

# Efficiency of the organisation of environmental monitoring

Audit Report No. OSIV-2-1.4/07/23 of May 18, 2007

## Summary

Environmental monitoring is necessary for providing information to the public and decision-makers so that they could plan their activities with due regard to environmental concerns. According to the European Environment Agency, 6–3% of all illnesses are caused by the polluted environment. Monitoring helps to identify the polluters and thereafter develop measures to reduce the pollution. Analysing of monitoring results enables to gain an overview of the environmental state, to establish links between different environmental indicators, to give judgements on larger areas by generalizing the results of individual measurements, and to predict future changes. The National Audit Office (hereinafter NAO) audited the activities of the Ministry of the Environment in organising the environmental monitoring.

Over the years, environmental monitoring has been carried out at more than 4000 monitoring sites, while more than 200 indicators have been measured. The Estonian Environment Information Centre assembles and discloses the results of environmental monitoring. In 2006, about 20 million EEK was spent on organising the environmental monitoring. In addition to state agencies, the environment is also monitored by enterprises and local governments. Whereas the local governments arrange monitoring on their own, the enterprises are given monitoring conditions by the County Environmental Departments of the Ministry of the Environment.

In order to organise monitoring in an optimal way, it is essential to consider carefully what information is necessary to assess the state of the environment, to work out measures for improving the environmental state and to evaluate the efficiency of these measures. As the users of monitoring results require different kinds of information, the results must be analysed and the data must be provided by taking into account the needs of different user groups. The lack of analysis is demonstrated by the fact that although according to the results of WHO model analysis, the pollution of ambient air with fine solid particulate matter causes up to 600 premature deaths in Estonia every year, the polluters are yet to be identified.

An overview of the environmental state has to be available to environmental officers, as well as to all citizens. For example, the floods in January 2005 would have had less severe consequences if the residential buildings could have been constructed with due regard to the information on potential rise in water level.

**In the opinion of the National Audit Office, the environmental monitoring is not well organised, as the public and decision-makers lack sufficient information on the state of the environment. The major shortcoming is that the organisation of state environmental monitoring is not based on an analysis as to which data is actually required to make decisions affecting the environment.** Thus it is not ensured that monitoring is carried out in most crucial areas and with sufficient thoroughness. Likewise, inadequate attention has been paid to analysing the optimality of the monitoring programme. Consequently, some important problems are not examined, some indicators are monitored in too many sites and too often, or in a duplicated way. As the monitoring results are subject to little analysis and difficult to access, they cannot be used to necessary extent in making environmental management decisions. Due to the shortcomings in environmental monitoring, there is no certainty that the rest of the expenditure on environmental programmes is used efficiently and that priority is given to major problems.

## Main observations

**There is no sufficient analysis as to what, where and how should be monitored.** The fact that the planning of environmental monitoring is not based on environmental problems also complicates the interpretation and use of its results. State environmental monitoring is mostly planned in the light of EU and other international commitments, while national needs have been neglected. For example, in recent years, the environmental impacts of urban sprawl, transport and several major industries have increased, but the need to adjust environmental monitoring accordingly has not been analysed. At the same time, some international commitments (e.g.

monitoring of long-range air pollution) are still not fully met.

**he state does not have a long-term plan for organising environmental monitoring.** So far, no monitoring programme has been prepared, which is required by the Environmental Monitoring Act. The Minister of the Environment approves the sub-programmes of state environmental monitoring, their budget and the persons responsible for their implementation newly every year according to applications. As environmental monitoring is not planned in longer perspective, the opportunities to organise the monitoring in a more optimal way are not taken, such as to monitor slow environmental changes at an interval of several years.

**The Environmental Register does not assemble all the necessary information.** Pursuant to the law, the purpose of the Environmental Register is to retain and process data on natural resources, natural heritage, the state of the environment and environmental factors, as well as to provide information. Currently, the environmental monitoring data is distributed between about 40 databases of various institutions. On the web-page of the Environmental Register, there are disclosed only the annual reports of environmental monitoring sub-programmes. These annual reports are very difficult to use, because the data is given in different forms and comparing the reports from different years is complicated. The most comprehensive overview of the environmental state is provided in the Environmental Reviews, which are published by the Estonian Environment Information Centre in every four years. At present, the Environment Information Centre has undertaken to improve the Environmental Register.

**The use of monitoring data collected in previous years is complicated.** Although environmental monitoring has been carried out for more than ten years, in most respects, no long-term databases have been generated. It is often difficult to use the available data gathered during the previous decade, because most of it is stored on paper or on electronic media which have become obsolete.

#### **Main recommendations to the Minister of the Environment**

- To determine the monitoring need (incl. problems, areas to be monitored) based on priority environmental fields and the factors affecting them, and by doing so, to take into account the needs of the users of monitoring results and involve the specialists of respective fields. This will ensure that environmental monitoring is kept up to date even in a rapidly changing economic situation and that crucial environmental problems are addressed first.
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- To prepare a long-term environmental monitoring programme by involving also the monitoring currently exercised by subordinate agencies, as well as the environmental monitoring activities of other ministries and local governments. Such an arrangement enables to decide more efficiently over the factors to be monitored in the environment, while it also raises society's confidence that problematic environmental fields are subject to data collection.
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- To find out, what environmental monitoring data and in which forms do the users of monitoring information require, and to take this into consideration in planning the monitoring, and in analysing and presenting the results.
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- To develop procedures for disclosing the environmental monitoring results, considering the needs of different users groups. For example, to create a two-tier database, which would provide the public with generalized data in the form of visualised maps and tables, while registered users (e.g. officials, scientists, interest groups) could also access primary data together with metadata. Careful consideration of disclosure procedures facilitates more efficient use of resources, since less time is spent on responding to enquiries.
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- To initiate amendments to the Environmental Monitoring Act in order to set new deadlines for entering the data into the Environmental Register and to require the submission of all data obtained in the course of environmental monitoring (incl. the monitoring activities of enterprises and local governments) to the Register. The inclusion of all environmental monitoring data into the Environmental Register is necessary for gaining a better overview of the state of the environment in different regions.
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- In addition to state environmental monitoring, to integrate also the environmental monitoring results of other ministries, local governments and enterprises into the Environmental Register and/or refer to them in the set of links in the Register. The consolidation of the environmental monitoring results of different institutions and levels enables to improve the consideration of the environment in decision-making and facilitates the national studies not only in the field of environmental monitoring but also in other fields.

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### **The reply of the Minister of the Environment**

The Minister of the Environment finds in his letter of reply that the National Environmental Monitoring Programme established for the year 2000 is valid up to now. The NAO regards this position as unreasoned, because the activities of the Programme are planned only for 2000 and likewise, the explanatory memorandum of the Programme indicates that it is prepared for the following year (which is the year 2000). The Minister of the Environment explains in his reply that during 2007–2008, he intends to amend the Environmental Monitoring Act and specify its requirements regarding the monitoring programme.

The Minister of the Environment is planning the preparation of a long-term (2007–2009) monitoring programme, which would integrate the monitoring coordinated by the Ministry of the Environment and its subordinate agencies, as well as the monitoring carried out by other ministries.

In the opinion of the Minister of the Environment, the organisation of environmental monitoring can be improved primarily by launching the monitoring by local governments, but he finds that the Ministry has limited capacity to organise such monitoring. In NAO's opinion, the Ministry of the Environment can influence the organisation of environmental monitoring in local governments by involving the municipalities into the determination of monitoring needs in the course of preparing the long-term monitoring programme.

The Ministry of the Environment assures that the Environment Information Centre will continue to clarify the needs of environmental monitoring and has already started to improve monitoring outputs (a possibility to submit enquiries in the monitoring web, graphs, disclosure of regional results etc.) in order to improve the availability of environmental information.

Although the NAO had several meetings with the representatives of the Ministry of the Environment during the audit, the Minister provided new information in his letter of reply, according to which the NAO adjusted the final audit report in some respects.

[Full text of the audit report \(pdf\)](#)

Tarmo Olgo  
Director of Audit  
Audit Department IV