THE DETAILED TWINNING LIGHT PROJECT FICHE

1. BASIC INFORMATION

1.1. Désirée number: 2006/18111.05.01

1.2. Twinning number: EE06-IB-TWP-ESC-03

1.3. Project Title: Estimation of concentrations of radionuclides in Estonian ground waters and related health risks

1.4. Beneficiary:

Direct Beneficiary: Health Protection Inspectorate (HPI)

Other Beneficiaries: Radiation Protection Centre, Ministry of Social Affairs, Ministry of Environment, Association of Estonian Water Producers, Geological Survey of Estonia, Institute of Physics of University of Tartu, municipalities.

1.5. Sector: Health care

2. OBJECTIVES

2.1. Overall Objective: Minimisation of health risks caused by chemical substances in drinking waters.

2.2. Project purpose: Minimisation of health risks caused by radionuclides in Estonian drinking waters.

3. BACKGROUND AND JUSTIFICATION

3.1. Context in the beneficiary country

Ground waters in Estonia, due to geological reasons, contain a certain amount of natural radionuclides.

The Decree of the Minister of Social Affairs No. 82 from 31.07.2001 "Requirements for the quality and control of drinking water and analysis methods" defined the contents of radionuclides as parameters, which constitute a health risk. This was amended with the Decree of the Minister of Social Affairs No. 94 from 28.06.2002, which defined the parameter as an indicator. However, the exact extent of the problem is not clear.

Concentrations of such substances were analysed and reported occasionally by laboratories in Estonia and abroad, in the frames of different studies. Estonian Radiation Protection Centre is taking regular samples only from two survey points 2 times per year. Data from studies are available only as reports, compiled by OÜ Geoloogiakeskus (the Geological Survey of Estonia LLC).

The studies, which were carried out in 2001 and 2002, showed that the calculated total indicative doses of radionuclides in Cambrian-Vendian water bearing complex exceeded 2.7 times the indicator value of 0.1 mSv/year. Such water is consumed by 177 thousand people (14.7 % of the total population of Estonia). The data from other

water bearing complexes is rather limited. However, it is suggested that annual indicative doses from the water of Ordovician-Cambrian water bearing complexes might be even higher, as it is in contact with dictyonema shale.

3.2. Link with the acquis

- Directive 2006/118/EC of the European Parliament and of the Council of 12 December 2006 on the protection of groundwater against pollution and deterioration.
- Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.
- Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption.

3.3. Description of the Beneficiary institution

Health Protection Inspectorate (HPI) is a governmental institution supervised by Ministry of Social Affairs. HPI is responsible for surveillance of environmental health risk factors. HPI is a beneficiary in this project. For the time of the project, HPI will appoint a project manager. Specialists of Monitoring and Planning Department will be actively assisting in the project. More information is attainable on website http://www.tervisekaitse.ee/?mid=228.

3.4. Linked activities

In 1994-1998, EC initiated project "TENAWA" (Treatment Techniques for Removing Natural Radionuclides from Drinking Water). The workgroup included experts from Finland, Austria, Germany and Sweden. The purpose of the project was to find the most appropriate methods for decreasing indicative dose levels in water.

3.5. Proposed methodology

To estimate the health safety risks, it is important to obtain a full overview of concentrations of radionuclides in different water bearing complexes. Water samples should be taken also from taps of consumers.

To decrease the concentrations of radionuclides in water, several methods like aeration, ion exchange, reverse osmosis and manganese/iron removal can be used. However, the applicability of methods can be limited by their price and/or effectiveness in certain types of waters. It is essential to find the most appropriate method. As reported, the effectiveness of iron and manganese removal devices is to be tested in the first order.

The following questions should be answered during the project:

- What are the annual indicative doses from different water bearing complexes and consumers' taps in different locations?
- What is the number of people consuming the water of different effective dose levels?
- What are the health risks associated with these levels?
- What are the most suitable methods of water treatment for decreasing the indicative dose?
- What are the needed steps to ensure proper surveillance and safe levels of radioactive substances in water?

The obtained results should give a basis for Ministry of Social Affairs for establishing threshold levels and to work out recommendations and health protection measures for minimising the risk, and for the Ministry of Environment for organising surveillance activities and modernising laboratories.

Such activity is foreseen by Article 8 of the Water Framework Directive 2000/60/EC, concerning monitoring of groundwater status. Member States have to ensure the establishment of programmes for the monitoring of water status. Such programmes must cover monitoring of the chemical and quantitative status, and are carried out by the rules set in the Directive.

Annex II of the same directive foresees characterisation of the chemical composition of the groundwater, including specification of the contributions from human activity. Member States must carry out further characterisation of those groundwater bodies or groups of bodies which have been identified as being at risk in order to establish a more precise assessment of the significance of such risk and identification of any measures to be required

The impact of human activity on groundwater must be assessed for groundwater being at risk of failing to meet the objectives. The assessment includes geographical, physical, chemical and water consumption data for each groundwater body.

The Member State must ensure the establishment of a programme of measures, taking account of the results of the characterisations of the groundwater, in order to achieve improvement (Article 11).

As Estonia has no experience in assessing the risks related to the contents of radionuclides in drinking water, specialists from Radiation Protection Centre, Health Protection Inspectorate and other relevant institutions need guidelines and training. International expertise is sought to meet this demand.

4. DESCRIPTION OF THE ASSIGNMENT

4.1. Mandatory results

The Beneficiary Country and the Member State will jointly achieve the following mandatory results:

- Concentrations of radionuclides in Estonian ground waters and related health risks are known and recorded;
- The most appropriate method for removal of radionuclides from water found;
- Guidelines concerning surveillance methods, analysis methods and threshold safety levels have been developed.

4.2. Benchmarks

- Sampling and analyses of ground waters have been carried out and reported;
- Results of tests for removal of radionuclids have been published;
- Guidelines concerning surveillance methods, analysis methods and threshold safety levels have been published;

4.3. Activities

1. Reviewing of existing data and resources;
2. Compiling of sampling plan;
3. Analysing of concentrations of radionuclides;
4. Finding the most appropriate method for removal of radionuclides;
5. Working out guidelines concerning surveillance methods and analysis methods;
6. Working out recommendations for setting threshold levels and taking measures for minimising of health risks.

4.4. Expert input

Expert 1 (acting also as MS Project Leader; 20 working-days over 6 consecutive months)

Tasks:

- Overall co-ordination of the project.
- In co-operation with a pool of STEs, the MS Expert 1 will carry out the activities listed in Section 4.3 and explained in Section 3.5).

Pool of STEs (30 working-days over 6 consecutive months).

Tasks:

- In co-operation with Expert 1, the pool of STEs will carry out the activities listed in section 4.3 and explained in Section 3.5.

4.5. Contribution of the Beneficiary institution

HPI will be directly responsible for co-ordination and management of the project and will assist the project team in organizational and technical matters. Specialists of HPI will be actively assisting in the project. In addition, Health Protection Inspectorate will provide in-kind contribution: office and communication facilities for project experts. A laboratory will be selected and sub-contracted by the Beneficiary in order to carry out analyses of radionuclides.
The results will be achieved jointly with the MS Partner.

4.6. Sustainability

Health Protection Inspectorate, Radiation Protection Centre, Ministry of Social Affairs and Ministry of Environment have direct responsibilities of surveillance and preventing environmental health risk factors according to the law. The annual financing and staff qualifications of these institutions enable to solve organizational, technical and medical issues.

Concentrations of radionuclides in Estonian ground waters and related health risks will be recorded and the guidelines concerning surveillance methods, analysis methods and threshold safety levels have been developed, being a tool for routine work on day-to-day basis. The resources for this will be available from the state budget.

User manuals and guidelines will enable to carry out further training, if needed. This will ensure the continuity of users: it will be easy to involve new users.

5. EXPERTS PROFILE

5.1. Profile of experts

5.1.1. Profile of Expert 1 (acting also as MS Project Leader):

- Full university degree, preferably in life sciences;
- Working experience (>5 years) in the field of environmental health, chemistry or physics with experience in management and organisation of programmes related to environmental health, with specialist skills in implementing necessary changes in public administration and management;
- Experience in project management;
- Fluent English;
- Teamwork skills;
- Experience in newly acceded countries would be an advantage;
- Participation in TENAWA project would be an advantage;

5.1.2. Profile for experts in Pool of STEs

- Full university degree (preferably in physics, chemistry or environmental disciplines);
- Proven practical experience (>5 years) in working in the fields related to water technology and management;
- Good communication and teamwork skills;
- Fluent English;
- Experience in newly acceded countries would be an advantage;
- Participation in TENAWA project would be an advantage;

5.2. Working language

The working language is English, but the guidelines concerning surveillance methods, analysis methods and threshold safety level must be translated into Estonian.

Financing in the amount of 3 000 EUR has been foreseen for the translation of materials and interpretation, if necessary.

6. INSTITUTIONAL FRAMEWORK

6.1. Beneficiaries

6.1.1. Direct Beneficiary

Health Protection Inspectorate (http://www.tervisekaitse.ee/?mid=228) is a governmental institution responsible for surveillance of waters intended for human consumption.

6.1.2. Final Beneficiaries

Ministry of Environment (http://www.envir.ee/?set_lang_id=2) is a governmental institution responsible for surveillance and monitoring of ground waters.

Radiation Protection Centre (http://www.envir.ee/kiirgus/eng/) is a governmental institution supervised by Ministry of Environment responsible for surveillance of radioactive compounds in environment.

Association of Estonian Water Producers is a NGO, which is co-ordinating the activities of Estonian water producers. Geological Survey of Estonia is a state-owned company, responsible for the survey of ground waters.

Institute of Physics of University of Tartu (http://www.fi.tartu.ee/) is a public institution, having competence in estimating the radioactivity levels radiation doses and risks in nature.

Municipalities are public institutions, responsible for organising water supply for population.

6.1.3. The Project Leader (PL) and contact for the project:

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6.1.4. The Programme Officer (PO) of the project:

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Fax: +372 699 2209
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6.1.5. Project management (incl. day-to-day project manager for the project):

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6.2. Co-ordination mechanisms between institutions and departments

HPI will be directly responsible for co-ordination and management of the project and will assist the project team in organizational and technical matters.

A Steering Committee will be established by the beginning of the project to oversee the project implementation and make the key strategic decisions concerning the project. The SC will meet once in a quarter of more often if necessary and the following institutions will be represented in the Steering Committee: Ministry of Social Affairs, Health Protection Inspectorate, Ministry of Finance, Ministry of Environment, Radiation Protection Centre, Association of Estonian Water Producers and Association of Estonian Local Governments, University of Tartu.

The everyday work is organised by continuous contacts by project parties.

6.3. Administrative Office

The Central Finance and Contracting Department (CFCD) in the Ministry of Finance (*Suur-Ameerika 1, Tallinn 15006, Estonia)* is the Contracting Authority of current project and will be responsible for tendering, contracting and payments.

7. LOCATION AND DURATION

7.1. Foreseen start of project activities

January 2009

7.2. Project duration

6 months

7.3. Schedule and number of days for the assignment per expert

Expert 1 - 20 working days; Pool of STEs - 30 working days

Project activities and their estimated schedule:

January 2009:

- Reviewing of existing data and resources (activity 1);
- Compiling of sampling plan (activity 2);

February- May 2009:

- Analysing of concentrations of radionuclides (activity 3);
- Finding the most appropriate method for removal of radionuclides (activity 4);

April-June 2009:

- Working out guidelines concerning surveillance methods and analysis methods (activity 5);
- Working out recommendations for setting threshold levels and taking measures for minimising of health risks (activity 6).

Detailed time-schedule will be agreed by the project partners and reported in the Inception Report.

7.4. Location of assignment

The project activities in Tallinn will take place in Health Protection Inspectorate, Paldiski mnt. 81, 10617 Tallinn.

8. REPORTING AND MONITORING

8.1. Content, language, format and number of reports

Two reports have to be compiled during the execution of the assignment: inception report and final report.

During the first month of the assignment **an inception report** must be compiled defining the working programme covering main working steps and the activity schedule as well as inputs required from MS experts and BC authorities and expected results of implementation in close co-operation with the BC counterpart.

By the end of the project **a final report** must be compiled highlighting and assessing the achieved results of the project in retrospect. It accounts the project's activities, the results and outputs as compared to the Twinning Light Project Fiche, the recommendations to the beneficiary, the use of the project's resources. The final report includes in its appendix all the relevant documents produced during the project.

All reports shall consist of a content section and a financial section. Reports will reflect the Project Leader's opinion on the progress of the project and should also be based on and reflect the information provided by BC and other sources (i.e. short term

experts, organisation of training and seminars, etc.). Reports will be drafted by the MS PL (Expert 1) and will be first submitted to the counterpart BC Project Leader for comments (if any) and co-signature prior to formal submission to the designated authority (see below).

Reports are elaborated in English in 4 copies (a copy for BC PL, BC PO, MS PL and CFCD) following the provisions and requirement in the Twinning manual.

8.2. Date of submission of reports and approval process

Inception report will be submitted not later than one month after signing of the contract.

Final report will be submitted to CFCD not later than three months after the end of project activities (work plan).

All reports must have received an evaluation from the project's Steering Committee (SC). For this reason each report shall be submitted electronically in English to members of the project SC at least 1 week before the SC meeting. The report will be discussed at the SC meeting and approved or commented and approved conditionally. Considering that the comments of the SC have been taken into account MS PL (Expert 1) signs the report and sends it to the BC project leader for approval. BC project leader approves the report with its signature and returns one copy of the report to the MS PL (Expert 1). PO will submit the report to the CFCD for approval. Final version of the report is sent electronically to all SC members upon the signature of both project leaders.

The final financial report must be accompanied by an audit certificate from a recognized, independent auditor, following the template in Annex VI to the Twinning Light Contract.

The final report includes in its appendix all relevant documents (descriptions of methodologies, questionnaires, results of analysis etc) produced during the project.

8.3. Monitoring

A Steering Committee will be established by the beginning of the project to oversee the project implementation and make the key strategic decisions concerning the project. The SC will meet once in a quarter and the following institutions will be represented in the Steering Committee: Ministry of Social Affairs, Health Protection Inspectorate, Ministry of Finance, Ministry of Environment, Radiation Protection Centre, Association of Estonian Water Producers and Association of Estonian Local Governments, University of Tartu.

The responsibility for the organisation of the Project Steering Committee meeting lies with both Project Leaders.

The Steering Committee will be instituted in order:

- to take the key strategic decisions concerning the project;
- provide advice and guidance on issues raised by the project team;
- to review all project reports and work plans;

- to oversee the implementation and to analyse the effectiveness of the project.

Steering committee agenda and draft report are distributed electronically to the participants at least one week before the meeting. The SC meetings are recorded by the Estonian counterpart. The minutes are sent for approval to the Steering Committee members within 2 weeks after the meeting. Signed minutes by the BC and MS PL-s and recorder are included to the project reports.

The kick-off and project closing meeting will be held immediately before the beginning and immediately after ending of project activities.

9. BUDGET

9.1. Estimated budget

Budget item	Estonia (€)	TF (€)	Total (€)
Expert fees (1 person 350 EUR* per working day, 20 working-days; pool of experts 250 EUR* per working day, 30 working-days)		14 500,00	14 500,00
Project Management Costs (1,5 x total expert fees)		21 750,00	21 750,00
Experts per diems (181 EUR per day); 75 nights		13 575,00	13 575,00
International Transportation Costs (average return flight to Estonia 800 EUR); 20 flights		16 000,00	16 000,00
Translation, interpretation (contracted by MSP)		3 000,00	3 000,00
Analysis of samples	9 500,00		9 500,00
Other costs (seminar facilities etc)	1 000,00		1 000,00
Audit certificate		3 000,00	3 000,00
Provision for the changes in prices (2,5% of the total budget)		1 795,00	1 795,00
PROJECT TOTAL	**10 500,00**	**73 620,00**	**84 120,00**

* To be revised based on proposed experts and regulation in Twinning Manual art 5.4.

9.2. Co-financing arrangements

National parallel co-financing (state budget 2009):
1. Analysis of samples – 9 500 EUR (parallel co-financing). At least 70 results for single isotopes will be obtained.
2. Seminar facilities and other costs – 1 000 EUR (parallel co-financing);

The co-financing expenses will be monitored by the beneficiary and Ministry of Finance. For the earmarked co-finances, a clear and verifiable set of costs will be provided.

9.3. Subcontracting arrangements

A laboratory must be selected and sub-contracted in order to carry out analyses of radionuclides. Subcontracting of co-financing resources will be the responsibility of the Beneficiary.