

Progress Evaluation of the Implementation of 2014- 2020 Environmental Protection Measures

Summary

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Evaluation was carried out by JSC „ESTEP Vilnius“ and The Center for Environmental Policy under the service contract signed with the Ministry of Environment of the Republic of Lithuania.

OBJECTIVE AND EVALUATION METHODOLOGY

The aim of the progress evaluation of the implementation of 2014-2020 environmental protection measures was to improve the implementation of environmental protection measures under Priority Axis 5 “Environment, sustainable use of natural resources and adaptation to climate change” of the Operational Programme for EU Structural Funds Investments. To achieve this aim, first of all, it was analyzed what results were achieved when implementing similar measures in the 2017-2013 programming period, what was the impact on environment achieved by measures of the 2017-2013 programming period and sustainability of the results, what are main lessons to learn from EU investments planning in 2017-2013 in order to improve the implementation of environmental measures planned for 2014-2020 and to better plan new interventions in the 2021–2027 programming period. Moreover, the progress of environmental protection measures financed under Priority Axis 5 were assessed, main challenges named, and forecasts of investment efficiency were provided.

The object of this evaluation was to assess nine measures of the 2017-2013 and twelve measures of the OP for EU Structural Funds Investments in 2014-2020. According to the content of interventions, all measures were grouped into six thematic areas: biodiversity and landscape protection, adaptation to climate change, improvement of ground and surface water resources, reducing of air pollution, management of contaminated sites and information to the public on environmental issues and improvement of infrastructure in environmental-recreational sites.

The object of the evaluation was analyzed by using the criteria of relevance, effectiveness, efficiency, impact and continuity (sustainability). For this evaluation, statistics and administrative data was also used, additional information was collected through interviews with representatives of responsible authorities, projects promoters and other involved parties. Assessment of the cost effectiveness or cost-benefit analysis, made for some projects already implemented or under implementation was carried out, as well as cost-benefit analysis of ongoing environmental measures was carried out by using evaluation of ecosystem services approach.

Cost-benefit analysis

When planning EU-funded projects for the programming period 2014-2020, economic (cost-benefit) analyses were carried out only for a relatively small number of these projects – mainly those related to protected areas, park management, reduction of air pollution, and protection against flooding. The analyses followed the usual recommendations for financial and economic analysis, however, monetary or qualitative valuation of potential improvement/degradation of the services provided by ecosystems after the implementation of the measures was not included.

In addition to various resources, natural ecosystems provide us with basic life-support services, such as biological treatment of air and water resources, decomposition of waste, climate regulation, soil remediation, maintenance of biodiversity, etc. Also, ecosystems provide cultural services – intangible benefits resulting from interaction with nature, spiritual experiences, the desire for future generations to enjoy nature, etc. Such benefits obtained from ecosystem services are not the object of the market, i.e. there is no price that would signal to the public about changes (improvement or deterioration) in ecosystem services, therefore attempts have been made worldwide to identify and monitor ecosystem services both locally and globally as well as to take into account their value in decision making. Some ecosystem services and their benefits can be measured at market value, meanwhile others can only be valued on assumptions about surrogate markets. A significant number of ecosystem services can only be assessed using non-market-based methods. In Lithuania, only a few studies on non-market monetary valuation of ecosystem services have been carried out. The results of these studies were used, as far as possible, to assess the benefits of the environmental measures under analysis in this project. In most cases, however, there is no data for Lithuania, therefore the analysis was based on the

results of ecosystem services valuation performed in other countries both in Europe and worldwide. In practice, the annual benefits of all measures assessed for ecosystem services are higher than the annual costs of implementing these measures. This shows that investments in the environment are very important because the benefits they generate through the improvement of natural ecosystem services, i.e. people's well-being, are really significant.

KEY FINDINGS AND RECOMMENDATIONS

Protection of biodiversity and landscape

In 2007-2017, the total area of protected areas in Lithuania was consistently expanding. Also, a small increase in the country's forest coverage was observed and the assessment of the extent of land cover changes point to a stable trend. Estimates of the status of protected species and habitats of the European Community interest show that their conservation status is unfavourable and declining both within and outside their designated conservation areas. The results of the projects and local-level monitoring after the implementation of the project show that the applied nature management measures have proven successful and should be continued in the future. All measures in the field of biodiversity and landscape protection have a significant impact on improving the state of the Lithuanian environment.

For the future, it is recommended to set indicators to measure the scale and expected impact of the activities to be implemented at national level, and to improve the inventory of indicators for the purpose of identifying the impact of specific projects in the context of national changes. In order to assess the added value and/or impact of investment projects, it is recommended to introduce new result or impact indicators or to carry out thematic expert assessments. There is also a need for specific monitoring programmes (e.g. changes in vegetation communities, dynamics of populations of species, sufficiency of the nutrient base, etc.) on the basis of which the impact of a particular project can be assessed.

Investments of the measure in the development and installation of infrastructure and information systems for protected area visitors create preconditions for continuous nature awareness and environmental education activities in the country's protected areas, can make a significant contribution to raising public awareness, create preconditions for the development of nature tourism, however, continuity of the results and sustainability of the investments will only be ensured if the objects created are properly used and their maintenance is adequately funded in the future.

Investment instruments for the protection of biodiversity and landscape have been implemented on the basis of one strategic document, the 2015-2020 Action Plan for the Conservation of Landscape and Biodiversity (hereinafter referred to as the Action Plan). The Action Plan does not cover the EU Biodiversity Strategy to 2020 Target 3 'Increase the contribution of agriculture and forestry to biodiversity' and related actions. Given that the development of the agricultural and forestry sector is of great importance in terms of biodiversity and landscape protection, it is appropriate to provide for targets and measures to strengthen the representation of environmental interests in these sectors of the economy. The investment measures being implemented are coordinated with other financial mechanisms (such as EEA Norwegian Financial Mechanism, Rural Development Plan measures). Such synergy should be even closer. Overall, the funding of the measures under assessment is insufficient to fully implement the long-term strategic objectives of the Action Plan.

The cost-benefit analysis of the measures has shown that the annual benefits outweigh the annual costs. It is recommended to apply cost-benefit analyses to virtually all projects. The description of the costs and benefits (if only qualitative ones) would allow for better structuring the projects and presenting them to the public as well as enable the developers and implementers to better understand the environmental aspects of the project.

The ongoing projects include those that can be disseminated as good practice at the European level (e.g. programmes for the increase of populations of pond turtles and Bombinatoridae (fire-bellied toads)).

Landscape and biodiversity conservation action plans are characterized by a very wide range of long-term aspirations. Squeezing such broad and ambitious targets into a time-limited financial perspective poses a challenge to concentrate limited investment in key activities. In the future financial perspective, it is recommended to identify the priority areas where EU structural assistance investments would be shifted. Other objectives of the Action Plan could be achieved by promoting financial instruments.

A number of biodiversity conservation projects are intended for the protection of specific species and implementation of population growth programmes. It is recommended to base the planning of such projects on general criteria that would indicate the direction and arguments for selecting the priority species for investment.

Adaptation to climate change

Lithuanian scientists admit that the trends of increase in climate extremes are also observed in Lithuania. The Lithuanian coastal zone that is particularly sensitive to climate changes is the coastal strip or the riparian zone, which covers the entire Curonian Spit, the seashore and the sea coast. A preliminary flood risk assessment carried out in Lithuania 2011 identified 54 sections of various rivers prone to extreme flood events. Another challenge of climate change is urban flooding.

Most investment projects contribute to the improvement of environmental monitoring and control and of the status of the coastal zone, the reduction of flood risks and the achievement of surface water management objectives. The results of the projects implemented under all these measures are sustainable and long-term. Modernized laboratories and monitoring stations ensure the quality and reliability of monitoring data, which, in their turn, enable making right and perceptive decisions. Investments in strengthening environmental monitoring and control institutions increase the efficiency of institutions. Institution building projects should be carried out periodically due to staff turnover. On the other hand, there are projects under implementation which have no links to the strategic goals of climate change management.

The National Strategy for Climate Change Management Policy is the key strategic document of Lithuania in the field of climate change management, which conforms to the international commitments of Lithuania and implements the provisions and objectives of EU climate directives. The national strategic objectives for flood protection are formulated in the Water Sector Development Programme for 2017–2023. However, problems of urban flooding with surface runoff are not highlighted in the national strategic documents. The existing laws and strategic documents in the area of management and conservation of the coastal zone and in the field of environmental monitoring and control are also sufficient. It should be noted that the 2014-2020 Operational Programme has not provided for instruments for implementing the monitoring measures specified in the National Strategy for Sustainable Development (e.g. monitoring of landscape, biodiversity, sea shore dynamics, noise, protection of cultural values) and has failed to take into account the medium and long term goals set in the National Climate Change Management Strategy (namely, to monitor and investigate the most vulnerable sectors of the economy).

Indicators for the measures 'Flood Risk Management' and 'Management of Stormwater Sewers' are easy to evaluate, accurate and representative. Indicators for assessing the management of the coastal strip could be changed to the ones more suitable for assessing time-changing coastal environment. It is recommended that indicators should reflect the ratio between the coastal strip 'to be managed' and the one 'already managed' rather than be linked to the 'total length of the Lithuanian coastline'. Too few result indicators (only one) have been envisaged for the implementation of the measure 'Strengthening of Environmental Monitoring and Control', product indicators are unrepresentative. It is recommended that the choice of indicators reflects the added value generated.

In this thematic area, a cost-benefit analysis was carried out for the projects under the measure 'Flood Risk Management' and for the project on the development and expansion of the ICISEM (the Integrated Computerised Information System for Environmental Management). No cost-benefit or cost-

effectiveness analysis has been carried out for other projects. The development of these projects did not take into account potential improvement/degradation of potential ecosystem services and/or the impact on human health. Inclusion of at least qualitative assessment of the impact on ecosystem services (in particular of projects related to flood prevention and surface runoff management projects) at the stage of project development would provide a better understanding of the impact of the planned project and its links to environmental elements and could possibly lead to a choice of another alternative.

Projects under two measures in this thematic area (protection against flooding and surface runoff management) should also be assessed in the light of shortcomings typical of 'grey' investment projects. There is much talk, analysis and implementation worldwide of 'green' projects on flood mitigation and surface runoff management. Such projects have not been provided for in the 2014-2020 Operational Programme, however, they need to be planned.

A comparison of the annual benefits and annual costs of ecosystem services shows that the potential benefits outweigh the costs. Of course, the values of the benefits specified in Lithuanian and European studies and used in the calculation, especially those for ecosystem services, reflect different conditions that are not necessarily identical to the scope and extent of the measures discussed herein, yet such comparison and, particularly, qualitative description of the benefits, provide a better understanding of the benefits of ecosystem services to man and the whole society.

In order to reduce the potential future damage to floods, great attention should be paid to improving the legislative framework in order to ensure proper regulation of the development and construction in potential flood risk areas. The need for engineering protection measures against flooding must be minimized by limiting the expansion of settlements in the flood-prone areas and providing specific (related to flood resistance) requirements for buildings constructed in these areas.

Investments over the period 2014-2020 have been insufficient to solve the problems of surface runoff management. Increasing the competencies of designers and promoting provisions on the application of green measures to avoid the development of redundant engineering infrastructure should be the key non-investment instruments for more efficient surface runoff management. In addition, tax measures should be used to allow municipalities to increase the amount of funds collected for surface runoff management. In the future, it would be useful to further assess the risk of urban flooding caused by inadequate management of surface runoff in order to evaluate the need for and the impact of investment in the area of climate change adaptation.

The current budgets of environmental institutions are insufficient to acquire modern environmental monitoring instruments and improve information systems. The phasing out of EU support is likely to result in a gradual reduction in the volume and reliability of information on environmental status. The acquisition of costly analytical equipment or modelling systems will not be sustainable if the monitoring authorities do not have the resources to maintain qualified staff and if there is insufficient funding for operating costs. Management of the coastal strip is a strategic task of the Lithuanian state, therefore, in order to ensure long-term impact and sustainability of project results, it is necessary to provide annual state funding for the conservation of the coastal strip as a strategic Lithuanian object. When approving state projects and with a view to completing them in a timely and appropriate manner, it would be expedient to set up a consultative group consisting of representatives of the Ministry of Environment, the developers of the Coastal Strip Management Programme (experts) and representatives of the municipal administration responsible for project implementation. It would also be appropriate to invest in the restoration of the hydrological regime of drained peat lands. The restoration of wetlands in drained peat lands would allow reducing greenhouse gas emissions.

Improvement of ground and surface water resources

The analysis carried out showed that the implementation of the measure 'Identification of Water Protection and Management Measures' was effective and reached its goals. The results of the projects carried out under this measure allowed to objectively assess the situation in the area of protection and management of water resources, to identify shortcomings and problems, to formulate national water

protection priorities and goals, to define further actions, to lay the foundations for the 2014-2020 investment planning in the field of water resource improvement, thus it can be maintained that the results achieved are sustainable and long-term. The mechanism for implementing the measure 'Improving the Status of Water Bodies' has not been effective enough to ensure targeted use of funds for the improvement of the status of water bodies. The implementation of the measure in the form of regional planning and without strict and unambiguous implementation criteria in place resulted in leaving the applicants with plenty of room for independent selection of objects and instruments. Unfortunately, this did not always correspond to the national strategic objectives in the area of the improvement of the status of water bodies. The measures implemented have not had a significant impact on the status of water bodies because they were introduced locally, in a fragmented manner, lacking knowledge and without taking into account the needs of improving the status of water bodies.

All 2014-2020 investments in the area of water resources have been implemented through the selection of state projects. The inclusion of mandatory project requirements in the Project Funding Requirements has ensured that all activities and projects are in line with the strategic objectives and targets set in the Water Sector Development Programme for 2017-2023. Such implementation mechanism is effective, ensures targeted implementation of the necessary measures and allows avoiding problems encountered during the previous support period. One of the main problems identified during the assessment is part of the investment allocated for water resources is actually used for functions and activities that are not related to the protection of water resources (for example, the Lithuanian Armed Forces are planning to purchase a multifunctional oil pollution response and maritime rescue ship).

The system developed for monitoring the measures is representative, most of the indicators used meet the most important performance criteria: they are clear, directly reflect the desired result, and are usually measurable. It should be noted, however, that the result indicator R.S.326 'Average total nitrogen concentration in the Lithuanian territorial waters of the Baltic Sea' used in the Operational Programme to evaluate the result of the measure 'Management and Protection of Water Resources' correlates poorly with the objectives and results of the measure. It is therefore recommended to consider replacing it with a more general indicator that would represent the management of all water resources. A possible indicator would be 'Water bodies for which water protection objectives have been set and measures to achieve these objectives have been established, per cent'.

A simplified cost-benefit analysis, which used the results of water body assessment carried out in Lithuania, shows that the economic benefits of ecosystem services provided by good status water bodies generally exceed costs. However, cost-benefit analyses strongly depend on the way the benefits are assessed as well as on other assumptions. If studies of the assessment of ecosystem services in Lithuania were conducted, the cost-benefit analysis could be carried out in much more detail.

The sustainability and durability of status improvement measures being implemented are associated with a certain risk. The results of the measures depend very much not only on the scope and quality of the implementation, interaction with other interventions, but also on natural factors, so their impact is often difficult to predict. In order to reduce the risk of failing to achieve the desired result and increase the efficiency of the implemented measures, it is recommended in this investment period to prioritize the implementation of measures in those water bodies where interaction with other interventions is not necessary to achieve good status or where the implementation of other necessary interventions has already started or at least has been planned.

The planned investments will improve the status of water resources, however, the intended status improvement measures cover only a small number of the lakes at risk and straightened riverbeds, so it can be predicted that the number of water bodies at risk at the end of the period will still be quite high. It is therefore recommended in the next financial perspective to continue funding water resources status improvement measures. When planning EU investments in the improvement of the status of water resources, it is proposed to take into account the need for measures set out in the updated (third) river basin district management plans and programme of measures intended to achieve the marine environment protection objectives.

Reduction of air pollution

Currently, the main problem to be solved in the field of improvement of ambient air quality is the reduction of particulate matter emissions in the major cities of Lithuania. The main source of these emissions is road transport and its non-exhaust pollution.

The analysis showed that the measures being implemented contribute to the implementation of the environmental protection policy objectives set out in the National Environmental Protection Strategy in the field of air quality protection. The agreements already signed contribute to the improvement of air quality in the cities mentioned in the Strategy (Vilnius, Kaunas, Klaipėda, Šiauliai, Panevėžys), where the daily limit value of PM₁₀ is exceeded, however, information about more specific impacts of the implementation of the activities on the ambient air quality will be available only on the basis of data from longer-term environmental air quality studies.

For the implementation of the measure 'Improvement of Ambient Air Quality', the Action Programme uses three product indicators directly reflecting three implemented activities, and one result indicator fulfils the main performance criteria. The result indicator may not be justified if the exceedance of the PM₁₀ daily limit value is more affected by factors other than transport-induced non-exhaust pollution, i.e. meteorological conditions unfavourable for pollutant dispersion or other sources of pollution that are not related to the transport pollution.

Projects under the measure 'Improvement of Ambient Air Quality' did not require cost-benefit analysis, only cost-effectiveness was analysed. Thus, potential improvement/deterioration of ecosystem services and/or impacts on human health in the preparation of the projects were not taken into account. In addition, the CPMA Investment Projects Calculator does not include operating costs when selecting alternatives based on cost-effectiveness, therefore it is proposed to improve the Methodology for the Preparation of Investment Projects that Seek Funding from the EU Structural Funds and/or State Budget funds, as well as the corresponding Investment Project Calculator.

The assessment of costs and benefits of the measure in this study made use of a description of the effects of particulate matter on human health and the environment which is rather widely used in Europe and all over the world. The simplified cost-benefit analysis showed that the annual benefits of this measure largely outweigh its costs even if most of the related energy and transport sector investments, which partly contribute to the reduction of particulate matter emissions, are included in the costs.

At present, it is necessary to ensure the implementation of the measure in question as well as other measures supported under the 2014-2020 Operational Programme, such as the development of sustainable mobility plans, procurement of more environmentally friendly public transport vehicles, installation of electric vehicle charging stations, replacement of obsolete fossil fuel boilers with new more efficient bio-fuel ones or other renewable energy heat generation technologies, development of pedestrian and bicycle paths. In order to improve the air quality in the long term, it is necessary to continue public information campaigns in the next financing period as well as to ensure implementation of the measures provided for in the Plan of Implementation Measures for the National Air Pollution Reduction Plan at the national and municipal level, providing sources of financing. It is recommended to carry out an analysis of which other Lithuanian cities would benefit from purchasing street cleaning equipment and, from 2021 onwards, to include this activity in the list of supported activities.

Management of contaminated sites

In 2007-2013, the environmental impact of the measures was positive. The work carried out thus far included the development of the Inventory of Potentially Polluted Areas, preliminary risk assessment of contaminated sites, and the recording of the actual historic pollution. All the work was done by specialists and did not require municipal budget funds.

Although there are no strategic documents directly defining the directions and targets of the activities in this sector, the existence of potentially polluted areas has a significant impact on other areas

(groundwater, surface runoff, soil, etc.), which is therefore indirectly reflected in general strategic documents.

The role of the National Land Service, which manages the land on a fiduciary basis, i.e. performs the land owner's functions, is very formal in the process of implementing the measure. The impression is that the owner is not interested in the condition of the land plot and the processes taking place on it. On the other hand, the financing conditions of projects under the measure 'Management of Contaminated Sites' have not been agreed with the Ministry of Agriculture, which is the institution with jurisdiction over the National Land Service.

Most of the complaints voiced by the actors in the contaminated site management process concern the scope and estimate of the medium subject to remediation as specified in the remediation plans, because further study and supplementation of the remediation plan is required in case of deviations from the calculated scope. Such discrepancies are practically programmed in legislation and could easily be addressed by using the line 'other costs', which is included in the preliminary estimate of every remediation plan. There are no questions concerning the financing of the difference between the estimated and actual scopes in case of remediating contaminated sites with private funds. For projects managed by EPMA, this is a persistent problem if the scope of the medium to be remediated differs from the numbers given in the remediation plan. The 'other costs' included in the estimate for such case are considered ineligible costs and are required to be based on additional eco-geological studies and supplementation of the remediation plan. It is therefore proposed to clarify the part of the contaminated site remediation plan of the Ecogeological Survey Regulation so that it complies with the methodological requirements of LAND 9-2009 and possibilities of calculating and financing additional costs up to 20% of the planned potential remediation scope.

According to the data of the Lithuanian Geological Survey, despite the fact that the Lithuanian legal base of this sector is considered to be exemplary and perhaps the most well-managed in the EU, Lithuania was among those EU countries that have requested the smallest amount of funding (in absolute terms) for the remediation of contaminated sites. Current practice shows that almost every object requires additional funds due to the spread of pollution outside the area to be remediated due to changes in the pollution zone and the above-said ignoring of the 'other costs' line.

The result indicator chosen in the Operational Programme is the reduction of the number of 'Highly-risk Potentially Polluted Areas'. This indicator cannot be achieved because declaration of potentially polluted areas is a continuous process. It is a hardly predictable indicator, whose dynamics depends on industrial growth, geological-hydrogeological situation of industrial sites, environmental protection and compliance with technological requirements. The product's national indicator, the number of cleaned and remediated historically contaminated sites, reflects the dynamics of the potentially polluted areas remediation process, meets the policy objectives, is easy to understand, but has low representativity because the sites vary in size, depth of contamination, composition and concentrations of pollutants. The indicator is 'convenient' to declare achievements but not to achieve greater results. The general indicator of the measure is the total area of the remediated land, which reflects the decline in the area of contaminated sites, however, it is hardly perceived and compared with the total area of contaminated sites as it is unclear what area is contaminated before studies are carried out and the geographic range of contamination is established.

Municipal procedures for procuring services take an unreasonable amount of time, and there is a lack of specialists in municipalities able to prepare the conditions and requirements for procurement of remediation works in contaminated sites in a qualified manner. The pace of spending is slow and there is untapped potential to increase the number of projects. The measures applied are technically primitive and feeble, remediation is mainly proposed for sites contaminated with petroleum products, narrow range of applicable methods (excavation and removal), small selection of contractors, no experimental projects using new technologies (stabilization of pollutant migration, geo-membrane application, biological methods, etc.). In addition, there is a clear shortage of specialists in public institutions working with a database of contaminated sites and carrying out expert assessments.

A simplified cost-benefit analysis which uses the values of soil ecosystem services obtained in a number of European studies shows that the economic benefits of the remediation of contaminated

sites should outweigh the costs. The cost-benefit analysis strongly depends on the way the benefits are assessed. If studies were carried out in Lithuania into soil remediation costs and benefits, cost-benefit analysis could be carried out in much more detail, and the results would reflect the specific Lithuanian conditions.

Although the implementation of the measure ‘Remediation of Contaminated Sites’ will significantly increase the scope of contaminated site remediation (remediated historically contaminated sites in the financial period 2014-2020 will amount to 25-30% of the total number of areas managed), after 2014-2020 there will still be a large number of contaminated sites on the state land, which will not be subject to adequate remediation due to lack of state and municipal funds. Contaminated sites located on the state-owned land may be remediated only using state or municipal budget or EU funds.

The data provided in the EC Joint Research Centre report on the number of contaminated sites in Lithuania to be remediated in the future casts certain doubts which have not been cleared up by the JTC.

It can be maintained that after two or three decades remediation of historically contaminated sites will no longer make sense due to climate change, self-remediation and other processes. The question is, however, what damage will be done by the pollutant accumulation on the environment, groundwater and people, since this issue has not been studied and remains unknown. Therefore, in order to live in a clean and sustainable environment, it is necessary to increase the pace of remediation of contaminated sites and to use funds for this purpose from the next financial perspective.

Information to the public on environmental issues and improvement of infrastructure in environmental-recreational sites.

The state of the environment is particularly dependent on the behavior of the society, therefore various measures are used in this area: legal obligations for businesses and residents, economic measures (such as a one-off packaging system) and communication tools to raise public awareness in the field of environment protection and to promote an environmental culture. In Lithuania, measures aiming to raise public awareness on environmental issues are implemented already during the third EU programming period. The analysis carried out during this evaluation has shown that these measures have produced good results. From 2007 until 2014, part of Lithuanian population claiming to be well informed or quite well informed about the environment has increased by one and a half (from 38 to 61 percent) and has reached the EU average. However, raising public awareness on the environment issues is a continuous process, and proper implementation of awareness-raising activities, including sufficient funding, is an important prerequisite for effective environmental protection. In the 2014-2020 programming period, public awareness on the environment issues is funded under the measure 05.4.1-APVA-V-017 ‘Public awareness on the environment and improvement of infrastructure in environmental-recreational sites’. It is planned to allocate 8.38 million euros for this activity. The measure also finances one more activity - construction and renovation of environmental-recreational objects. The analysis of the implementation of this measure has showed that the intervention logic of the measure does not fully correspond to the goals and objectives for awareness-raising set out in the national strategic documents, in other words, the main goal shall not only be to inform the society about various environmental aspects, but also to change public opinion and behavior, to promote pro-environmental culture. The environmental awareness-raising activities carried out to date have mainly focused on the provision of knowledge about the environment. This approach matched the needs of the period as there was a large public awareness gap compared to the EU average. However, recent studies show that the society is already well informed about the environmental issues (more than 60 percent) and even 82 percent of respondents believe that their role in protecting the environment is important, but the behavioral indicators (especially for the sustainable use of resources) are still low. This is the reason why in the 2014-2020 period, during phase II of the communication, the task to inform the society shall be supplemented by the task of promoting pro-environmental behavior and sustainable consumption.

Awareness-raising activities implemented under the measure financed from the EU funds are based on public opinion surveys, and the most appropriate communication measures are selected for the

individual groups of society, but this is rather the form (amount of the information provided). In the meanwhile, to use EU funds efficiently, attention should be paid not only to the form but also to the content. The evaluation found that communication planning principles were only partially applied. In the applications of currently implemented information projects, target audiences are not clearly defined, priority communication topics are not specified, communication is not oriented to change public behavior (although this is foreseen in the Environment sector' publicity programme for 2014-2020), there is a lack of consistent monitoring of communication indicators. These aspects reduce the expected effectiveness of EU funds assigned for communication activities. On this basis, it is recommended to supplement the measure' "Public awareness on the environment and improvement of infrastructure in environmental-recreational sites" set of monitoring indicators with a new result indicator to monitor the changes of citizens' pro-environmental behavior, and to adjust the description of financing conditions for projects and selection criteria accordingly. For more effective communication, during the planning period for 2021-2027 it is recommended (1) to prepare a Programme for the information to Lithuanian residents on environmental issues and the promotion of environmentally friendly behavior (communication strategy) which shall establish the main strategic provisions in accordance with the basic principles of communication planning: goals, objectives, target audiences, resources allocated and monitoring indicators of communication efficiency (not only awareness level, but also changes in attitudes and behavior) and describe programme implementation; (2) for the implementation of the strategy, it is advised to prepare annual communication plans in which, according to actual context of environmental policy and the results of public opinion surveys, priority communication topics shall be identified, key messages to each target group set out, appropriate communication measures selected according to media consumption habits of individual target group, and annual communication efficiency indicators set.

More than 30 recommendations for improving environmental measures funded by EU Structural Funds Investments were provided in this evaluation report. Specific recommendations can be found in the last chapter of each thematic area 'Answers to evaluation questions and recommendations'.