Sustainability of measures for rehabilitating land improvement systems

Are measures for rehabilitating land improvement systems sustainable and do they consider environmental protection needs?

Summary of the audit results

The National Audit Office analysed how the Ministry of Rural Affairs has planned the rehabilitation of land improvement systems and how successfully in cooperation with the Agricultural Board have landowners been directed to rehabilitate land improvement systems. In addition, it was analysed whether the Agricultural Board is maintaining the large jointly used recipients of land improvement systems in the planned volume and whether it is ensured in cooperation with the Environmental Board that land improvement does not damage water bodies or protected values of protected areas.

Water recipient – water conduit or a section of a natural water body through which excess water from a drainage network is transferred to a collecting ditch and from there to a watercourse or vice versa. As at 2018, there are 24,928 km of artificial recipients.

Why is this important to taxpayers?

Land improvement affects nearly 100,000 land users and is closely related to the overall development of food production and forestry. More than half of Estonian agricultural land is drained to prevent excessive moisture. There are land improvement systems on 1.3 million ha of land, of which 0.6 million ha is agricultural land and 0.7 million ha is forest land. The majority of land improvement systems were built in 1960–1980, and their estimated service life (30–50 years) is running out.

Land improvement is necessary to ensure the productivity of agricultural lands, but at the same time, agricultural pollution reaches water bodies, incl. the Baltic Sea, through land improvement systems. It is therefore important to prevent or reduce negative environmental impact when rehabilitating land improvement systems and during the operation thereof.

According to the Rural Development Plan, land improvement is supported with 96 million euros in 2007–2020. In addition, the Agricultural Board has received nearly one million euros per year from the state budget for the management of jointly used recipients. Forest land improvement and the construction of related forest roads in state forest is handled by the State Forest Management Centre, and it costs about 20 million euros a year. Forest land improvement projects of private forest owners are supported by the Estonian Private Forest Centre, whose 2020 budget for this is 250,000 euros.

What did we find and conclude from the results of the audit?

Land improvement subsidies play an important role in maintaining the cultivation value of agricultural land because old land improvement systems are not being rehabilitated without support. The terms and conditions for receiving support established by the Ministry of Rural Affairs, however, do not presently allow prioritising support to those lands where better productivity could be achieved with less support money. Drainage is supported on equal grounds also on soils where drainage and cultivation leads to greenhouse gas emission.

So far, too little attention has been given to the protection of water bodies and groundwater in rehabilitating land improvement systems because information on how much fertilizer is being used and how many nutrients reach water bodies through land improvement systems is lacking. Investments in environmental protection facilities aimed at reducing pollution have been

modest. Land improvement systems rehabilitated with the help of support may therefore not fulfil their environmental protection functions.

Detailed observations of the National Audit Office are as follows:

The Ministry of Rural Affairs has not set long-term goals to support the management and reconstruction of land improvement systems. Land improvement subsidies are planned according to the European Union support distribution cycle, but there is no comprehensive plan covering all the land improvement systems establishing to which extent and within how long of a period the systems need to be rehabilitated and how much it will cost. Rehabilitating all the land improvement systems ever established would require an unrealistically large amount of money.

The conditions of land improvement subsidy are the same for all types of soil, irrespective of their cultivation value. Rehabilitation of systems is supported on equal grounds also on fields where soil fertility decreases in the course of farming and where greenhouse gas emissions are generated or where the land improvement system does not effectively drain due to the characteristics of soil or becomes clogged quickly.

Pollution from agriculture reaches water bodies and groundwater through land improvement systems. However, neither the Ministry of Rural Affairs nor the Agricultural Board assess the environmental impact of pollution in the course of land improvement monitoring, and it is therefore not possible to plan environmental facilities that reduce pollution more effectively in land improvement systems. Data on the environmental impact of land improvement is not being collected in the course of land improvement monitoring, so there is no accurate information on which areas and sources the diffuse pollution of agriculture originates from, under which conditions more nutrients are leached from the field, and whether the sediment basins, treatment areas and wetland treatment systems built to date can adequately capture sediments and nutrients. So far, digital agricultural accounting, which could be used to support a better aquatic environment protection, has also not been implemented.

The information on diffuse pollution currently available to the Ministry of the Environment is therefore largely based on models and indirect source data, and they have underestimated the pollution from agriculture that reaches water bodies through land improvement systems in the state's water management plan.

There are few land improvement associations of landowners and many of these are not active. Many artificial recipients of land improvement systems are therefore not rehabilitated. Land improvement systems are rehabilitated with the help of support where farmers and the community are active. At present, land improvement associations have been established for the management of an average of only 20% of agricultural land and the number is declining even further. Associations are established mostly only to apply for support for rehabilitation of the land improvement system and once the project is complete, their interest disappears and it is not sure that the maintenance of recipients continues. Supervision of land improvement by the Agricultural Board addresses systems that have not been maintained only once they start to cause issues to the neighbours (flooding, dangerous facilities).

The Agricultural Board is unable to maintain or improve the drainage conditions of excess water in larger jointly used recipients to the planned extent. Although the poor condition of jointly used recipients managed by the state is known and the state has committed to renewing the jointly used recipients on average every 13 years, there is not enough money to do the work to the required extent. An estimated 4 million euros a year would be needed, but a total of 4.4 million euros has been received in three years (2016–2018). Although more money has been received than before, the volume of work has not grown in the same rate because the price of work has increased.

It is not guaranteed that protected values are not damaged in the protected areas during the reconstruction or renewal of land improvement systems because the risk to protected values

arising from land improvement works and operation of systems is not assessed in sufficient detail. Mitigation of negative environmental impact may therefore be inadequate. The processing of the projects of the Agricultural Board and the Ministry of the Environment has not always guaranteed that potential risks to protected values arising from the reconstruction of the land improvement system and the subsequent operation thereof are thoroughly assessed in the course of environmental impact assessment or with the help of an expert assessment. As such, there is risk that protected values may be damaged.

The National Audit Office is recommending the Minister of Rural Affairs to set a goal for how many land improvement systems need to be renewed or renovated in the end and to assess how much time and money it will take. To amend the principles of paying support based on the environmental impact to be caused and the increase of the cultivation value of the land. To assess the environmental impact in the course of land improvement monitoring, determine the pollution load affecting the aquatic environment through land improvement systems, and also analyse the efficiency of the operation of environmental facilities of land improvement systems in Estonian conditions.

The National Audit Office is recommending the Director General of the Agricultural Board to pay more attention to inspecting those landowners who do not properly maintain their land improvement systems. Upon handling renewal or renovation projects for land improvement systems, more attention needs to be given to reducing negative environmental impact and preventing water pollution spreading through land improvement systems.

The National Audit Office is recommending the Minister of the Environment to assess the risk of agricultural pollution reaching water bodies through land improvement systems more accurately when updating water management plans and to take this into account when developing water protection measures.

The National Audit Office is recommending the Director General of the Environmental Board to pay more substantive attention to the potential impact of rehabilitating land improvement systems on the values of protected areas when approving project plans and to identify with surveys opportunities for protecting protected species associated particularly with aquatic habitats as well as their habitats more effectively.

Response of the auditees: The auditees agreed with the majority of recommendations concerning environmental impacts, incl. the Ministry of Rural Affairs is planning to analyse the efficiency of the operation of environmental facilities and to supplement the circumstances studied in the course of land improvement monitoring. According to the Ministry of Rural Affairs, however, it is not possible to estimate how much time and money it will take to renew and renovate land improvement systems in the undertaken extent. The Ministry also does not consider it to be justified to differentiate between land improvement subsidies based on the cultivation value of land.