of bacteria for more efficient storage of plan materials and microbiological analysis of samples;
2) Seed control laboratory, the task of which is the seed quality control and seed infection control;
3) Laboratory of agro-chemistry, the task of which is to determine the lime and fertilisation requirements of soil, checking the quality of soil, fertilisers, growth substrates and compost;
4) Plant health control laboratory, the task of which is to determine the species of phyto-pathological plant, plant product and soil infections and damages;
5) Laboratory of pollutants and residuals, the task of which is to perform the laboratory analysis of the quality of crop protection chemicals, the content of residuals and pollutants in fodder, food products and other materials of vegetable origin and soil and participate in corresponding monitoring programs;
6) Grain crops and plant production laboratory, the task of which is the analysis of grain crops, grain products (cereals), fodder (feedstuffs), food of vegetable origin and other plant products;
7) The department of conformity and certification, inspecting and controlling the conformity of the quality of grain, grain products (cereals), fodder and raw material of vegetable origin, used for fodder and any other materials of vegetable origin, to the regulations, that issues conformity certificates and certificates;
8) Viljandi Testing Centre, the task of which is the organisation of scientific field trials and, under the methodological supervision of the representative of the Estonian Plant Production Inspectorate, also the performance of registration and economic tests on varieties to be added to the List of Varieties; performance of ex post tests on batches of seed; laboratory analysis of the seeds for seed certification and duplicate samples;
9) Department of information and extension, the task of which is the dissemination of the information produced by the Centre to the agricultural sector, interpretation of the results of lab analysis, development of publications, organisation of training and information dissemination days;
10) Department of agricultural monitoring, the task of which is monitoring of agricultural environmental effects, including the monitoring related to good agricultural practice, aquatic monitoring, soil monitoring and mapping and analysis of the soil characteristics;

11) Department of agri-ecology and environment protection, the task of which is the research in the field of agri-ecology, agri-hydrology and soil sciences and development of measures for environment protection, soil protection included;

12) Department of crop protection, the task of which is the organisation of crop protection, research on the efficiency of crop protection chemicals included;

13) Department of agricultural research, the task of which is the development of environmentally friendly and competitive agricultural technologies and organisation of co-operation between institutions of science and research, making use of the network of experimental stations and laboratory facilities available;

14) General department, the task of which is solution of issues related to information technology and provision of technical service for the Centre;

15) Department of accounting, responsible for provision of accounting and reporting services and dealing with personnel issues of the Centre;

16) Administrative department, responsible for the assets, financial services and administration of the Centre.
The central objective of establishing environmental indicators is to offer reliable information. It is essential therefore that indicators meet the following criteria:

- **Indicators must serve clearly defined targets** - with respect to practicability of policies, it is necessary to reflect the spatial and temporal dimension of related objectives;
- **Handling of information by policy-makers and administrations must be possible** - this is important for both identification of environmental problems and evaluation of the success of measures;
- **Technical and legal problems of data collection must be solved** – collection of data should be possible at reasonable costs and feasibility to combine with other statistics;
- **Indicators must be derived on the basis of a well established framework** – scientific standards must be fulfilled with clear methods of data processing;
- **Since environmental problems are very often site-specific, indicators must be established on a spatially differentiated basis** - indicators should also show temporal trends in order to allow for identification of priorities and assessment of policies over time.

Indicators function as tools for policy development and as means for communication of agricultural, rural and environmental issues. They should therefore be tailored to the needs and requirements of these different functions. For example, environmental issues should be evaluated at that spatial level on which they may be dealt with and the representation of this valuation should be in accordance with the information needs of those who have to take action.

**The indicator system proposed** by Phare project ES9507 for the monitoring of the agri-environment measures consists of three parts (see also annex 7):

- Environmental indicators
- Socio-economic indicators
- General indicators

**Environmental Indicators**

It is proposed by the above mentioned project that the environmental monitoring of the agri-environment measures is ideally based upon secondary data from national sources (e.g. National Environmental Monitoring Program (NEMP), Statistical Office of Estonia) combined with primary data collected from the agri-environment measures administration and ‘Reference Areas’ selected on the basis of landscape regions and agricultural conditions.

**National Data**

The water resources monitoring data, gathered within the NEMP framework can be used as the background information for the purposes of environmental monitoring. In areas where the reference areas of NEMP and agri-environment
measures coincide, the NEMP framework can also be used for the monitoring of bio-diversity.

Reference Area Data
It is proposed by Phare ES9507 that reference data will be collected from 7 main areas (see annex 11).

Baseline data (environmental, agricultural and socio-economic situation) will be collected during first year of agri-environment measures operation. Most monitoring data will subsequently be collected on an annual basis. In the reference areas monitoring will cover both participating and non-participating farms to make appropriate comparisons of environmental benefits.

As the soil types in Estonia are very different and diversified all over the reference areas, great attention must be paid to the analysis of soil data. This is required to explain the impact of the different measures, implemented under the agri-environment measures, on the soil as an environmental resource. The condition of soil has also both the direct and indirect effect upon the water resources as plant nutrients, pesticides residues, etc. can be leached into water from soil.

Socio-economic indicators
It is proposed that the socio-economic monitoring of the agri-environment measures is based upon secondary data from national sources combined with primary data collected from the agri-environment measures administration and the Reference Areas selected for environmental monitoring.

National Data
As far as possible the socio-economic monitoring of the agri-environment measures should eventually use the IACS (Integrated Administration and Control System) (EU Regulation No 3508/92) and the FADN/FSS (farm structure survey) data systems in order to establish a cost efficient data collection scheme. Both represent an important data source at an appropriately disaggregated level for the evaluation of policy effects. The relevant data is gathered by Jäneda Training Center, an institution administrated by the Ministry of Agriculture.

Reference Area Data
Additional farm level data should also be collected in the reference areas used for environmental monitoring. The relevant data is gathered by Jäneda Training Center.

General indicators
General indicators (number of beneficiaries etc) needed for monitoring of agri-environment measures are collected by ARIB (Agricultural Registers and Information Board) and Jäneda Training Center.
### Proposed (PHARE ES9507) Indicator System for Agri-environment measures

<table>
<thead>
<tr>
<th>General indicators</th>
<th>Indicator</th>
<th>Where is data, by which structure, equipment, transmitting to CCPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uptake in terms of no. of farmers</td>
<td>- Number of beneficiaries (abs.; % of all farmers)</td>
<td>ARIB</td>
</tr>
<tr>
<td>Uptake in terms of hectares, livestock units</td>
<td>- Number of hectares, livestock units (abs.; % of total); geographic distribution</td>
<td>ARIB</td>
</tr>
<tr>
<td>Uptake of the different measures (GEPS, SM1-SM5, ALS)</td>
<td>- Number of hectares, livestock units, etc. (abs.; % of total area; % of eligible area)</td>
<td>ARIB</td>
</tr>
<tr>
<td>Provision of training (TDS)</td>
<td>- Number of farmers, advisors, controllers</td>
<td>CCPP and/or subcontractors</td>
</tr>
<tr>
<td></td>
<td>- Number of courses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Number of training days</td>
<td></td>
</tr>
</tbody>
</table>

### Environmental indicators

- **Fertilisers and pesticide use**
  - Use of mineral fertilizers (N:P:K) kg/ha
  - Livestock density, units/ha agricultural land
  - N – Balance (farm) Kg N / ha (organic N + mineral N)
  - Use of agricultural pesticides, active ingredients kg/ha per year

- **Water quality**
  - $N_{tot}$, $P_{tot}$ concentration in the surface water (small lakes and rivers)
  - NO3 concentration, pesticides residues in ground water and surface aquifers

- **Farm management practices**
  - Improved crop rotation; winter coverage

- **Agricultural land use structure**
  - Changes in land use structure, size of fields, fragmentation

- **Landscape elements & natural wildlife habitats**
  - No of ponds, trees, forest patches, length of hedgerows, stone walls per area unit

- **Field margins**
  - Area of field margins under environmental management (% of total area)

- **Plant diversity of semi-natural habitats**
  - Plant species list, abundance of protected species. Sampling plots (1x1m) in transects

- **Plant diversity of agricultural landscape**
  - Plant species list. Sampling plots (1x1m) on different land usage types

- **Earthworms**
  - Abundance, number of species, biomass

- **Soil micro-organisms**
  - Abundance, number of species, biomass

- **Collembola**
  - Abundance, number of species

- **Carabidae**
  - Abundance, number of species

- **Soil quality***
  - Humus content, etc

### Socio-economic indicators

- **Farm income**
  - Per ha / farm / AWU; % total

Jäneda, CCPP

NEMP, subcontracted by CCPP or CCPP

CCPP with subcontractors

CCPP with subcontractors, NEMP

CCPP with subcontractors, NEMP

CCPP with subcontractors, NEMP

CCPP

Jäneda, CCPP
household income; contribution of AEP

Farm size
- Farm size, farm size classes
  (Comparing participating farms and Estonian average)
  Jäneda, CCPP

Farm types
- % of all farms
  (Comparing participating farms and Estonian average)
  Jäneda, CCPP

Agricultural employment
- No. of new jobs created
  (Comparing participating farms and Estonian average)
  Jäneda, CCPP

Attitudinal information and farmer’s awareness
- Qualitative information from farmer surveys
  Jäneda, CCPP

* - additional laboratory equipment is needed
ADMINISTRATION OF MONITORING AND EVALUATION OF AGRI-ENVIRONMENT MEASURES

Ministry of Environment

National Environmental Monitoring Programme

Draft of monitoring and evaluation report

Monitoring and Evaluation Committee

Supervising the implementation of the agri-environment measures

Ministry of Agriculture

(Managing authority)

ToR for evaluation report

Bureau of Environment

Responsibility for the management of agri-environment measures

ToR for monitoring report

Control Center of Plant Production

Department of agricultural monitoring and department of agri-ecology and environment protection

Collecting, storing and processing monitoring data, soil (and water) laboratory analyses (monitoring of agri-environment measures)

ToR for monitoring report

Evaluation report

Independent organization

Evaluation of agri-environment measures

Monitoring report

Monitoring and Evaluation Committee

Approval of monitoring and evaluation report

ToR for evaluation report
Data collected under the NEMP will mostly used as a background information (to describe the situation in Estonia and in different regions). When NEMP station will locate in special AEP monitoring areas, the NEMP data will used as direct source of information.

1. Environmental Monitoring Stations of the National Network

<table>
<thead>
<tr>
<th>PROGRAMME</th>
<th>No of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meteorological</td>
<td>106</td>
</tr>
<tr>
<td>Air Monitoring</td>
<td>27</td>
</tr>
<tr>
<td>Groundwater Monitoring</td>
<td>445</td>
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<tr>
<td>Inland Waters Monitoring</td>
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<tr>
<td>Marine Monitoring</td>
<td>87</td>
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<tr>
<td>Biodiversity And Landscape Monitoring</td>
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<td>Forest Monitoring</td>
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<td>Integrated Monitoring</td>
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<td>Radiation Monitoring</td>
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<td>Seismical Monitoring</td>
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<tr>
<td>Soil Pollution Monitoring</td>
<td>8</td>
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<tr>
<td>TOTAL</td>
<td>1625</td>
</tr>
</tbody>
</table>

Relevant NEMP sub-programmes:

SUBPROGRAMME

SUBPROGRAMME 1: METEOROLOGICAL MONITORING
1.1. Meteorological*
1.2. Agrometeorological*

SUBPROGRAMME 3: GROUND WATER MONITORING
3.1. Ground Water Monitoring*
3.2. Pandivere Region Monitoring*

SUBPROGRAMME 4: SURFACE WATER MONITORING
4.1. Hydrochemical monitoring in Lake Peipsi*
4.2. Biological monitoring in Lake Peipsi*
4.3. Hydrochemical and hydrobiological monitoring in Võrtsjärve*
4.4. Monitoring of small lakes* (indicator – water quality)
4.5. Hydrochemical monitoring of rivers* (indicator – water quality)
4.6. Biological monitoring of rivers*
4.7. Hydrochemical and hydrobiological monitoring in Narva*

SUBPROGRAMME 5: MARINE MONITORING
5.1. Eutrophication*

SUBPROGRAMME 6: BIODIVERSITY AND LANDSCAPES
6.1. Coastal landscapes* (indicators – landscape elements, plant diversity)
6.2. Remote Sensing of Landscapes* (indicators – landscape elements, plant diversity)
6.3. Agricultural Landscapes* (indicators – landscape elements, plant diversity)
6.4.-6.15. Rare and Engaged Plant Communities (bogs, alvars, forests, meadows)* (indicators – plant diversity)
6.16.-6.40. Birds* (indicators – wildlife habitats)
6.24.-6.28. Rare Plant Species* (indicators – wildlife habitats)
6.45. Soil’s biota* (indicators – earthworms, soil micro-organisms, Collembola, Carabidae)
Data from 6 sub-programmes will be used. 5 sub-programmes will be used as direct data source.

2. Organisation

The National Environmental Monitoring Programme (NEMP) was launched in 1994. As the Ministry of Environment is a general co-ordinator of the programme, the Estonian Environment Information Centre (EEIC) was a acting co-ordinator of state environmental monitoring since its beginning in 1994, the University of Tartu took over the functions in 1999. The Minister appoints the environmental monitoring board at the Ministry. Presently, it has four members and a chairperson. The board annually distributes financial resources to environmental monitoring projects in accordance with established national environmental monitoring programmes. Monitoring funds in the article of the national budget are 8,9 million EEK in 2001. NEMP involves 62 sub-programmes and -projects with more than 1600 monitoring stations all over Estonia. At the moment representatives of 16 organisations contribute to the monitoring programme as responsible executors. As data hosts they hold the relevant monitoring databases, keep quality controls and deliver primary information on the relevant monitoring programs and results. The copyright for the data is guaranteed an agreement between the ministry and the data hosts.
DATA FLOW CHART

Data sources

- NEMP with subcontractors
  - Direct data (♣) flow from subcontractors attached with a part of a contract
  - Analysed general data (*), available in public

- Direct subcontracts by CCPP
  - CCPP as a customer of a monitoring data

- Original data collected by CCPP

- Administrative institutions of MoA
  - Data flow is arranged by MoA

Data flow

- Converged data in CCPP
  - NEMP sub-programmes:
    - Coastal landscapes (indicators – landscape elements, plant diversity) ♣
    - Remote Sensing of Landscapes (indicators – landscape elements, plant diversity) ♣
    - Agricultural Landscapes (indicators – landscape elements, plant diversity) ♣
    - Rare and Engaged Plant Communities (indicators – plant diversity) ♣
    - Birds (indicators – wildlife habitats) ♣
    - Rare Plant Species (indicators – wildlife habitats) ♣
    - Soil’s biota (indicators – earthworms, soil micro-organisms, Collembola, Carabidae) ♣
    - Meteorological, Agrometeorological, Ground water monitoring, Pandivere Region Monitoring, Monitoring of small lakes (indicator – water quality), Hydrochemical and hydrobiological monitoring of rivers (indicator – water quality) ♣*
  - General indicators:
    - Hydrochemical monitoring in Lake Peipsi, Biological monitoring in Lake Peipsi, etc *
  - Environmental indicators:
    - Water quality (Ntot, Ptot, NO3 concentration, pesticides residues)
    - Landscape elements and natural wildlife habitats (no of ponds, trees, forest patches, length of hedgerows, etc)
    - Field margins (area of field margins under environmental management)
    - Plant diversity of seminatural habitats (plant species list, abundance of protected species, sampling plots)
    - Plant diversity of agricultural landscape (plant species list, sampling plots)
    - Earthworms (abundance, no of species, biomass), soil micro-organisms (abundance, no of species, biomass), Collembola (abundance, no of species), Carabidae (abundance, no of species)
  - General indicators
    - soil data (nutrient and organic matter content, pH, etc)

Data processing in CCPP

- Data is used for background information

Annual reports for the Ministry of Agriculture
REFERENCE AREA DATA

It is proposed by Phare ES9507 that reference data will be collected from the following 7 main areas

- North-Estonian plateau – Harju county
- West-Estonian lowland and archipelagos – Saare county
- Estonian Watershed – Lääne-Viru county (Pandivere upland)
- Võrtsjärve Basin – Viljandi county
- Pärnu Lowland – Pärnu county
- South-east Estonian plain – Tartu county
- South-east Estonian uplands – Võru county (Haanja upland)

To simplify data collection, reference areas could be based on administrative community borders. The final decision about which reference areas exactly will be used will made when the agri-environment measures are in operation and first feedback concerning the uptake is available. Reference areas should have a relatively high uptake of agri-environmental measures by farmers.