BIGDATA 4RIVERS
Interreg Europe

Improving the European Rivers Water Quality through Smart Water Management Policies

ACTION PLAN

CIM Alto Minho

cim alto minho
comunidade intermunicipal do alto minho

INDEX

LIST OF ABBREVIATIONS

ABBREVIATIONS	
A	
APA	Portuguese Environmental Agency
B	
BIGDATA 4RIVERS	Improving the European Rivers Water Quality through Smart Water Management Policies
C	
CCDRN	North Portugal Regional Coordination and Development Commission
CIM Alto Minho	Comunidade Intermunicipal do Alto Minho
D	
DRAPN	Regional Agriculture and Fisheries Directorates of the North
E	
EGT	European Grouping of Territorial Cooperation
ERDF	European Regional Development Funds
EU	European Union
G	
GIS	Geographic Information Systems
I	
ICT	Information and Communication Technologies
IPVC	Polytechnic Institute of Viana do Castelo
R	
ROP	Regional Operational Programme

1. PREFACE

This document constitutes the Action Plan of the Alto Minho Intermunicipal Community (CIM Alto Minho) 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 principal objectives of this project are to go further in the implementation of the water directives by proposing and promoting intelligent water management based on ICT technologies since they can support systems that generate information in real time and allows different interested parties to access and share information to be a support in the decision-making process.

After more than two years of study visits and meetings to exchange experiences and analyse good practices around Europe, each BIGDATA 4RIVERS partner has developed a regional action plan.

The Action Plan presented in this document aims to provide CIM Alto Minho with knowledge and planning tools that allow it to prepare a strategic plan for the management of surface waters in its region, in order to face the impacts resulting from climate change.

Several studies carried out on this subject indicate that although the null amount of rain is not undergoing major changes, the same does not occur with the rainfall regime. This change translates into the existence of longer periods without rain, alternating with high amounts of rain in reduced periods of time.

This change poses several challenges in the retention of surface water in order to retain water for longer time, mitigating the impacts of periods of no rain. In the case of the CIM Alto Minho region, this aspect is even more relevant since surface waters are the main source of water for the various uses existing in the region.

2. EXECUTIVE SUMMARY

2.1. Introduction

One of the Europe's most relevant resources are the rivers that cross it. They are not only the main responsible for the rich and diverse European natural ecosystems but also the main source of the water used by the population and population activities.

Water is a scarce resource that must be protected and reused & in this context the preservation of the quality of the European rivers' water is a major concern of local, regional, national and even European authorities.

The project "*BIGDATA 4RIVERS - Improving the European Rivers Water Quality through Smart Water Management Policies*" aims to go forward in the water directives implementation proposing the promotion of a smart water management based in ICT technologies in order to support the implementation of a smart water management in the participant territories able to generate real-time information allowing access to different stakeholders and support a decision-making process.

The BIGDATA 4RIVERS project was approved under the fourth call for the Interreg Europa program and is co-financed by the European Regional Development Fund (ERDF). It 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.

The Alto Minho Intermunicipal Community (CIM Alto Minho) is the lead partner of the project and it is a regional authority that administrate a NUT III level region which encompasses the municipalities of Arcos de Valdevez, Caminha, Melgaço, Monção, Paredes de Coura, Ponte da Barca, Ponte do Lima, Valença, Viana do Castelo and Vila Nova de Cerveira. Its main attributions focus on promoting the planning and management of the economic, social, and environmental development strategy of the territory covered, the articulation of municipal investments of inter-municipal interest, the participation in the management of programs to support regional development, the activities of planning the actions of public entities of a supra-municipal nature. It is also the responsibility of the CIM to ensure the articulation between municipalities and central administration services in areas such as “public supply networks, basic sanitation infrastructures, waste water treatment and urban waste” and "spatial planning, nature conservation and natural resources".

In the Alto Minho region water is of extreme relevance, reason why it constitutes an endogenous resource to valorise and factor of change within the scope of the Policy Instrument addressed - the Alto Minho 2020 Strategy & Action Plan.

The process of cooperation and interregional exchange of experiences developed under Phase 1 of the BIGDATA 4RIVERS project, which is reflected both in the lessons learned from the partner regions, as well as in the recommendations issued by the Local Stakeholders Group, made it possible to identify a set of capitalisation opportunities in the form of intervention measures/actions in the Alto Minho region. In the course of this process, some key aspects were emphasised, whose consideration and evaluation were asserted as necessary in the territory, highlighting: **governance**; **cooperation**; **climate change** adaptation; and **information and communication technologies** (geographical information systems, big data).

In accordance with these priorities, and as a result of the interregional learning process, CIM Alto Minho identified governance and climate change as key factors and challenges for an efficient evolution of its strategy and regional policy on water.

2.2. The Policy Instrument

The policy instrument addressed by the Alto Minho Intermunicipal Community in the BIGDATA 4RIVERS project is the "Alto Minho 2020 Strategy & Action Plan".

The Alto Minho Development Plan (2014-2020) was an initiative of the Alto Minho Intermunicipal Community that aims to establish a diagnosis, vision, strategy and action plan for the programming period of the Structural Funds for the same period. The Alto Minho 2020 strategy is geared towards preparing a "desirable future" with respect for a past with identity. It is assumed to be regional, based on the promotion of transmunicipality through the creation of coordination, cooperation and concertation partnerships. It covers 4 thematic axes: (1) to make Alto Minho a more competitive region; (2) to make Alto Minho a more attractive region; (3) to make the Alto Minho a more connected region; (4) to make Alto Minho a more resilient region.

Regarding the water management, that document had a strategic vision for valuing the region's natural resources to ensure its competitiveness and its sustainability. It is also in line with this strategic vision that participation in the BIGADATA4RIVERS project should be considered. It should be noted that in the region water, in addition to being important for life, is also a support for various economic activities ranging from agriculture, fishing and leisure.

The new policy document for the region, called the Alto Minho 2030 Strategy, reinforces the role of water

in the sustainable development of the region, not only as a support for the economic activities, but also for its role in the conservation of natural heritage and existing protected areas already reflecting part of the knowledge acquired within the scope of the BIGDATA4Rivers project.

Regarding natural resources, and thus to water as natural resources, this new policy instrument reinforces the need to ensure greater resilience in the region, which necessarily implies its preparation and adaptation to climate change that the effects are already being felt.

Although this concern, of resilience, was already one of the axes of the previous policy instrument, it assumes, in the current one, greater dimension, reflecting not only an increase in the concern in this area on the part of the CIM of Alto Minho, but also due to the great urgency with which the effects of climate change must be mitigated.

The action plan described in this document will provide CIM Alto Minho with knowledge and tools that will allow it to define a surface water management plan to deal with the impacts of climate change. It corresponds not only to an improvement in policy instruments but also to a significant contribution to achieving greater resilience in the Alto Minho territory, one of the main objectives of the redeemed strategy documents.

Also worth to be mentioning that action plan will meet the following regional and national policy instruments:

- Regional Operational Programme (ROP) Norte 2030;
- National Program for Spatial Planning Policy (PNPOT);
- Portugal 2030 Strategy.

2.3. Methodology

The interregional exchange of experiences process developed between all partners of the BIGDATA4RIVERS project during the phase 1 was sustained by a continuous network of exchange of existing realities and knowledge, online and in person (at the beginning), through:

- The study visits (allowing partners to understand on-site the others' reality, problems and good practices);
- The production of deliverables such as the joint analytical report about the river basins management plans and policies of participating regions (state of play of the river basins management plans and policies; identification of the main areas where ICT can support/improve the water management and monitoring; main opportunities and needs regarding the improvement of the policy instruments addressed and the good practices transferable to the other partners);
- The two technical knowledge transfer seminars aiming to improve regional knowledge and skills for the implementation of a smart water management in their territories;
- The matching pairs activities, for the exchange of specific information between partners interested in good practices to be adapted in their context.

From this last phase of identification of good practices with the best capacity to solve the problems or address the challenges identified by each partner, these action plans emerge, where it is intended that they specify the way of transposing and adapting the selected good practices.

The specific methodology used to develop the current action plan can be divided into two phases: a first one for identifying the objective of the plan and a second one associated with its elaboration.

To define the object of this action plan, in addition to the process described above, several meetings were held with local stakeholders to facilitate the identification of problems associated with water management, in its broader context, in the region. It should be noted that in these meetings the stakeholders were also informed of the work carried out in the BIGDATA4RIVERS project, namely in terms of good practices, which also allowed them to have a view of the problems felt by the partners and the strategies adopted to resolve them.

The methodology used to define the various phases of this action plan was based on the good practices selected in the matching activities carried out within the scope of the project, as well as other sources resulting from the research carried out in view of its objective (management of surface waters in the region to make the impact of climate change contributing to greater resilience in the region).

2.4. Vision and Goals

This document constitutes a proposal for an action plan, to be implemented by CIM Alto Minho, which aims to train them for a better management of surface waters in the region in order to mitigate the effects of climate change, namely in the alteration of the rainfall regime. Its implementation will not only contribute to an increase in the region's resilience in the face of those impacts but will also ensure compliance with the objectives of the policy instrument of the CIM Alto Minho.

The Alto Minho region is generally associated with a region with abundant water, namely of a superficial nature, and less susceptible to the impacts of climate change, namely changes in the traditional rainfall regime. It should be noted that surface waters are significant as they are the main source of water for the various uses of the region.

Several studies point to changes in the region's traditional rainfall regime that will translate into longer periods of no rain and periods of intense rain. In this context, providing the region with the means to ensure greater and better retention of surface water is essential to ensure a regular supply of water to the populations first and the remaining activities later. Only in this way can the objectives inherent to the policy instruments referred to initially be fulfilled. In this way, the objective of this plan is to contribute to the development of resources in the region that allow:

- i) identify the locations most vulnerable to changes in the rainfall regime;
- ii) typify the type of infrastructure necessary to ensure greater retention of surface water and its strategic location;
- iii) characterize and adjust the governance model for these cases;
- iv) characterize techniques for monitoring surface waters (in terms of quality and quantity) and their integration into the existing GIS platform;
- v) define strategic axes and lines for the strategic management of surface water in the context of climate change – local action plan.

In sum, this action plan seeks to:

- ***Define the actions to be done in the Alto Minho region to improve the regional policy instrument regarding the smart management of Minho and Lima rivers water, its valorisation as an asset for economic growth and the adaptation to climate change solutions.***

2.5. Lessons learned

Throughout the BIGDATA 4RIVERS project several exchange experiences were carried out which allowed all the partners to know, learn and understand new and innovative practices regarding water monitoring and management. The study visits conducted allowed partners to get to know new realities, and, in some cases, common issues and concerns were addressed. In this sense, it was possible to establish some matching pairs with some partners in order to get to know better the methodologies of their good practices in order to identify its possible transferability. Bilateral meetings were carried out and the sessions proved to be very fruitful, given the possibility for partners to work closely and clarify technical, methodological and operational doubts regarding the best practices of their interest, as well as to contact the stakeholders in each region.

BIGDATA4RIVERS project was the main source of information and inspiration to realize the real dimension that cooperation and exchange of governance strategies for a smart management of water can have on territorial development. The main conclusions acquired through the study visits and the most recent matching pairs activities were:

- **Governance** is crucial to a good water resources management cooperation groups and public participation must be part of the process that culminates in the improvement of water laws and directives. For that, funding is essential, private and/or public Also, researchers must participate in the decision-making process and transversal technical training should be guaranteed;
- A high level of **cooperation** reached between many entities, private and public, as the participation of local communities (and their representatives and public or associative) are essential for a uniform development of the territory and success achievement on the implementation of the water management policies. Also, identifying local skills among the private and public players working in the water and ICT sectors turns out to be a good strategy to develop a territory on a circular economy path, as to strengthen links between different parts;
- The potential impacts of **climate change** are a future challenge, both in terms of quality and sustainability, taking into consideration global forecasts of temperature increase (average and maximum) and the change in the distribution of precipitation over the year or even a decrease and a increase in extreme phenomena and more frequent drought events;

- **"Big data"** analysis technologies are beginning to play a fundamental role in water management, in all its aspects, due to the possibilities of analysing large amounts of data, as well as supporting decision-making;

- **Geographic Information Systems (GIS)** software's are a must have tool for an efficient water management, monitoring and territorial planning, which usually involves various entities It's cost effective and it allows to work with many information at the same time, as demands any territory planning.

- **Technologies** are a fundamental tool for an efficient water management, balancing the needs of monitorization, action and territorial planning with cost-effective financing suitable for different territories based on their development.

Also worthy of note are the good practices selected by CIM Alto Minho in the matching activities and which also served as a basis for the preparation of this document.

- **Good Practice 1:** Local Action Plans - River Tinnerbäcken (presented by The County Administrative Board Of Östergötland)

The local action plans are forms of close governance of the territory. They allow the definition of local solutions to the identified problems, gathering the consensus of local non-governmental organizations that represent different interests (economic, social and environmental).

- **Good Practice 2**: Regional cooperation to promote new and innovative projects for a better management of water resources (presented by the Cluster DREAM)

Starting by the identification and further application of skills in the territory through a cooperation network allow a circular economy basis (training technicians and use local labour) to promote innovative projects on Smart Water Management.

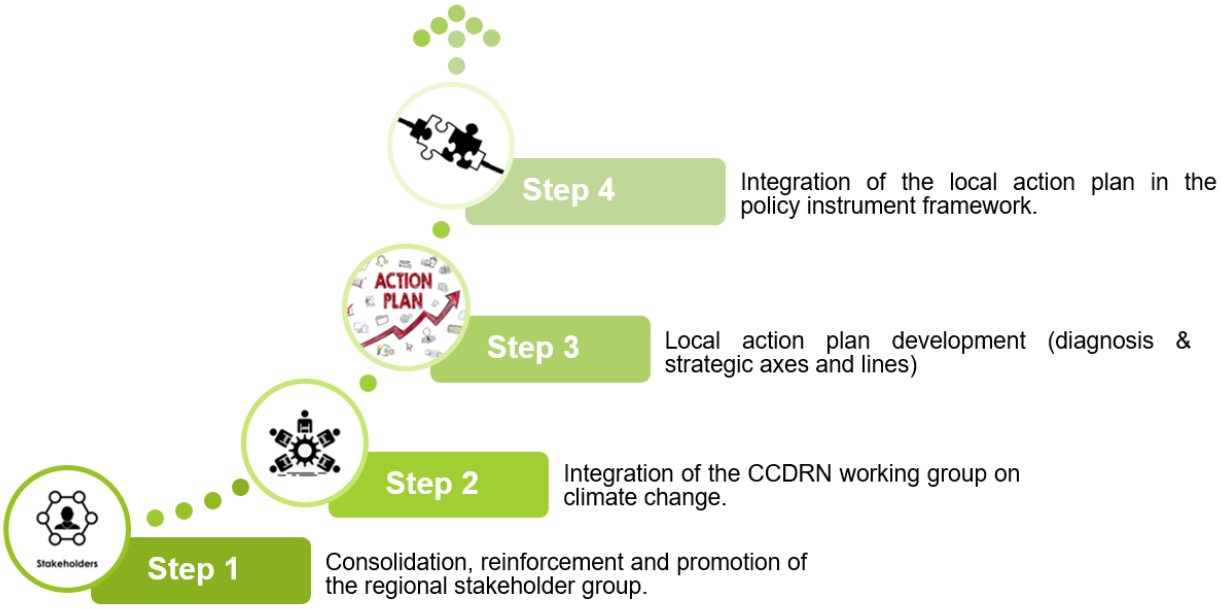
- **Good Practice 3**: Hub'Eau – Dissemination of open water data via Application Programming Interface (API) (also presented by the Cluster DREAM)

In this case sharable and compiled information is the nowadays effort to be done by any entity or agency who works with the territory. Considering the quantity of information made available by studies, research and evolving articles, it is important that everyone has access to the information in a way to be efficient and in constant evolution.

2.6. List of actions

This action plan will be implemented through a unique action that encompasses different tasks of action towards the objective of to empower the CIM of Alto Minho with knowledge and instruments that allow it to develop a strategic plan for the management of surface waters in order to face the resulting impact of climate change. In this context for each step / task an intermediate objective is expected which will allow a better follow-up and monitoring of this plan itself.

To achieve this action, four steps / tasks will be carried out:



2.7. The monitoring process

The monitoring process includes a set of key assumptions, such as identifying successes and difficulties during the implementation of the Action Plan, informed, timely and opportunely decision-making in the face of possible identified deviations, accountability for resources used and the results achieved and the monitoring of stakeholder's participation.

In implementing the action plan, the monitoring process is essential for an effective, efficient and appropriate management, enabling the mandatory requirements established by the European Commission to be met. A continuous and systematic monitoring process is essential for the cohesive and collaborative development of the entities involved, whether at the international, regional or local level.

The monitoring process will be under the responsibility of the CIM Alto Minho, which will also accumulate responsibility for its execution, as the policy instrument owner. This process will be carried out through the close monitoring of previously established indicators.

2.8. Conclusions and recommendations

The BIGDATA 4RIVERS Project aims to exchange experiences and best practices among partners in the field of efficiency of water management systems, to adapt these best practices and to 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.

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*".

It is expected the improvement of the effectiveness of policy instruments and implementation of intelligent

water management, through the exchange of experiences and methods for a more effective protection and preservation of the water quality of European rivers, through a better response to the requirements of the Water Framework Directive, more efficient water treatment systems and ICT-enabled infrastructure and networks, including those related to river water quality.

The main result of the project is to improve the efficiency of water management policies and of the policy instrument management policies and the policy instrument addressed, by promoting the development and implementation of smart water management in the project territories (supported by the policy instrument), by introducing the water sector, and promoting the enhancement of stakeholders' skills and knowledge enhancement of stakeholders.

Through this project, and as result of the exchange experiences activities, it was possible to acknowledge the existence of cross-cutting issues between partners and the possibility of transpose good practices, methodologies and techniques to different regions. BIGDATA 4RIVERS project has shown, also, the importance of mobilization and cooperation among public and private entities, as well as stakeholders in order to get better ways to-do and share knowledge. Only this way it is possible to achieve a desirable monitoring and management of the river basins and better policy instruments.

3. ACTION PLAN (MAIN PART)

3.1. General Information

Project	**BIGDATA 4RIVERS - Improving the European Rivers Water Quality through Smart Water Management Policies**
Partner organisation	Alto Minho Intermunicipal Community (CIM Alto Minho)
Other partners / players involved (if relevant)	- North Portugal Regional Coordination and Development Commission (CCDRN); - Portuguese Environment Agency (APA); - Regional Agriculture and Fisheries Directorates of the North (DRAPN); - European Grouping of Territorial Cooperation Rio Minho (AECT Rio Minho); - Aquamuseum of Minho River; - Associated municipalities of CIM Alto Minho (Arcos de Valdevez, Caminha, Melgaço, Monção, Paredes de Coura, Ponte da Barca, Ponte de Lima, Valença, Viana do Castelo, Vila Nova de Cerveira).
Country	Portugal
NUTS2 region	NORTE
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3.2. Policy Context

The Action Plan aims to impact:		Investment for Growth and Jobs programme
		European Territorial Cooperation programme
	X	**Other regional development policy instrument**
Name of the policy instrument addressed:	Alto Minho 2020 Strategy & Action Plan	

3.3. Details of the actions envisaged

Action 1 – Development of a local action plan for the strategic management of surface water in the context of climate change

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

As already mentioned, throughout the BIGDATA 4RIVERS project several exchange experiences were carried out which allowed the CIM Alto Minho to know, learn and understand new and innovative practices regarding water monitoring and management.

Thus, the project was the main source of information and inspiration to realize the real dimension that cooperation and exchange of governance strategies for a smart management of water can have on territorial development. The exchange of experiences and the close and active involvement of the Local Group of Stakeholders of CIM Alto Minho made it possible to see climate change as one of the biggest challenges in the current and future management of water resources, both in terms of quantity and quality.

In this context, it was identified as a strategic priority for the Alto Minho region the development of an action plan for the strategic management of surface water in the context of climate change, in order to improve the regional policy instrument regarding the smart management of Minho and Lima rivers water, its valorization as an asset for economic growth and the adaptation to climate change solutions.

In accordance with the above, CIM Alto Minho's action plan within the scope of the BIGDATA 4RIVERS project focuses on a single but ambitious action. This action is mainly based on the experience of the Swedish partner (The County Administrative Board Of Östergötland) that shows the benefits of a more local approach for the problems, developing local plans or sub-regional ones with the support of the local/sub-regional stakeholders. Also adopts the good practice presented by the partner Cluster DREAM, which promotes regional cooperation between entities of different types to identify innovative projects and forms of water management (to be developed under the policy instrument support).

Therefore, the following two good practices stand out as the basis of the central action of this plan:

- **Good Practice 1: Local Action Plans - River Tinnerbäcken (presented by The County Administrative Board Of Östergötland)**

  The local action plans are forms of close governance of the territory. They allow the definition of local solutions to the identified problems, gathering the consensus of local non-governmental organizations that represent different interests (economic, social and environmental).

- **Good Practice 2: Regional cooperation to promote new and innovative projects for a better management of water resources (presented by the Cluster DREAM)**

  Starting by the identification and further application of skills in the territory through a cooperation network allow a circular economy basis (training technicians and use local labour) to promote innovative projects on Smart Water Management.

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

As mentioned, the Action Plan focuses on the development of a local action plan for the strategic management of surface water in the context of climate change. Specifically, this action will be implemented by the following **steps**:

- **1) Consolidation, reinforcement and promotion of the regional stakeholder group.**

  This first step is intended to consolidate a group of regional stakeholders who, due to their nature, can play an active role in the analysis of the impacts of climate change in the region, with an emphasis on changing the rainfall regime and the need for better management of surface waters to deal with these impacts. Due to its technical nature and given the Portuguese legislative framework, this group of stakeholders should include bodies in the Central (national) Administration.

  The proximity of the local stakeholders is a very useful way of assure another type of knowledge of the problems and of identify possible solutions for them.

The consolidation, reinforcement and promotion of the regional stakeholder group will include:

- Creation / consolidation of a regional network of effective cooperation regarding water management (base on the Local Stakeholders Group created under BIGDATA 4RIVERS project);
- Definition of the main lines of work for the group of stakeholders (internal operative regulation) and define the scope of their participation in this plan;
- Organisation of the first stakeholders meeting where the process of information gathering will be defined as well the minimum of meetings to do during this action plan;
- Production of the final report that expresses the main conclusions resulting from that meeting.

❖ **2) Integration in the work group to combat climate change of the North Portugal Regional Coordination and Development Commission (CCDRN).**

The second step is the integration in the CCDRN working group on climate change. The objective of CIM do Alto Minho's participation in this group is to establish a direct liaison with the main regional authority on climate change and of the local plan actions with the with knowledge, instruments and planning methods of that group for increasing the resilience of its territory in the face of changes in rainfall regimes, due to climate change (aligning the action of the policy instrument with the strategy of the regional authority). On the other hand, this direct liaison will allow to have a global view of the strategy defined by CCDRN for the entire North region and the defined solutions, allowing its adaptation and future replication at the scale of the sub-region of Alto Minho (*downscaling*).

Another key aspect is the fact that CIM Alto Minho can include the priorities of the sub-region at the level of the strategic plan defined for the North region of Portugal, as well as guaranteeing sources of complementary funding for the implementation of the measures of the local action plan.

As managing authority of the policy instrument and part of the working group, CIM Alto Minho will participate in the technical meetings and produce a final report with the main lessons learned and conclusions. These conclusions will be crucial for improving the regional policy instrument with regard to adaptation to climate change and strategic water management.

❖ **3) Local action plan development.**

- ***3.1) Diagnosis and identification of the main strategic elements to consider in the local action plan for the strategic management of surface water in the context of climate change.***

This step aims to carry out an initial diagnosis of the needs of the CIM Alto Minho region in the context of better management of surface waters in a context of changes in the rainfall regime due to climate change and identify the principal strategic elements to consider in the local action plan. This diagnosis should focus at least on the following aspects:

- Places more sensitive to variations in the quantity and quality of surface water;
- Existing and necessary infrastructure to allow better management of surface waters;
- Relevant information to be considered in a monitoring network for this purpose or to be integrated into existing networks;

- Integration processes of a possible surface water management plan (to deal with the impacts of climate change) in the Georisk platform (GIS platform being implemented in the CIM Alto Minho region to deal with different types of risks)

After the elaboration of the initial diagnosis will be typified, identified and characterized the main key points that should be considered in the local action plan to increase the resilience of the Alto Minho territory, within the scope of surface water management, to face climate change.

- ***3.2) Definition of strategic axes and lines for the strategic management of surface water in the context of climate change – local action plan.***

Having diagnosed and identified the main strategic elements, and based on them, the strategic axes and lines of action will be defined for the strategic management of surface water in the context of climate change. This step concludes with the definition of the local action plan in this matter for the Alto Minho territory.

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

  This final step aims to integrate the results of the local action plan in the policy instrument framework.

Action plan activities will be defined under an ongoing process link to the conclusions of the stakeholders group meetings; the participation on the CCDR group; the territory needs in a concrete moment.

The local action plan for the strategic management of surface water in the context of climate change will be a key instrument for improving the regional policy instrument addressed by BIGDATA 4RIVERS.

The Alto Minho region was historically associated with a region with abundant water, namely of a superficial nature, and less susceptible to the impacts of climate change. So, the strategic management of surface waters in the context of climate change had not been explicitly considered as a priority in the regional policy instrument. The results of BIGDATA 4RIVERS will improve the regional policy instrument in this field, both in its version currently in force (Alto Minho 2020 Strategy & Action Plan) and in its revision (Alto Minho 2030 Strategy & Action Plan).

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

Players will be involved in the action from the very first step, which specifically focuses on the consolidation, reinforcement and promotion of the regional stakeholder group. Some of the players that will be involved will be:

- Polytechnic Institute of Viana do Castelo (IPVC);
- Aquamuseum of Minho River;
- European Grouping of Territorial Cooperation Rio Minho (AECT Rio Minho);
- North Portugal Regional Coordination and Development Commission (CCDRN);
- Regional Agriculture and Fisheries Directorates of the North (DRAPN);
- Portuguese Environment Agency (APA);

- Associated municipalities of CIM Alto Minho (Arcos de Valdevez, Caminha, Melgaço, Monção, Paredes de Coura, Ponte da Barca, Ponte de Lima, Valença, Viana do Castelo, Vila Nova de Cerveira).

d) Timeframe

The timeframe for the implementation of the described action covers phase 2 of the BIGDATA 4RIVERS project (time horizon of 12 months). The following table shows the planned timetable for each of the action's steps / tasks.

TASK	TITLE	TIMEFRAME
1	Consolidation, reinforcement and promotion of the regional stakeholder group.	Ago 2022 – Jul 2023
2	Integration of the work group to combat climate change of the North Portugal Regional Coordination and Development Commission (CCDRN).	Set 2022 – Jun 2023
3	Diagnosis and identification of the main strategic elements to consider in the local action plan for the strategic management of surface water in the context of climate change.	Oct 2022 – Jan 2023
	Definition of strategic axes and lines for the strategic management of surface water in the context of climate change – local action plan.	Fev 2023 – May 2023
4	Integration of the local action plan in the policy instrument framework	May 2023 – Jul 2023

e) Costs and funding sources (if relevant)

The costs required for the steps 1 and 2 of this this action are mainly related to regular personnel costs and logistical issues associated with holding meetings, common events and experience sharing sessions. Regarding steps 3 and 4, the associated costs are being evaluated but will be covered by community funds and/or own resources. These may include additional personnel costs or external expertise and services.

However, the total estimated cost of developing this action is estimated in 49,500€, according to the following distribution:

- 27,000€ staff costs (for steps 1, 2, 3 and 4);
- 17,500€ external expertise and services (for step 3);
- 5,000€ costs of holding and attending meetings, common events and experience sharing sessions (for steps 1 and 2).

f) Impact expected

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

TASK	TITLE	INDICATORS	NO
1	Consolidation, reinforcement and promotion of the regional stakeholder group.	Stakeholders group	1
		Number of stakeholders participating	10
2	Integration of the work group to combat climate change of the North Portugal Regional Coordination and Development Commission (CCDRN).	Conclusions / results report	1

TASK	TITLE	INDICATORS	NO
3	Diagnosis and identification of the main strategic elements to consider in the local action plan for the strategic management of surface water in the context of climate change.	Diagnosis Conclusions Report	1
	Definition of strategic axes and lines for the strategic management of surface water in the context of climate change – local action plan.	Local action plan	1
		Number of strategic lines defined	3
4	Integration of the local action plan in the policy instrument framework	Conclusion's report	1
All	Monitor results	Stakeholders meetings	5
		Working group meetings	5

The close monitoring of these indicators will be the purpose of the monitoring process to be carried out by CIM Alto Minho within the scope of phase 2 of BIGDATA 4RIVERS.

Finally, and in view of the content of this action plan and the expected improvements in the policy instrument resulting from the exchanges and good practices of BIGDATA 4RIVERS project it is proposed a new self-assessment performance indicator:

SELF-ASSESSMENT PERFORMANCE INDICATOR	TARGET
% of CIM Alto Minho's Territory benefiting from the definition of a strategy for the management of surface water in the context of climate change.	100

Date:
Signature:
Stamp of the organisation (if available):