BIGDATA 4RIVERS
Interreg Europe

Improving the European Rivers Water Quality through Smart Water Management Policies

Action Plan

Lithuania

ktu kaunas university of technology 1922

INDEX

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LIST OF ABBREVIATIONS

ABBREVIATIONS	
A	
AIMRD	Iberian Association of Riverside Municipalities of Duero River
B	
BIGDATA 4RIVERS	Improving the European Rivers Water Quality through Smart Water Management Policies
BSAP	Baltic Sea Action Plan
C	
CAB	The County Administrative Board of Östergötland
CIM Alto Minho	Intermunicipal Community of Alto Minho
D	
DC	Directive 2000/60/CE
E	
EPA	Environmental Protection Agency
ERDF	European Regional Development Funds
G	
GIS	Geographic information system
GP	Good Practice
I	
ICT	Information Communication Technology
J	
JAR	Joint Analytical Report
K	
KTU	Kaunas University of Technology

L	
LGS	Lithuanian Geological Survey
LHS	Lithuanian Hydro meteorological Service
LSG	Local Stakeholder Group
M	
MoE	Ministry of Environment
MAC	Maximum acceptable concentration
N	
NURE	The National Union of Romanian Entrepreneurs
OP	Operational Programme
P	
PAH	Polycyclic Aromatic Hydrocarbon
PFAS	Perfluoroalkyl and Polyfluoroalkyl Substances
PFOS	Perfluorooctane Sulfonate
R	
RBD	River Basin District
RBMP	River Basin Management Plan
RDFA	Regional Development Fund on Behalf of the Region of Attica
ROP	Regional Operational Programme
S	
SVHC	Substances of very High Concern
STO	Strategic objective
SO	Specific objective
W	
WWTP	Wastewater Treatment Plant
WFD	Water Framework Directive

1. PREFACE

This document constitutes the Action Plan of the Lithuania elaborated within the scope of the BIGDATA4RIVERS project that was approved under the fourth call for the Interreg Europa program and is co-financed by the European Regional Development Fund (ERDF).

The overall objective of the project is to exchange experiences and good practices between partners in the field of the efficiency of the water systems, to adapt those good practices and apply the lessons learnt to each partner reality through the development of individual action plans and to promote their application through the partners' policy instruments.

BIGDATA4RIVERS is in essence a driver for the generation and exchange of information and knowledge enabling better planning processes and decision-making regarding the local/regional water management. The interregional learning process allowed partners to learn and support each other based on their own experiences in the EU Water Framework directives implementation.

2. EXECUTIVE SUMMARY

2.1. Introduction

The quality of water in Lithuania's rivers has improved significantly over the past decades thanks to large investments in wastewater management system.

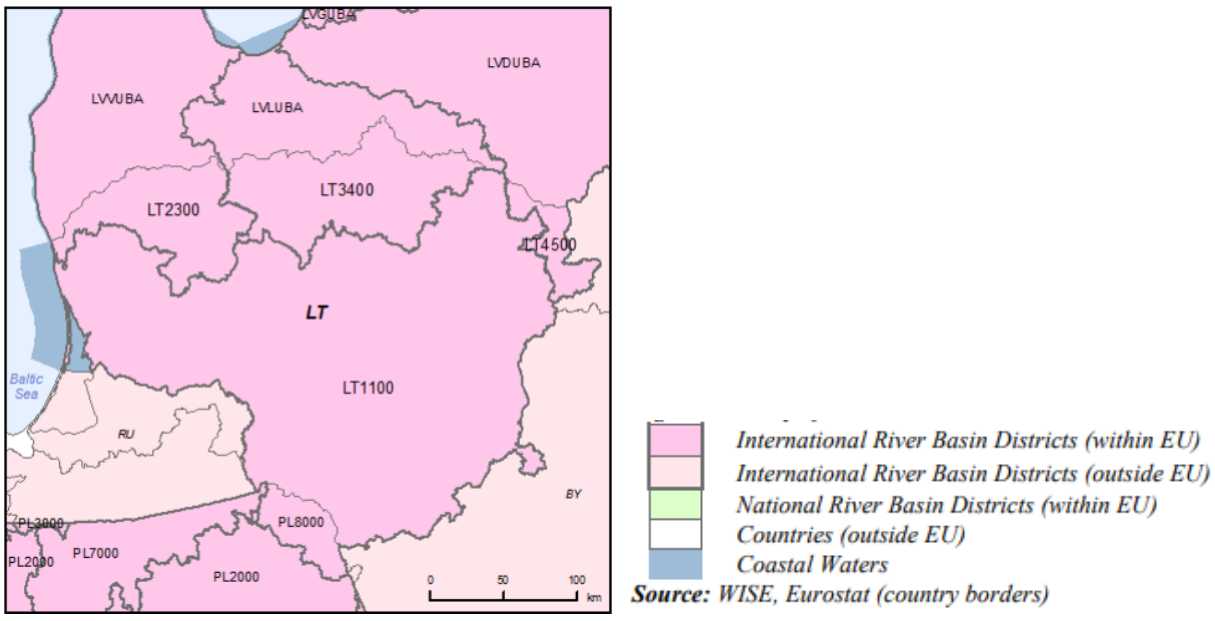
Lithuania: General information

Lithuania's area equals 65 000 km². The population of Lithuania was 3.0 million as of the beginning of 2022.

A total of 1193 surface water bodies have been identified for management purposes in the Nemunas, Lielupė, Venta and Dauguva RBD management plans, of which 826 are rivers, 361 are lakes, 4 are intermediate (Curonian Lagoon, Curonian Lagoon watershed zone) and 2 - categories of coastal water bodies. Lithuania has 99 km of the Baltic Sea coastline, which are mostly devoted to recreation and nature preservation. Forests cover just over 30% of the country.

All four RBDs in Lithuania are international, shared with Latvia, Poland, Belarus and the Russia.

Figure 1. Map of River Basin District



Source: *WISE, Eurostat (country borders)*

Table 2 | River Basin Districts

LITHUANIA'S RIVER BASIN DISTRICTS			
RBD	**Name**	**Size (km2)**	**Countries sharing RBD**
LT1100	Nemunas	48385 (including coastal and transnational waters)	BY, LV, PL (relatively small part), RU
LT3400	Lielupė	8948	LV
LT2300	Venta	6276	LV
LT4500	Dauguva	1875	BY, LV

Source: River Basin Management Plans reported to WISE2 http://cdr.eionet.europa.eu/lt/eu/wfdart13

The assessment of the status of water bodies revealed that 63% of water bodies in the categories of rivers and 64% of lakes in Lithuania are classified as risk water bodies and do not meet the criteria of good status. 57% of water bodies in the rivers and 62% of lakes in the Nemunas RBD do not meet the criteria of good status, 94% and 95% in the Lielupė RBD, 66% and 90% in the Venta RBD, and 22% and 44% in the Dauguva RBD. Not all water bodies in the intermediate and coastal categories meet the criteria for good status (2021, EPA, LT).

It is possible to mark out 2 groups of factors that have led to the deterioration of water bodies. One group of factors is the continuing and increasing diffuse pollution, mainly from agricultural activities, together with pollution from agriculture, and in some water bodies the deterioration was caused by concentrated pollution, persistent effects of hydro morphological changes in surface water bodies, natural processes and changing climatic conditions. Another group of factors is the increased amount of actual data on the status of surface water bodies collected in the last period, which led to more water bodies being assessed not by expert assessment but in 2014-2019 based on monitoring data. The increased amount of data collected has also led to an increase in confidence in the assessment, which has made it possible to determine the status of water bodies more accurately.

Chemical pollution by hazardous substances was examined based on the data of the water quality monitoring carried out. Some rivers are adversely affected by pollution from hazardous substances. The exact sources of pollution with hazardous substances cannot be identified yet due to a lack of data and, consequently, it is difficult to identify polluted river stretches and their length. However, it has been identified that pollution is coming from the wastewaters discharged from larger cities located near the sites where exceedances were observed. Some hazardous substances were detected in the transboundary rivers at the border with Belarus (the river Neris) and thus it was assumed that the entire stretch of the river flowing in the territory of Lithuania was adversely affected by significant pollution. The concentrations of the regulated hazardous substances in the Neris may exceed the established MAC as a result of transboundary pollution. Further work is said to be on-going on the identification of the origin of the hazardous substances.

Particular attention must be paid to the following industries when planning guidance documents, information campaigns and planning the control of wastewater discharges: paint industry, metal processing, plastics, production of building materials, car washes, use and production of industrial and domestic cleaning agents, use and production of pneumatic fluids, fabric and leather processing, metallurgy, machine building, electroplating processes, coal combustion, fossil fuel combustion, oil refineries, shipbuilding painting and treatment of hulls.

2.2. The Policy Instrument

The Operational Programme (OP) for the European Union Fund's Investments in 2014-2020 Republic of Lithuania is the main Policy instrument (PI) still under implementation until the end of 2023, however there is no funds available.

The new Programme for the European Union funds' investments in 2021–2027 in Lithuania is expected to be approved in September, 2022. However, the new measures will be for the new programme and the main focus. With the new programme there is more chance to reach a change, as it fits to the topic and it is expected continuation of a foreseen measures in the old programme,

There is foreseen the sstrengthening of the management of water resources by investing in measures set out in the updated (third) river basin management plans and program of measures to achieve the objectives of the marine environment (documented in accordance with the directives), such as the introduction and implementation of modern environmental research and monitoring methods. Acquisition of the necessary equipment and tools, which will allow more efficient and high-quality detection of changes in the status of the Baltic Sea, other surface and groundwater bodies and their causes, will enable faster response and take the necessary measures.

2.3. Methodology

The Exchange of experiences activities (good practices, site visits, knowledge transfer sessions and interregional workshops) between partners of the BIGDATA4RIVERS project has been the baclground information received for the Action Plan development.

- The development of the Joint analytical report was the first step for the exchange of experience process in the project;
- The identification of the Good practices served not only to understand the developments at local or regional level, but also to identify the needs in the region;
- Study visits and Technical knowledge transfer seminars were especially important to share the experiences between project partners;
- The good practice database served for the matching pair's activities to share the specific information between project partners.

All the information provided in the project was used for the Action Plan development through a continuos cooperation with the Managing Authority of the Policy instrument – the ministry of Environment.

The Ministry of Environment (MoE) coordinates the activities of subordinated institutions to ensure the implementation of river basin management. The MoF is responsible for organising monitoring, assessment of proposed measures and development of measures. The MoE is also responsible for drafting and coordinating international agreements in the field of management of international river basin districts. The implementing body is the Environmental Protection Agency (EPA) under the Ministry of the Environment. The EPA is responsible for:

- monitoring of surface waters (preparation of a monitoring programme, co-ordination of monitoring and complex chemical analysis);
- assessment of the status, establishment of a system for the classification and definition of objectives for surface water bodies;
- control of companies discharging wastewater to surface waters or to the wastwater systems.

2.4. Vision and Goals

According to the application form of BIGDATA4RIVERS project, KTU has multiple objectives to achieve in this project. Main activities of KTU has been focused on the creation of Action Plan in the first phase of the project. While the second phase is oriented to the monitoring of the actions to be implemented in the context of Lithuania. Actions planned to be implemented by the stakeholders identified and the responsibilities they have, based on the legal documents and other national requirements. KTU, as the national partner of BIGDATA4RIVERS project and the scientific institution, position itself as one of the stakeholders, providing the knowledge and exchange of experience for diffrent stakeholders of the water sector and supporting stakeholder for the decision makers, and other assistance for the fluent implementation of this Action Plan.

Based on the analysis made in the Phase I of the BIGDATA4RIVERS project, the **broad vision** could be defined based on the Policy Instrument analysis, the legal documents which are the basis for the implementation of the water management improvement process.

In order to improve the efficiency of the actual ROP, it was important not only learn from other EU regions

how they had developed their river basin area management plans and strategic documents, but also to contribute to the usage of the Information and communication technology (ICT) as a supporting tool for the management, maintenance and monitoring of water.

The present document is the proposal for the Action Plan for the improvement of the Policy instrument with the Priority axis 5: Environment, sustainable use of natural resources and adaptation to climate change. The current ROP for the period 2014-2020 is still under implementation until 2023. The main challenges indicated in the Policy Instrument were related with an Environment and quality of surface water bodies.

Many different hazardous substances have been investigated in surface waters for a long time and there are detailed monitoring results available for these substances in Lithuania (e.g. heavy metals, PAHs, some pesticides). However, the emerging substances, such as pharmaceuticals, PFAS/PFOS and others, have not been examined and monitored more closely and were targeted only through some screening exercises within different projects.

Table 2. Objectives and Actions of the Action Plan

Strategic objective	Specific objective	Action
STO. Strengthen water environment protection state control	SO. To reduce the impact of economic activities on surface water bodies	Development of a program of measures to achieve and maintain good condition of the river basin districts water quality

2.5. Lessons learned

The main benefit of the BIGDATA4RIVERS project is the identification of good practices and involvement of the stakeholders, which helped to develop the Action plan. There have been presented most of the Good practices for the stakeholders which have participated at the LSGs. They have indicating the following GPs as the most important ones and relevant for the Lithuanian water management process:

Good Practice: Regional monitoring of water quality (ID 19) (CAB, Sweden)

- Broad screening investigations have been nationally and regionally performed in Östergötland. Approximately 150 substances were analysed in 33 surface and groundwater samples from Östergötland in 2018 (including pharmaceuticals and hormones, industrial chemicals and PFASs). Screening of PFASs has introduced the issue on a national level and introduced the issue and elevated the need for developement of measures to reduce polluted sites and industries contributing further to elevated levels of PFAS/PFOS in the recipient waters in all of Sweden.

Good practice: Monitoring of Asopos river basin: Chemical assessment of emerging contaminants (ID 25) (RDFA, Greece)

- Extended environmental monitoring study including the determination of legislated compounds and the wide-scope screening of organic chemicals for which no occurrence data exist, namely, target analysis, suspect and non-target screening of Priority Pollutants and Emerging Contaminants. Extended monitoring of water quality of: (a) Asopos river's basin and its underground aquifer at the borders of Attica - physicochemical parameters and conventional pollutants (Directive 2006/118/EC), priority pollutants (Directive 2013/39/EU) and emerging pollutants; (b) Mavrosouvala spring (drinking water) - monitoring drinking water under the Joint Ministerial Decision Y2/2600/2001 (compliance with Directive 98/83/EC) and emerging pollutants.

  The results indicate the pollution/contamination degree of Asopos river basin: Plant protection products (herbicides and fungicides, transformation products), How the weather affects the daily detection trend, Distribution of pharmaceuticals, Industrial chemicals, Seasonal trends of the pollutants/contaminants, Suspect screening, Detection of spills including trend analysis.

Good practice: Wastewater treatment of Pharmaceuticals (ID 16) (CAB, Sweden)

- In wastewater treatment plants contaminants posing a threat to the environment are supposed to be reduced or removed. Some contaminants such as nutrients and larger particles (i.e. coffee)

are already efficiently removed by chemical and biological processes at WWTP in Sweden. Most of the pharmaceuticals entering the wastewater in Sweden is excreted by humans and not the result of disposal of unused prescribed drugs into household toilets. Due to the design of medical substances, such as being able to resist for example the acid environment of human intestines, they are difficult to break down in previously existing steps in most WWTPs. In 2019 the EU proposed a strategic approach to pollution of pharmaceuticals in water. The EU has also included pharmaceuticals such as ciprofloxacin and 17-Alpha-ethinylestradiol on the priority substance watch list for the water framework directive. Pharmaceutical discharges to the environment by wastewater have been identified as a severe environmental issue where further measures are necessary. Studies have shown that pharmaceuticals can accumulate in sediments posing risks to benthic organisms in the Baltic sea, where the main source were identified as effluent water from WWTPs rather than hospitals and animal production use. Both upstream measures as well as removal of pharmaceuticals at WWTP are necessary to reduce impacts in the environment caused by discharge.

Good practice: Cross-border collaboration in the implementation of projects and signed conventions related to water management (ID 11) (CIM Alto Minho, Portugal)

- Shared management of the Duero international hydrographic basin, taking in consideration the evolution of water conventions signed between Spain and Portugal, projects in collaboration and also the resolutions about shared needs. The technologies developed / applied vary depending on the type of project in collaboration. Applies to all water bodies shared across borders by two or more countries. Likewise, current cross-border cooperation is a good example of shared river basin management and can be expanded to other areas of natural resource management.

Good practice: ALBUFEIRA - Joint evaluation program of the water bodies of the Spanish-Portuguese hydrographic basins (ID 13) (AIMRD, Spain)

- The general objective of the project is to advance in the joint coordinated implementation of the Water Framework Directive (WFD) between Spain and Portugal, especially with regard to the follow-up of the status of the Hispano - Portuguese Hydrographic Water masses and the impact assessment of the measures that have been developed to achieve the environmental objectives. To improve the knowledge of the degree of conservation of species and types of habitats in the natural spaces of the border connected to the rivers that allow a coordinated management and protection, and their relationship with the state of the water masses, evaluating the need to define a complementary assessment to guarantee the protection of habitats and protected species.

Good practice: NOR-WATER Emerging pollutants in the waters of Galicia - Northern Portugal: new tools for risk management (ID 09) (CIM Alto Minho, Portugal)

- The technological tools in development take into account different parameters / variables to support modelling, focus on chemical compounds in greater concentration in the waters under analysis and intended with historical values gathered to support the forecast of the evolution of biomass in aquatic ecosystems. The development of new modelling and ecotoxicological tools to assess the environmental risk of PEs will enable the determination of the bioaccumulation factors of the priority PEs and transformation products (and also of the chemicals derived from the runoff of forest fires identified in the previous activities) and also will enable the use of toxicokinetic models to shape their behaviour in organisms.

Good practice: Cross-border collaboration in the implementation of projects related to water management (risks, quality, emerging pollutants) (Portugal/Spain)

- Shared management of the Minho and Lima international hydrographic basins, through technologies developed / applied that vary depending on the type of project and the theme of the collaboration (risks, quality, emerging pollutants). Although the responsibility for the management of water resources is clearly separated between the two Member States, they are consulted during the elaboration of the main planning instruments, namely in the elaboration of national plans, such as the Hydrographic Region Management Plans (PGRH) and Flood Risk Management Plans (PGRI). Collaboration is also present in cross-border monitoring and information sharing. Applies to all water bodies shared cross border by two or more countries.

2.6. List of actions

This action plan will be implemented through various measures that will be needed to achieve the target of reducing pollution by substances of very high concern in Lithuania. Based on the vision and goals, there is identified the following action:

- **Development of a program of measures to achieve and / or maintain good condition of the river basin districts.**

2.7. The monitoring process

The monitoring process will consist of a set of the actions needed to monitor the process and to compare the results with requirements established by the European Commission for the River basin management in EU.

The monitoring process will consists of a check the results of a new programme for the prevelance and amount of the emerging substances that characterize the chemical status of surface water bodies. As well the activities of the control of priority and other hazardous substances discharged with wastewater according to the type of economic activity of economic entities.

2.8. Conclusions and recommendations

The BIGDATA 4RIVERS Project aims to exchange experiences and good practices among partners in the field of efficiency of river basin water management, to adapt these good practices and to apply the lessons learnt to each partner region or country through the development of individual action plans and to promote their application through the partners' policy instruments.

The main factors of human economic activities having an impact on the status of surface water bodies are the diffuse pollution and point source pollution (municipal and industrial wastewater discharged from a specific source of pollution), and on the biodiversity of the Baltic Sea – human activities at sea and pollution accidents.

In line with the Marine Strategy Framework Directive, the Water Framework Directive and the Helsinki Convention 1992 on the Protection of the Marine Environment of the Baltic Sea, Lithuania's strategic goal in the field of water protection is to achieve, by 2030, a good status of the Baltic Sea area in its jurisdiction, in the Curonian Lagoon, and in about ½ of its inland surface water bodies.

These goals will be pursued by continued monitoring of the quality of Baltic Sea water and other waters, research activities and implementing measures aimed at improving the ecological and chemical status of waters, as envisaged in river basin management plans. These measures will contribute to the goals, provisions and key actions set by the Commission Communication "A Blueprint to Safeguard Europe's Water Resources", the Directive for Maritime Spatial Planning and the EU Strategy for the Baltic Sea Region, addressing the challenges faced by the aquatic environment and ensuring sustainable growth and use of resources.

One of the most important objectives – to improve the condition of the surfaces waters - lakes, ponds and rivers, by reducing the entry of hazardous substances into water bodies.

BIGDATA 4RIVERS will contribute to the following specific objective of the Interreg Europe Programme: "*improve the implementation of regional development policies and programmes, in particular investment programmes for growth and employment and, where relevant, European territorial cooperation programmes, aiming at increase resource efficiency, green growth and eco-innovation and environmental performance management*".

Using the project results, actually we seek to improve our policy instrument and at the same time to implement the good practices from other regions and use the lessons learned to local/regional and national level for a more effective protection of water bodies in our country through a better response to the requirements of the EU water policy.

The main result of the project is to improve the efficiency of water management policies and instruments,

by promoting lessons learned in the BIGDATA4RIVERS partnership.

3. ACTION PLAN (MAIN PART)

3.1. General Information

Project	BIGDATA4RIVERS
Partner organisation	- *Kaunas University of Technology*
Other partners / players involved (if relevant)	- *Iberian Association of Riverside Municipalities of Duero River (Spain)* - *Regional Development Fund on Behalf of the Region of Attica (Greece)* - *The National Union of Romanian Entrepreneurs (Romania)* - *The County Administrative Board of Östergötland (Sweden)* - *CIM Alto Minho (Portugal)* - *Cluster DREAM (France)*
Country	Lithuania
NUTS2 region	Lithuania
Contact person	Jolanta Dvarionienė
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3.2. Policy Context

The Action Plan aims to impact:	☐	Investment for Growth and Jobs programme
	X	European Territorial Cooperation programme
	☐	Other regional development policy instrument
Name of the policy instrument addressed:	Programme for the European Union funds' investments in 2021–2027 in Lithuania The previous indicated OP 20214-2020 is finishing and there is no funds available. However, a new programme is under approvement and the new measures will be for the new programme.	

3.3. Details of the actions envisaged

Action 1 - Development of a program of measures to achieve and maintain good condition of the river basin districts water quality

The Background *(please describe the lessons learnt from the project that constitute the basis for the development of the present Action Plan)*

The great benefits of the BIGDATA4RIVERS project were identified during the Phase I, which helped to

develop the Action plan:

- Collection of good practices;
- Involvement of the stakeholders;
- Participation in the Knowledge transfer events;
- Case study visits;
- Exchange of experience seminars.

Also all contents shared by the BIGDATA4RIVERS project partners have been presented to the local stakeholders, which have participated at the LSGs or international events. They have indicating the GPs as the most important ones and relevant for the stimulation of the water management process in country, with the aim to improve the condition of the surfaces waters by reducing the entry of various chemical substances, however the most important the emerging hazardous substances into water bodies.

During the Knowledge transfer seminars and Exchange of Experience and Case study visits there were presented diffrent GP"s, which were of high importance for our country.

The need to foster the monitoring of water bodies and environmental assets was emphasised by many of the partners at the first Kick-off BIGDATA4RIVERS meeting at CIM Alto Minho in Viana do Castelo – Portugal on 29th – 30th July 2019.

Good practice 1: Monitoring of Asopos river basin: Chemical assessment of emerging contaminants (ID 25) (RDFA, Greece)

- Extended environmental monitoring study including the determination of legislated compounds and the wide-scope screening of organic chemicals for which no occurrence data exist, namely, target analysis, suspect and non-target screening of Priority Pollutants and Emerging Contaminants. Extended monitoring of water quality of: (a) Asopos river's basin and its underground aquifer at the borders of Attica - physicochemical parameters and conventional pollutants (Directive 2006/118/EC), priority pollutants (Directive 2013/39/EU) and emerging pollutants; (b) Mavrosouvala spring (drinking water) - monitoring drinking water under the Joint Ministerial Decision Y2/2600/2001 (compliance with Directive 98/83/EC) and emerging pollutants.

  The results indicate the pollution/contamination degree of Asopos river basin: Plant protection products (herbicides and fungicides, transformation products), How the weather affects the daily detection trend, Distribution of pharmaceuticals, Industrial chemicals, Seasonal trends of the pollutants/contaminants, Suspect screening, Detection of spills including trend analysis.

The attendees at the January 23rd, 2020 meeting at RDFA in Athens – Greece identified in the Exchange of experience and Study visit a number of common problems regarding the surface water pollution, contaminants, sources and monitoring issues.

Good Practice 2: Regional monitoring of water quality (ID 19) (CAB, Sweden)

- Broad screening investigations have been nationally and regionally performed in Östergötland. Approximately 150 substances were analysed in 33 surface and groundwater samples from Östergötland in 2018 (including pharmaceuticals and hormones, industrial chemicals and PFASs). Screening of PFASs has introduced the issue on a national level and introduced the issue and elevated the need for developement of measures to reduce polluted sites and industries contributing further to elevated levels of PFAS/PFOS in the recipient waters in all of Sweden.

The BIGDATA4RIVERS case studies from the other partner regions have been very useful as examples of water managemnt at regional level. The approaches by other partners in terms of water monitoring and (eg. the presentation at the Sweden online meeting given by Helene Ek Henning, Sofia Bastviken, Sara Lönnerud County Administrative Board of Östergötland, Sweden), have been particularly useful.

In order to address the issue of hazardous substances by improving their management at the National and local level, proposed to apply a set of analytical and control tools to carry out analytical work in the authorization process for hazardous substances, to identify potential risks of releases and to control them.

For identified specific potentially significant, the emerging pollutants, such as pharmaceuticals, a detailed analysis of the risks of their potential releases is proposed, including laboratory control of the substances found in the relevant reservoirs at the effluent discharging into those reservoirs.

a) ***Action*** *(please list and describe the actions to be implemented)*

The programme of measures for the management of surface water in the context of surface water quality will be a key instrument for improving the regional policy instrument addressed by BIGDATA 4RIVERS.

In the 2014-2020 programming period, which is still under implementation until the end of 2023, the key-enabling factor is beeing to address the environmental challenges effectively combining all the tools available in an integrated approach to face Lithuanian needs. These require new, more demand oriented attitude of relevant authorities: providing services based on lessons learnt, like smart technologies (e.g. metering) that will also contribute to better assessment of water quality potential in inland and marine waters. Introducing not only these innovations, also a call for new measures under PA5 or revising the scope of supported activities of currently planned measures – these are the focal points for the improvement of the policy instrument addressed by KTU.

According the findings in the BIGDATA4RIVERS project, the Action plan focuses on the development of a programme of measures for achieving the good status of water bodies and this will be implemented through the following steps:

1) Reinforcement of the national stakeholder group

Stakeholder involvement is one of the key factors in achieving desirable results in water management. This will not only help to identify key issues and challenges at local, regional or national level, but will also share relevant information on changes in EU water policy in the near future.

Reinforcement of the stakeholder group will involve:

- Roundtable discussion of a national group regarding the surface water quality in the river basin districts (the Local Stakeholder Group developed under the BIGDATA4RIVERS project will be actively involved);
- Review of the existing measures and its implementation under the previous period and estimation the priorities;
- Production of the report regarding the priorities and suggestions from the national stakeholder group meeting.

2) Selection of measures for the chemical status of surface water bodies improvement

This second step is dedicated for the identification of weaknesses of current programmes and integration of a new knowledge and experience obtained in the BIGDATA4RIVERS project.

- Review the recent programs to assess the prevalence and quantity of hazardous substances that characterize the chemical status of surface water bodies;
- Update an inventory of wastewater treatment systems with less 2000 PE;
- Review the priority and other hazardous substances discharged with wastewater according to the type of economic activity of economic entities.

3) Development of a programme of measures and integration in the policy instrument framework

Programme of measures to achieve and maintain good condition of the river basin districts water quality through different steps listed below:

- Identification of the main priorities for the improvement of water management policies in the context surface water quality;
- Identification of the most important economic activities contributing to the emergence of substances of very high concern in surface waters;
- Identification of the most important and necessary infrastructure to allow better management of the wastewater water at local level.

The programme of measures to achieve and maintain good condition of the river basin districts water quality will be one of the most important instrument for improving the regional policy instrument addressed in the

BIGDATA4RIVERS project.

4) Integration of the local action plan in the policy instrument framework

Programme of measures will be defined under an ongoing process link to the conclusions of the stakeholders group meetings, territory needs in a concrete moment.

b) ***Players involved*** *(please indicate the organisations in the region who are involved in the development and implementation of the action and explain their role)*

- Environmental Protection Department under the Ministry of Environment (EPD MoE);
- Environmental Protection Agency (EPA);
- Regional Environmental Protection Agencies (REPA);
- Industrial companies;
- Laboratories;
- Research institutions;
- Etc.

c) ***Timeframe***

2022-08-01 – 2023-07-31

The timeframe for the implementation of the described action covers phase 2 of the BIGDATA 4RIVERS project (time horizon of 12 months).

TASK	TITLE	TIMEFRAME
1	Reinforcement of the national stakeholder group	August 2022 -July2023
2	Selection of measures for the chemical status of surface water bodies improvement	September 2022 – March 2023
	Development of a programme of measures and integration in the policy instrument framework	April 2023 – May 2023
4	Integration of the programme of measures in the policy instrument framework	June 2023 – Jul 2023

d) ***Costs*** *(if relevant)*

There could be foreseen some costs required for this action, in addition to regular personnel costs and logistical issues associated with holding meetings, common events and experience sharing sessions. Some costs are being evaluated but will be covered by funds and managing authority own resources (2 people working 50% during 12 months, thus around 24.000€ is expected.

e) ***Funding sources*** *(if relevant)*

Cohesion Fund, National funding sources

f) ***Impact expected***

The programme of measures to achieve and maintain good condition of the river basin districts water quality will be one of the most important instrument for improving the regional policy instrument addressed in the BIGDATA4RIVERS project.

The programme of measures for surface water bodies will include more factual data on the status of surface

water bodies, including more hazardous substances of very high concern. Increased data collection would also increase the confidence in the assessment and allow a more accurate assessment of the status of water bodies.

The identified or reduced input of hazardous substances into water bodies will improve the status of surface waters and at the same time reduce the risk. To reduce the impact of point source pollution at national level, it is proposed to set pollution targets that can ensure water protection objectives and to replace the methodology for assessing the impact on the effluent receiver with a that incoming pollution will not have a significant impact.

The following table summarizes the main expected impacts of this action, quantified in specific indicators:

TASK	TITLE	INDICATORS	NO
1	Reinforcement of the national stakeholder group	Stakeholders group	1
		Number of stakeholders participating	10
2	Selection of measures for the chemical status of surface water bodies improvement	Conclusions / results report	1
3	Development of a programme of measures and integration in the policy instrument framework	Programme of measures	1

The close monitoring of these indicators will be the purpose of the monitoring process to be carried out by Kaunas University of Technology within the scope of phase 2 of BIGDATA 4RIVERS.