Maintenance and development of information systems in area of government of Ministry of the Environment

Does the existing environmental information allow decision-makers to make the right choices?

Report of the National Audit Office to the Riigikogu, Tallinn, 4 November 2013

Summary of audit results

The purpose of this audit was to assess whether the information systems in the area of government of the Ministry of the Environment (and their development) support the reliable, economical and sustainable collection and use of environmental information.

On a broader scale the National Audit Office looked at all of the 42 environmental information systems created in the area of government of the Ministry of Environment, but focussed in greater detail on four of them: the Environmental Register, the Estonian Nature Information System, the Environmental Permits Information System and the Land Cadastre.

The reliability of information is important from many aspects. Accurate information makes it possible to make the right decisions that do not need to be changed later on. The reasonable structure of information systems reduces the administrative burden in data collection and there is less need for additional research. *Ca* 2 million euros is spent on IT (i.e. IT development and operating costs) in the area of government of the Ministry of the Environment every year.

The audit revealed that the correctness and reliability of the environmental data was guaranteed to a considerable extent. The exception here is the Environmental Register, which contains considerably more errors than the others. Although this is the main register in the Ministry of the Environment and should be the most reliable, it has not been funded or developed accordingly. The Ministry has still not made a decision about the future of this register.

The most important observations made in the audit are as follows:

■ The existing information systems are rather exhaustively used for reporting on the achievement of strategic goals. Similar to many other areas, a number of indicators have also been established for the assessment of the development of the area of the environment. In an information society, it should be natural that the information needed in everyday management is taken from existing databases whenever possible. The analyses carried out in the course of the audit indicate that this is generally the case in the Ministry of the Environment, i.e. information systems were relied upon in relation to indicators where it was possible. However, the Ministry has not analysed the options of the databases and information systems sufficiently in order to establish measures for the assessment of the longer development of the area of environment.

■ The present structure of the databases makes it possible for data errors to occur and causes unnecessary time loss for data processors. This problem is greatest in the Environmental Register, which largely reflects the data of the other databases. Errors occur when data are transferred (usually due to technical reasons) and additional checks cannot find all of these cases. This means that unlike the initial idea, the creation of the separate Environmental Register has not created reliable data with a legal meaning, but has instead reduced reliability. In terms of the usability of

data, there are other problematic information systems as well. For example, initiating a procedure in the Land Cadastre or the Environmental Permits Information System is still only possible with the support of paper documents However, it is positive that paper is no longer used for the exchange of the data in information systems. The Environmental Permits Information System contains information that is valuable for analysing the area and reacting adequately to many environmental problems, but the structure of the information system basically makes it impossible to obtain a quick overview of the necessary data. The use of map applications in several information systems also causes problems: different information is often given when the same objects are displayed and it is basically impossible for the user to decide which information to trust.

■ Environmental information is usually available to the public. In the course of the audit we investigated how easy it is for the people of Estonia to obtain information about the environment in their place of residence (e.g. the quality of ambient air and drinking water and restrictions concerning the plot of the residential building). Such information does exist and it is also accessible, but only when it comes to larger cities, as this information is simply not collected elsewhere. Finding information takes a remarkably long time (3.5 hours per object on average) and if standards have been established for environmental indicators, people often have to do more research to find out what these standards are.

■ Duplication of data collection has generally been avoided in the development of information systems, but not enough attention has been given to the sustainability of these systems. The Ministry of the Environment has tried to streamline the structure of the area of government, incl. the logic of information systems, in recent years. Several agencies have been merged, the Information Technology Centre of the Ministry of the Environment was created and the Ministry also has an Informatics Committee. Several projects initiated to make the use of data more efficient are pending. There is no doubt that all of this has its role, so positives can be seen in many aspects. For example, data collection is generally not duplicated and this principle is also followed when new development work is financed. The National Audit Office has found that procurements have also been carried out correctly, although in the case of the systems that have been in the hands of just one developer for years (the Land Cadastre and the Estonian Nature Information System), the Ministry should more thoroughly consider the risks of the developer pulling out. It is also a problem that the information security requirements that became mandatory years ago have not been met in the case of most information systems. Also, sustainability has not been assessed in the audited years, i.e. project applications do not generally indicate what the future expenses of the developed information system are and how they will be covered.

Key recommendations made during audit:

■ Analyse the kind of information that is needed most and by whom, and develop information systems on the basis of this. This would help make better investment decisions and could also lead to the more efficient use of existing data (determination of activity indicators and use of data in Environmental Permits Information System).

■ Forwarding data (e.g. map data) via several channels should be avoided. If the decision is made to use the application of the Land Board, for example, to forward certain types of data, this should remain the only view presented by the state.

■ The fate of the Environmental Register should be decided as soon as possible. All circumstances considered, the register is probably not viable in its present format. However, the liquidation of the Environmental Register should not leave an unfilled gap, but a portal could be created instead via which people can access the necessary data depending on their user rights.

Response of Minister of Environment:

The Ministry of the Environment generally agreed with most of the recommendations, but considered it necessary to emphasise that unnecessary data are not collected, because their composition is determined by legislation, development plans and other documents. The Minister said that many conceptual changes have been initiated to improve the situation. The creation of the Environmental Agency and the Information Technology Centre of the Ministry of the Environment should help guarantee the more purposeful use of environmental data. The planned next step is to streamline the data collection process and determine the structural units responsible for data collection. Analysis of a more logical structure of the Environmental Register has already started.

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