riigikontroll
National Audit Office of Estonia

Activities of the state upon protecting groundwater

Has the status of groundwater improved as a result of the activities of the Ministry of Climate?

Report of the National Audit Office to
the Riigikogu
Tallinn, 3 July 2026

Summary of audit results

The health of people and ecosystems depend directly on the purity of groundwater. Drinking water with high nitrate content poses a health risk, and in ecosystems, pollution disrupts the natural balance and damages biodiversity.

Groundwater nitrate pollution has increased in Estonia. Very high nitrate concentrations have been detected in new drinking water wells built by local residents, and national groundwater monitoring in Nitrate Vulnerable Zone also indicates an increase in pollution.

At the same time, the Ministry of Climate´s official assessment of groundwater status may present a more favourable picture than the reality. This is because the monitoring network is inadequate, not all available data are used, and samples are mostly taken at times when pollution levels are lower and from locations that do not reflect agricultural pollution. Therefore, there is no certainty about the true condition of Estonia's groundwater. Estonia will not be able to fulfil its commitment to the European Commission to achieve good status for all groundwater bodies by 2027. In the worst-case scenario, this could result in infringement proceedings and financial penalties.

Main observations

The Ministry of Climate has not ensured that water protection regulations and monitoring prevent groundwater pollution. The measures set out in the water management plan and the provisions of the Water Act are insufficient to protect groundwater. Current regulations on the fertilisation of fields allow nutrients to leach into both groundwater and surface water. One reason is that the permitted amount of fertiliser is based on the planned crop yield. If the actual yield is lower, part of the fertiliser may remain unused by plants and subsequently leach into the environment. There is no verification of whether the planned yield is realistic , nor are there measures to address situations where the actual yield falls short of expectations. It is permitted to spread manure at the time of year when leaching is at its highest – in autumn and on fields without vegetation cover. No limits have been established for nutrient leaching, and the Environmental Board has not been tasked with assessing this as part of its supervisory duties. Although water management plans do set out various measures to protect groundwater, the Ministry of Climate has not assessed whether these measures are actually effective.

A water management plan is a document provided for in the Water Act which sets out the objectives for the good status of surface water and groundwater, and the measures required to achieve them.

Source: *Water Act*, Section 43

The principles governing the assessment of the status of groundwater bodies, for which the Ministry of Climate is responsible, allow the status of groundwater to be assessed on the basis of insufficient data and may therefore present results that are more favourable than the actual situation. Consequently, there

is no certainty about the true condition of Estonia's groundwater. In planning the groundwater monitoring network, the Ministry of Climate has not taken agricultural pollution into account: samples are largely taken from locations that do not, and cannot, indicate agricultural pollution. Data for certain indicators (such as the status of surface waters) are entirely lacking, yet this does not prevent the Ministry of Climate from classifying the status of groundwater as good.

Although the Ministry of Regional Affairs and Agriculture is required to ensure, when allocating the agricultural subsidies received from the European Union, that pollution pressure is reduced and water quality improves, the Ministry is unable to say what impact the 366 million euros paid out in the most recent period has had on water protection. The Ministry has not assessed whether these support measures have achieved the intended results in protecting groundwater. Agriculture is the largest source of groundwater pollution. Therefore, particular attention should be paid to nutrient leaching resulting from agricultural practices, as this would make it possible to assess the impact of the support measures being implemented. The Ministry of Regional Affairs and Agriculture does not systematically carry out land drainage monitoring to determine the levels of pollutants leaching from fields. Furthermore, the Ministry still has no overview of how much, where and what types of agricultural chemicals and manure are being used. Therefore, there is a risk that the Ministry of Regional Affairs and Agriculture will also plan the next funding period without knowing which support measures and to what extent will, in practice, ensure the protection of groundwater.

Did you know that...

the limit set by the European Union for the nitrate concentration of groundwater is 50 mg/l. This is primarily intended to prevent acute health effects. According to Danish researchers, however, adverse health effects may occur even when drinking water contains nitrate concentrations several times lower than this limit.

There are regions in Estonia where the nitrate content in groundwater has reached 150 mg/l.

Source: Environmental Monitoring Database (KESE)

Recommendations of the National Audit Office

Recommendations of the National Audit Office to the Minister of Infrastructure:

- set clear and measurable targets at national level to reduce the leaching of nutrients (nitrogen and phosphorus) into groundwater, and implement measures to help achieve these targets;
- expand the groundwater body monitoring network particularly in areas where the risk of pollution from agriculture is higher; include springs in the monitoring programme; use all monitoring samples from nitrate vulnerable zones when assessing the status of groundwater bodies; and adapt the assessment methodology in such a way that, amongst other things, groundwater status cannot be classified as ‘good’ where data on its status are in fact lacking;
- amend the fertilisation regulations so that they are not based solely on planned yields, but take into account potential variations in yield and the risk of nutrient leaching, and provide for solutions in situations where the planned yield is not achieved.

Response of the Minister of Infrastructure:

- the Ministry of Climate considers it important that the targets for reducing nutrient loads, and the measures planned to achieve them, are based on the best possible understanding of the status of water bodies, the main sources of pressure and the necessary extent of pressure reduction. When water management plans are prepared, the impact of various sectors on the aquatic environment is regularly assessed and measures are planned to address the environmental problems identified. These measures generally contribute to the achievement of several environmental objectives at once, including the reduction of nutrient pollution. The Ministry of Climate is participating in the development of a toolkit by the European Commission and the Joint Research Centre to support Member States in assessing the need to reduce nutrient pollution in order to achieve good status in water bodies. The plan is to use the results in the planning and prioritisation of measures under water management plans and other relevant action plans.
- The groundwater body monitoring network will be revised to ensure more reliable assessments of the status of groundwater bodies and a more accurate characterisation of sources of pollution (including agricultural activity as a source of pollution).
- As part of the "Nitrate Vulnerable Zone Roadmap 2028" measure under the Action Plan for Nitrate Vulnerable Zones 2025–2028, the Ministry of Climate intends to review the water protection requirements for agriculture, including those relating to fertiliser use and associated restrictions. A substantive and socio-economic analysis of the measures is currently underway, during which the effectiveness of existing requirements is being assessed, along with possible solutions for reducing nutrient pollution from agriculture, including the appropriateness of fertilisation requirements, considering different yield conditions and the risks of nutrient leaching. Based on the results of the analysis, the necessary amendments will be proposed, and a draft amendment to the Water Act will be prepared to implement them, in accordance with the timetable agreed in the Action Plan for Nitrate Vulnerable Zones.

Recommendation of the National Audit Office to the Minister of Regional Affairs and Agriculture: ensure that the impact of agricultural subsidies on the status of groundwater is assessed.

Response of the Minister of Regional Affairs and Agriculture: preparations for the European Union's new financial period, 2028–2034, are underway, and as part of this process, measures contributing to water protection are also being analysed. When designing support measures, we consistently draw on public data, scientific research, expert opinions and the results of monitoring and assessment.

At the same time, it should be borne in mind that it is very difficult to establish a direct link between the impact of any specific activity or measure and an improvement in water status, as water quality is influenced simultaneously by a number of factors, including changing weather conditions, activities taking place within the catchment area of a water body, soil characteristics, hydrological processes, and so on. One of the objectives of support measures is to encourage farmers to adopt environmentally friendly practices. The measures are implemented over several consecutive years and their impact often becomes evident only over a longer period.