DIKTAS II - Inception Workshop report:

IMPLEMENTATION OF THE STRATEGIC ACTION PROGRAM (SAP) OF THE DINARIC KARST AQUIFER SYSTEM: IMPROVING GROUNDWATER GOVERNANCE AND SUSTAINABILITY OF RELATED ECOSYSTEMS

June 2024

1. INTRODUCTION

This document reports on the DIKTAS 2 project inception phase (chapter 2), brief introduction of the DIKTAS 1 project achievements, mostly based on TDA finding and SAP priorities identified (chapter 3) as well as the DIKTAS 2 project overview in form of components, outcomes and outputs (chapter 4).

In addition the report gives overview of the implementation process with project structure and the first annual work plan (for 2024), as one of the most important parts of this document, described in detail in chapter 5.

Among other, the annexes list contain explanations of the circumstances changed from the moment of SAP adoption (2014) and the DIKTAS 2 Project Documents preparation (2018), but also changes in the period from the Project Document preparation and nowadays (Annex 7), as well as brief gender analysis of the DIKTAS 1 and gender mainstreaming (Annex 8) as well as findings regarding stakeholder participation (Annex 9).

At the end, Annex 10 give the short list of projects, recently completed or still in progress in beneficiary countries, with possible synergies with DIKTAS 2, to facilitate and accelerate some activities planned for the specific outputs.

Beside the above mentioned Annexes 7-10 the List of Annexes includes:

- Annex 1: Inception meeting agenda;
- Annex 2: List of participants;
- Annex 3: Steering Committee structure proposal;
- Annex 4: Annual work plan for 2024;
- Annex 5: Draft Budget for 2024;
- Annex 6: ToRs for local and international consultants, as well as Project Unit members;

2. INCEPTION WORKSHOP

The Inception Workshop was held in UNESCO Building, Palazzo Zorzi, Castello 4930, Venice, Italy from 4th to 5thApril 2024.The agenda of the workshop is given in the Annex 1.

Twenty fifth participants from the project countries and the project partner countries and international organisations took part in the workshop (the participant list is provided in Annex 2).

This chapter provides an overview of the workshop purpose, the main activities and the conclusions. The workshop was organised and conducted according to the guidelines provided by UNDP. At the same time, the changes and activities occurred during the project inception phase (see previous chapter) were also taken in account while conducting the workshop. This approach has provided the workshop conclusions and recommendations a broader perspective and validity.

2.1. PURPOSE AND EXPECTATIONS

The objectives of the Inception Workshop, in different aspects, are described in the Project Document and Guidance on Inception Workshops.

A fundamental objective of the Inception Workshop is to assist the project team to understand and take ownership of the project's goals and objectives, as well as finalize preparation of the project's first annual work plan (available in Annex 4) on the basis of the project's logframe matrix as well as first year budget (Annex 5).

This includes reviewing the logframe (indicators, means of verification, assumptions), imparting additional detail as needed, and on the basis of this exercise, finalizing the Annual Work Plan (AWP) with precise and measurable performance indicators and in a manner consistent with the expected outcomes for the project.

Additionally, the purpose and objectives of the Inception Workshop (IW) are to:

(i) introduce project staff with the UNDP/GEF and UNESCO-IHP team which will support the project during its implementation,
(ii) detail the roles, support services and complementary responsibilities of UNDP/GEF and UNESCO-IHP staff vis-à-vis the project team;
(iii) provide a detailed overview of UNDP/GEF reporting and Monitoring and Evaluation (M&E)requirements, with particular emphasis on the Annual Project Implementation Reviews (PIRs)and related documentation, as well as mid-term and final evaluations.

The meeting is also aimed at all parties understanding their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The terms of reference for project staff and decision making structures are to be discussed again, as needed, in order to clarify each party's responsibilities during the project implementation phase. When the time passed since the signature of the project document is significant, the Inception Workshop is used to rebuild the commitment and momentum and ensures that the project team and other stakeholders have a clear understanding of what the project seeks to achieve and their own roles in achieving the objectives.

Finally, the Inception Workshop is an important step towards establishing of the project team, support structures (e.g. Steering Committee, proposal of structure given in Annex 3) and procedures (monitoring, reporting, etc).

In the next chapter the workshop activities are presented, including their role and purpose with respect to the workshop objectives.

2.2. WORKSHOP ACTIVITIES

The workshop activities were carried out over two days (see the workshop agenda, Annex). The main workshop elements were:
a) the opening,
b) presentation of the DIKTAS 1achievements and the bridging toward DIKTAS 2,
c) presentation of the role of the Implementing Agency and Executing Agency,
d) presentations of activities related to DIKTAS 2: changes in circumstances between Project Document adoption and DIKTAS 2 beginning, development of the annual project work plan, annual budget, ToR for local and international experts as well as project unit members, and possible synergy with UN and other projects in the region.

a) Opening

The workshop was officially opened by Mr Amami Abou, Director Division of Water Sciences, Secretary, Intergovernmental Hydrological Programme UNESCO. Mr Amami Abou emphasized the importance of the DIKTAS 2 project for UNESCP-IHP and beneficiary countries and international water cooperation in the Dinaric region in general. The karst water resources are of central importance for development of the region, requiring appropriate assessment and joint management schemes.
Welcome addresses were subsequently provided by Ms Landry Magdalena, the Director of the UNESCO Regional Bureau for Science and Culture in Europe, Mr Vladimir Mamaev (UNDP) and Mr Siniša Šešum (UNESCO-IHP). On behalf of UNESCO, Ms Magdalena Landry expressed her pleasure to host the DIKTAS 2 project Inception Meeting and willing to assist in any issue related with project meeting organisation in Venice office during the project duration. Mr Mamaev introduced the GEF International Waters Focal Area and pointed out the importance of appropriate monitoring and reporting. Mr Siniša Šešum briefly introduce participants about the role of the UNESCO Antena Office in Sarajevo regarding DIKTAS 2 project.

b)Presentation of the DIKTAS 1 achievements and the bridging toward DIKTAS 2

The results of the DIKTAS Transboundary Diagnostic Analysis (TDA) that was prepared during the DIKTAS project 1 phase, was presented by Mr Siniša Šešum (chapter 3). An overview of the hydrogeological and environmental situation in the project region, based on four national reports produced during the project preparation phase was presented first, followed by an overview on legal institutional, and policy context of the TDA
In continuation of the presentations on the TDA results, the overview of the SAP was presented. The focus was on three identified priority actions:

- Joint design and testing of a regional groundwater quantity and quality monitoring network and associated data exchange and analysis protocols;
- Harmonization of criteria for (content and extend) of sanitary protection zones;
- Application and promotion of joint principles of sustainable management and equitable use of transboundary Dinaric karst aquifers.

In addition Mr Šešum briefly explain link of the SAP priority action with DIKTAS 2 five key components and related outcomes (chapter 4).
He also explained in detail the project management structure, including the composition of the project management team, the Steering Committee, Project Coordination Unit, and National Execution Units. He also elaborated on the possible composition and the role national interministerial committees and the regional consultation and information exchange body that need to be set up in the course of the project as well as the important function of the project Steering Committee (SC) in overseeing project activities and approving any changes that deviate from the Project Document, in terms of activities and budget. It was noted that the representatives of the SC yet need to be nominated by the countries.

c) Presentation of the role of Implementing Agency (UNDP) and Executing Agency (UNESCO-IHP)

In accordance with the objectives of the Inception Workshop, Mr Vladimir Mamaev introduced to the participants the Monitoring and Evaluation procedure of GEF/UNDP projects. He elaborated on the concept of adaptive management that is applied in all GEF International Waters Projects, and project management and reporting requirements and tools that are used by GEF IW projects, including monitoring the progress of project implementation (logical framework, annual work plan, and external project evaluation (Mid Term and Final Evaluation).

As logical continuation, Ms Francesca Bampa form UNESCO Venice office explain key issues on Adaptive Management, Core Indicators, Safeguards and Risk Management Strategy as well as GEF Guidance on financial management against donor requirements.

d) presentations of activities related to DIKTAS 2

The following presentation were given by technical consultants Boban Jolović:

1. Changes in circumstances between Project Document adoption and DIKTAS 2 beginning, stressed few key aspects for DIKTAS 2 project (**Annex 7**):
    - Administrative issues
    - Water Management Strategies and River Basin Management Plans update
    - Groundwater monitoring
    - TBAs boundaries delineation evolution in in Dinaric karst and further boundaries harmonization

Among other things, finding of the changes should be tool for the proposed TDA and SAP adaptation.

2. Project framework, describes in detail project components, outcomes, outputs and activities (the project overview is also given comprehensively in the next chapter); participant take very active role during presentation and proposed some additional outputs and activities, while components and outcome stay unchanged during the project period.
3. Development of the annual project work plan, as kind of the prioritization of the activities for the year 2024, where the presentation include intensive discussion with the participants.
4. Gender Analysis (**Annex 8**) and Stakeholder Involvement (**Annex 9**)
5. Annual budget, mostly based on the proposal of the overall budget per years, given in Project documents. Slight changes in budget are proposed, mostly link to component 4 and 5, or precisely outcomes 5.1 and 6.1.
6. ToR for local and international experts as well as Project Unit members, where some important changes and amendments were proposed by participants and
7. Possible synergy with UN and other projects in the region, where synergy with IAEA technical cooperation projects in area of surface and groundwater (especially those in application of isotopes in hydrology cycle) are identified as very important.

After the presentation during day 2, during fruitful discussion, next project steps are preliminary identified from representatives of the project partners and country representatives as following:

- Nomination of Steering Committee Members
- First Steering committee meeting , online , before the end of May
- Nomination of the Focal points, letter to the countries to be shared with the experts prior official submissions
- A need to revisit TDA, new existing data update, regional WG needs to be established
- SAP Update /adjustment to the present conditions , review of proposed actions

- Initiation of activities under Component 6. Communication WEB SITE
- GIS data base, IGRAC
- PMU location, BIH proposal to be submitted to the SC for review and endorsement
- Criteria for selection of sites, to be approved by SC, based on this criterial selection is to be made
    - Criteria to be shared with experts prior to the presentation to SC
    - monitoring methodology, possible collaboration with IAEA
- Data exchange
- Collaboration and synergies between WGs, for the project management, ToR of the PM, adjustments
- Budget IW learn,
- Conference in Oct 2024
- Logo to be approved by the SC, to keep the old one from DIKTAS I or develop the new one
- Communication strategy for DIKTAS II
    - Awareness raising
    - Collaboration with schools and academia
    - Materials in local languages
    - NATCOMs
    - UNESCO programmes, designations, networks, ASP,
    - International days
- Use of data for PhD students
- Possible grants for students
- ERASMUS + and Horizon Europe projects collaboration
- Adjustment of the ToR for experts
- Next year SC to take place in the country to host PMU, the meetings to follow in other countries- rotational basis, as per interest expressed by the countries
- To ensure involvement of UNDP Country offices , AL, BIH and MNE
- Collaboration with other IFI, UN Agencies and other relevant stakeholders and partners
- Once PM selected ensure collaboration with ISRBC, in coordination with participating DIKTAS II countries

3.3 CONCLUSIONS

The DIKTAS Inception Workshop has fulfilled the expectations. The workshop provided an opportunity for all parties involved in the project to understand their roles functions and responsibilities within the

project. During the presentations and discussions, the participants reconfirmed their enthusiasm and commitment to the project. New ideas for project cooperation were discussed (e.g. with DIKTAS 2 and IAEA programmes), including exchange of information (e.g. GEF projects in the region), organisation of training courses on Karst hydrogeology and management

The results of DIKTAS 1 and project objectives of implementation stage (DIKTAS 2) were clearly presented to the participants, along with the project management and supporting structure, containing the important GEF/UNDP Monitoring and Reporting procedure.

This overview allowed the participants to embark on the development of the Annual Work Plan for 2024 as well as 2024 budget.

Due to the time span of the Inception Meeting and official start of the project (ca. 16 months),

Demanding period for the project is in the period before Mid-tem evaluation (next approximately 14 months). Thus very ambitious plan for 2024 is presented.

The participants acknowledged the excellent organisation of the workshop that was provided by the UNESCO Venice office and the UNESCO office in Sarajevo.

3. ACHIEVEMENTS OF DIKTAS 1

The GEF-UNDP regional project *Protection and Sustainable Use of the Dinaric Karst Transboundary Aquifer System*, or precisely project phase 1 (further referred as: *DIKTAS 1*) was the first ever attempted globally to introduce sustainable integrated management principles in a transboundary karst freshwater aquifer of the magnitude of the Dinaric Karst System.

Following the approval of the project concept (PIF) in 2008, the GEF endorsed a one year Project Preparation Phase in order to develop the Project Document for the Full Size Project DIKTAS 1. The Preparation Phase included the preparation of a preliminary Transboundary Diagnostic Analysis.

Full size of the project or precisely its stage 1 started in 2010 and finished 2014.

At the global level the project aims at focusing the attention of the international community on the huge but vulnerable water resources contained in karst aquifers (carbonate rock formations), which are widespread globally, but poorly understood. The Dinaric Karst Aquifer System, shared by several countries and one of the world's largest, has been identified as an ideal opportunity for applying new and integrated management approaches to these unique freshwater resources and ecosystems. At the regional level the project's objectives are to;

(i) facilitate the equitable and sustainable utilization and management of the transboundary water resources of the Dinaric Karst Aquifer System, and
(ii) protect from natural and man-made hazards, including climate change, the unique groundwater dependent ecosystems that characterize the Dinaric Karst region of the Balkan Peninsula.

These objectives, which aim to contribute to the sustainable development of the region, are expected to be achieved through a concerted multi-country effort involving improvement in scientific understanding, the building of political consensus around key reforms and new policies, the enhanced coordination among countries, donors, projects and agencies, and the consolidation of national and international support.

The DIKTAS 1 project produced a better knowledge of the groundwater resources contained in the Dinaric Karst Transboundary Aquifer System and consensus on the causes of its degradation (expressed in TDA document), a consultation mechanism among the countries sharing the aquifer, formal agreement on corrective actions including policy, legal and institutional reforms, and investments, to be taken jointly (given in SAP document), and improved awareness and sustained international support. Otherwise, the Transboundary Diagnostic Analysis/Strategic Action Programme (TDA/SAP) approach (Fig. 1) is a highly collaborative process that has proven to be a major component of GEF International Waters projects over the last 26 years.

In preparation for the TDA creation, national reports[1][2][3][4], comprehensively cover key hydrogeological, social-economic, legal and stakeholder participation issues, were prepared at the very beginning of the DIKTAS 1.

There is no 'standard' approach to the TDA/SAP process: each water system and each IW Project is unique and the resultant TDA and SAP will also be unique. However, this manual provides a 'non-prescriptive', simple and stepwise approach for the TDA/SAP process that many projects have followed

[1] http://diktas.iwlearn.org/resources/projectdocuments/diktas-country-report-albania/view
[2] http://diktas.iwlearn.org/resources/projectdocuments/diktas-country-report-bosnia-and-herzegovina/view
[3] http://diktas.iwlearn.org/resources/projectdocuments/diktas-country-report-croatia/view
[4] http://diktas.iwlearn.org/resources/projectdocuments/DIKTAS%20Country%20Report%20-%20Montenegro.doc/view

over the last 26 years. It includes references and links to best practices and experiences from a wealth of completed and on-going projects.

The main technical role of a TDA is to identify, quantify, and set priorities for environmental problems that are transboundary in nature. In particular, the TDA aims to:

- Identify & prioritise the transboundary problems;
- Gather and interpret information on the environmental impacts and socio-economic consequences of each problem;
- Analyse the immediate, underlying, and root causes for each problem, and in particular identify specific practices, sources, locations, and human activity sectors from which environmental degradation arises or threatens to arise.

Ultimately, a TDA provides the factual basis for the formulation of an SAP but the TDA is also part of a larger facilitative process of engagement and consultation with all the key stakeholders from the initial TDA steps through to the subsequent development of alternative solutions during the formulation of the Strategic Action Programme. The TDA is a mechanism to help the participating countries to 'agree on the facts' - many conflicts are driven by perceptions and removing these can be an enormous step in itself. Furthermore, the TDA should be seen as more than just an analysis of data and information. It is a powerful process that can help create confidence among the partners involved.

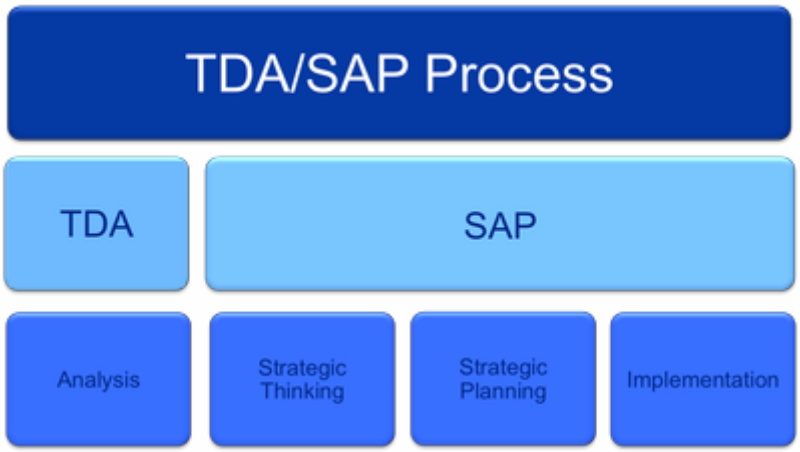


Fig. 1: *A simple schematic of the process is outline*

The following are some of the key underlying principles incorporated into the TDA/SAP approach:

- Adaptive management
- The ecosystem approach
- Sustainable development
- Poverty reduction
- Gender mainstreaming
- Climate variability and change
- Collaboration
- Stakeholder consultation and participation
- Stepwise consensus building
- Transparency
- Accountability
- Inter-sectoral policy building
- Donor partnerships
- Government commitment

a. DIKTAS TRANSBOUNDARY ANALYSES (TDA) RESULTS

The Transboundary Diagnostic Analysis (TDA) showed that the state of groundwater in the DIKTAS project region is generally good in terms of both quantity and quality with a few exceptions, but with a number of serious potential threats. The main threat to the overall groundwater quality in the DIKTAS region is solid waste and wastewater disposal. There are hundreds of unregulated landfills and illegal dumping sites in the four project countries. The number of wastewater treatment plants is insufficient, with about half of the population not connected to this service.

For the vulnerable karst environment of the Dinaric region, which has a very limited auto-purification capacity, this is the most serious current as well as potential future problem. To a lesser degree, karst groundwater resources in the region are also contaminated by agricultural and industrial activities.

Currently no common legal framework and no common criteria exist for: a) the delineation of water source sanitary protection zones, b) setting cost-efficient measures for groundwater protection in the Dinaric Karst region, c) arrangements ensuring that each country establish sanitary zones for water sources located and used in neighbouring country. This was identified as the main issue of concern in sections of the DIKTAS with centralized public water supply systems: Trebišnjica, Neretva, Cetina and Una. It is worth to mention that concrete actions have been done between B&H and Croatia in 2010.

Actually, the Working Group for the elaboration of guidelines for defining water protection zones in karst areas, established by Sub-Commissions[5] for Adriatic catchment area and Black Sea catchment, has elaborated the "*Proposal for the protection system and investigation methods for protection of karst aquifers located in the bordering areas of B&H and Croatia*".

This Proposal includes, amongst others, the part of a Rulebook (Agreement) on determination of sanitary protection zones of the water sources located in the bordering areas of Croatia and Bosnia & Herzegovina.

There is a significant concern of some stakeholders about hydropower production in the region, especially in Bosnia & Herzegovina, including the impacts of hydropower infrastructure in the transboundary areas of Trebišnjica and Bilećko Lake. With the disintegration of Yugoslavia, this issue has acquired transboundary dimensions and has become very prominent. The concern is not only environmental but also economic and political. The complexity of the karst environment, especially in terms of predictions, further complicates the resolution of the identified concerns. This also confirms that the definition of water resources development strategies in the Dinaric karst area based on sound governance principles is a key requirement for regional socio-economic development.

A major added value of the TDA can be seen in the collection and harmonization of a large amount of data and information relevant for the assessment and management of karst groundwater resources in the region. This gathered information was not always complete and, in some cases, there were still significant information gaps.

Nevertheless, the DIKTASTDA was the first thorough regional groundwater analysis that covered Albania, Montenegro, Bosnia and Herzegovina and Croatia. The analysis included hydrogeological characterization, as well as social, economic, legal and regulatory aspects of the groundwater resources management in the region. Outputs of the TDA, including GIS materials such as thematic maps and databases and quantitative hydrogeologic analyses, form the basis for developing groundwater resources management models at both regional and local scales.

[5]In the frame of Bilateral Agreement5 on improvement of water management between BiH and Croatia, the Commission for water management of BiH and Croatia was established, consisting of representatives from BiHand,Croatia , including both BiH's entities (FB&H and RS), as well as the two Sub-Commissions for Adriatic catchment area and Black Sea catchment area, also consisting of representatives from BiH and Croatia.

3.1. Transboundary implications

Although all of the West Balkan countries have fresh water resources sufficient to meet the needs of sustainable development, climate change is expected to further disrupt already highly variable water regimes. As the requirements for drinking water grow especially during summer months, and the demands for hydropower production and irrigation generally increase, the water resources of the region may come under pressure from users with conflicting interests. The international boundaries add yet another element of complexity.

Twenty years ago, the Balkans had six international river basins. Now, as a result of the new international borders, they have thirteen, as well as four transboundary lake basins. In terms of exposure and sensitivity, water resources in the Balkans are particularly vulnerable to climate change, and what happens in the water sector will influence what happens in agriculture and energy, two other highly vulnerable sectors.

The implications for the development of adaptation strategies are enormous. The water resources problem is more regional than national in scale, and effective adaptation in the region cannot occur on a strict country-by-country basis. This means that the Balkan countries must work together on regional adaptive strategies, and that their capacity to cooperate on mutual problems is a major element in their overall adaptive capacity.

3.2. Major issues of transboundary concern

Major issues of concerns were identified for the most significant areas of aquifer transboundary influence shared by the DIKTAS project countries, named after the related rivers/surface water bodies: Una, Cetina, Neretva, Trebišnjica, Bilećko Lake and Cemi/Cijevna and Piva.

The analysis has shown that transboundary aquifers have some unique major issues of concern and some that are shared. Specifically, TBAs Una, Trebišnjica, and Bilećko Lake share the issues of absence of a comprehensive groundwater monitoring program, including a necessary bilateral agreement and lack of a database on point and non-point sources of surface water and groundwater contamination (landfills, septic tanks, quarries, wastewater discharges and others).

The lack of defined sanitary zones and uncontrolled collection and treatment of sewage water that is usually discharged into the ground are mainly issues for the TBAsCemi/Cijevna and Cetina. The absence of harmonized criteria for delineation of the sanitary protection zones by applying one common rulebook affects the Una, Trebišnjica, Neretva and CetinaTBAs, as well as the absence of adequate legal mechanism for establishment and law enforcement in sanitary protection zones. The important issues for the Una, Trebišnjica, Neretva and Cetina aquifers are to prepare and put in practice the legal framework which will enable that relevant planning documents which include protection zones for "cross-border sources" with clearly defined principles for defining mutual rights and obligations of bordering states as well as preparation of harmonized criteria for delineation of the sanitary protection zones. Tourism can trigger significant economic development and additional water abstraction that needs to be planned for; this is a issue for both the Una and Trebišnjica TBAs. Specific major issues of transboundary concern are provided in Table 1.

b. DIKTAS STRATEGIC ACTION PROGRAMME (SAP) FINDINGS

Based on the outcomes of the TDA and other DIKTAS project activities, a Strategic Action Program was discussed and agreed upon by the National-inter-ministerial Committees (NICs) of the project countries and by the project Steering Committee, and finally endorsed by the countries. The SAP was based on the agreed upon regional vision “to achieve joint sustainable and equitable use and protection of Dinaric karst aquifer system”. To assist in attaining the vision for the Dinaric karst aquifer system, five

(water resources and environmental) long-term objectives were defined: 1) Provide sufficient groundwater quantities in dry periods, particularly for the drinking water supply and maintenance of environmental flow; 2) Maintain and improve (where needed) the quality of groundwater in the Dinaric region; 3) Ensure protection of groundwater-dependent ecosystems, their specific characteristics and ecosystem services for the future; 4) Support equitable allocation of groundwater resources; 5) Raise awareness and build capacities related to karst water and their dependent ecosystems.

Table 1: *TDA identified major issue of concern*

Major issue of concern	Basin
Possible microbiological contamination of karst springs in the Bihać region (B&H) due to lack of wastewater treatment (mostly from Croatia); Possible contamination of karst springs in the Bihać region (B&H) by spills of PCBs from destroyed military installations including Željava Airport in the very state border area and Udbina which is located in Croatia; Absence of reliable data on groundwater consumption in rural areas without a centralized water supply; Existence of big cities close to TBA can project pressures on the TBAs environmentally due to extensive economic demands.	Una
Lack of water users' analysis; Sanitary outflow from rural settlements is mostly unregulated (usually septic tanks that allow discharge in the ground); Construction of a hydro-power plant in the upper part of the Trebišnjica catchment is considered as an issue of concern by some stakeholders because of the possible change of water regime Downstream (Neretva River basin).	Trebišnjica
Possible contamination of the Prud spring utilized for water supply of several Croatian islands by nitrates, pesticides and phosphates as a result of agriculture activities in the LjubuškoPolje (B&H); Possible of contamination of the Prud spring due to the inadequate wastewater collection and treatment system of the town of Ljubuški; Possible contamination of the Neretva delta area due to the extensive use (or use of illegal types) of pesticides and fertilizers.	Neretva
Poor implementation of protection measures of drinking water in B&H; good implementation in Croatia; Possible water pollution at the springs in Croatia due to inadequate wastewater collection and treatment systems of settlements in BiH; Probable negative consequences on water quality due to the plans for developing large open pit coal mines in Duvanjsko and LivanjskoPoljes; Unregulated and/or unplanned economic activities based on the absence or abundance of water in the area.	Cetina
A concern from Montenegro is that although a part of Bilećko Lake's catchment area is in Montenegrin territory, Montenegro doesn't share benefits from the hydropower generated by using water from BilećkoLake.Water from Bilećko Lake is used for water supply of the Herceg Novi municipality. The concern of Montenegro is that Montenegro pays a high price to the communal company of Konavle in Croatia for transfer of water to Herceg Novi. Connection of city to the Regional waterworks for Montenegrin Coast which will solve this late problem is underway.	Bilećko Lake
Lack of a sewage system in almost all the settlements in the TDA zone; A high degree of vulnerability of the karst aquifers because of the lack of vegetative cover and forests; Water exploitation and discharge without permits or control by the authorities; Lack of an appropriate drinking water system (water pipelines are local and amortized).	Cemi/Cijevna

The discussion among the countries resulted in a decision to produce a short document focused on key actions needed to enable the coordinated and cooperative actions by the countries aiming at achieving the above long-term objectives. The SAP hence focuses on three Strategic Actions (Table 2), to be implemented within a limited time span of 5 years. The proposed Strategic Actions are considered to be of highest contribution to the long-term objectives and to the Water Framework Directive (WFD) requirements, taking into account specifics of the Dinaric karst. The strategic Action1 (on groundwater quantity and quality monitoring) consider as a major climate adaptation measure, dealing concretely with issue of water shortage in dry periods and sustainable environmental flow.

Accordingly, this action includes testing/implementation to encourage future replication in the region and elsewhere.

Table 2: *SAP priority actions*

Priority Action	Expected Results
Joint design and testing of a regional groundwater quantity and quality monitoring network and associated data exchange and analysis protocols	A common methodology to establish groundwater quantity and quality monitoring network in the entire Dinaric karst region will be adopted and a monitoring programme will be prepared for all the identified transboundary aquifers, including the optimal/minimal monitoring density and frequency, and an estimate of costs and time required for the program implementation
Harmonization of criteria for (content and extend) of sanitary protection zones.	Bilateral / multilateral agreements on the preparation of the joint Rulebook and guidelines for its implementation agreed and signed. The DIKTAS-level Rulebook prepared, agreed and adopted.
Application and promotion of joint principles of sustainable management and equitable use of transboundary Dinaric karst aquifers.	A multilateral agreement on the establishment and functioning of the Consultation and Information Exchange Body (CIE) and its Secretariat prepared. Coordinated measures to protect karst GWDEs prepared. Awareness of the public, local population and target groups raised.

4. DIKTAS 2 PROJECT OVERVIEW

This chapter is fully based on chapter 3 of the Project document Results and Partnership, subchapter 3.1. Expected Results.
While Components and Outcome stay unchangeable during the project period, Outputs and related actions should be considered as adaptable, depend on changes of circumstances and beneficiary countries suggestions.

The acronym DIKTAS 2 is further used for full project name: Implementation of the strategic action program (SAP) of the Dinaric karst aquifer system: improving groundwater governance and sustainability of related ecosystems.

Brief project description:

The proposed project draws inspiration from the results of the GEF project "Groundwater Governance" and intends to implement the main steps recommended in the "Global Framework for Action" for setting the basis of sound groundwater governance in the Dinaric Karst region.

This approach and vision perfectly adhere to the conclusions reached by the countries sharing the DIKTAS that are enshrined in the Strategic Action Program (SAP) for the DIKTAS prepared by the countries and endorsed at ministerial level.

The project objective is to catalyze effective multicountry cooperation for the sustainable management of the Dinaric Karst Aquifer System and its ecological resources by strengthening national and regional groundwater governance frameworks and institutional capacity.

The Dinaric karst system represents a geologically heterogeneous, south European orogenic belt of the Alpine Mountain chain and is considered as the classic karst region worldwide. In fact, the term "karst" was born in the area, and this is where the foundation of karst hydrogeology was set by establishing that carbonate rock dissolution was the key karstic process that created most types of dolines, the diagnostic karst landforms. The term "karst" is now applied to modern and paleo dissolution phenomena worldwide.

Some local terms were accepted, and are still used, in international karst terminology (e.g., ponor, doline, uvala, and polje).

The Transboundary Diagnostic Analysis (TDA) provided in DIKTAS 1 showed that the state of groundwater in the DIKTAS project region is generally good in terms of both quantity and quality with a few exceptions, but with a number of serious potential threats. The main threats are explained in Chapter 1. For the vulnerable karst environment of the Dinaric region, which has a very limited auto-purification capacity, this is the most serious current as well as potential future problem. To a lesser degree, karst groundwater resources in the region are also contaminated by agricultural and industrial activities.

This project addresses both GEF 6 IW Objective 1: 'Catalyze sustainable management of transboundary water systems by supporting multi-state co-operation through foundational capacity building, target research and portfolio learning' and IW Objective 2: ´Catalyze investments to balance competing water-uses in the management of transboundary surface and groundwater and enhancing multi-state co-operation'.

To initiate the implementation of the agreed SAP, contributions will be made to six outcomes associated of five components, in detail explained in chapter 3.

Some project circumstances were changed from the period of the Project Document preparation and particularly from the period of SAP preparation. The following subchapters reflect some very important issue regarding the changes.

4.1. THE PROJECT RESULTS FRAMEWORK (LOGFRAME) AND A REVIEW OF THE PROJECT'S GOALS, OBJECTIVES, OUTCOMES, AND OUTPUTS

Project objective, catalyse effective multi-country cooperation for the sustainable management ofthe Dinaric Karst Aquifer System and its ecological resources by strengthening national and regional groundwater governance frameworks and institutional capacity,should be provided by 5 components.

COMPONENT 1. FACILITATING MULTI-COUNTRY COOPERATION(SAP ACTION 3)

OUTCOME 1: INSTITUTIONALIZATION OF PERIODIC MULTI-COUNTRY EXPERT CONSULTATIONS AND INFORMATION EXCHANGES, AND CREATION AND STRENGTHENING OF BILATERAL/MULTILATERAL CONFLICT RESOLUTION MECHANISMS PROVIDE THE TRANSBOUNDARY COOPERATION FRAMEWORK CRUCIAL FOR THE SUSTAINABLE UTILIZATION OF SHARED KARST WATERS, AND FOR THE PROTECTION OF THE DINARIC KARST ECOSYSTEMS. (SAP ACTION 3)

Three Joint Expert Groups will lead project activities on issues related to groundwater governance and monitoring, conjunctive management of surface and groundwater, land use, agricultural practices, waste management, climate resilience, energy production, and protection of karst ecosystems services. Through the joint work for the conduct of the transboundary diagnostic analysis and the formulation of the strategic action program, the four participating countries have reached a level of mutual trust and shared understanding of the DIKTAS and of the sections of the aquifer system more prone to transboundary impacts sufficient to enable them to commit to a multi-country cooperation mechanism for the improved management of the shared groundwater resource. Any such mechanism at the level of the whole aquifer is lacking at present in the region, while bilateral agreements of limited scope involve transboundary sections of the DIKTAS. A Consultative and Information Exchange (CIE) body/mechanism of the four countries would consolidate the countries' systematic commitment to cooperative management, and provide a concrete response to the call of the science community of the region that identified as key priority "... to gain a better mutual understanding of the peculiar properties and functions of the Dinaric Karst Aquifer System, and to adopt policies for its joint management, based on a regional consultative and management mechanism".
It is now becoming apparent that the social and economic impacts of the present health emergency situation due to the COVID-19 pandemic will have negative effects on jobs and livelihoods in many sectors, including those related to freshwater resources. The current and potential future impacts will be considered during the TDAs compilation by The project, by facilitating transboundary cooperation and behavioral changes in the conservation of the integrity of freshwater ecosystems, and fostering environmentally sustainable water resources management the two basins, will produce ancillary benefits that will help alleviate and mitigate COVID-19 long-term impacts on people's health and welfare, and open the way for new job opportunities in the water and environmental sectors (e.g.: surface and groundwater management, inland fisheries, biodiversity protection, tourism).

Short-term constraints on travel and group gatherings are being considered and on-line or remote learning and communication options will be used where necessary, adjusting some of the equipment related costs to ensure equal opportunity to all beneficiaries.
Four outputs are comprised by component 1.

Output 1.1:
Joint multi-disciplinary thematic expert groups established by project countries and the support of Project agencies.

Output 1.2:
Draft multilateral agreement on the establishment of Consultation and Information Exchange Body (CIE) and its Secretariat prepared for governments approval.

Output 1.3:
Bilateral Agreements and Bodies. Options for the creation of bilateral agreements and management bodies to address the issues of concern in areas/basins of transboundary influence (Transboundary Aquifers), and/or the strengthening of existing ones, will be formulated for decision by governments.

Output 1.4:
Stakeholder involvement plan formulated and implemented, including special focus on gender issues and women empowerment.

COMPONENT 2. INSTITUTIONAL STRENGTHENING FOR IMPROVED GROUNDWATER GOVERNANCE (SAP ACTIONS 2 AND 3)

OUTCOME 2: ADOPTION OF SOUND GROUNDWATER GOVERNANCE PRINCIPLES AND FRAMEWORKS, INCLUDING EMPHASIS ON SANITARY PROTECTION ZONES, HARMONIZED ACROSS THE DINARIC KARST AQUIFER SYSTEM, FACILITATED THROUGH THE APPLICATION OF THE METHODOLOGY DEVELOPED BY THE GROUNDWATER GOVERNANCE GEF PROJECT.

Groundwater Governance Diagnostics will includes in focus of this component. The activities are explained in detail in the next chapter (subchapter 4.3.1.).
As mentioned in chapter 3, legal framework will target societal goals of sustainable and efficient development and use and equitable sharing of benefits, the full compliance with the WFD, and the harmonization with other relevant sectors. It will be based on four basic provisions: Groundwater brought into the public domain; Licensing of water-well construction and groundwater extraction; Control of 'point-source of pollution of groundwater; Requirement for transparency and sharing of data collected by all groundwater users, private and public.
Capacity building will be developed through a number of formal joint international and national training courses and enhanced through the creation of National Execution Units that will carry out project activities at the national level under the oversight of the Implementing Partner and in collaboration with the Joint Thematic Expert Groups. These Units will be funded by the participating countries as part of their counterpart co-financing to the project.
Related outputs with this outcome are:

Output 2.1:
Groundwater governance diagnostic analysis in all project countries, including a stocktaking of the governance situation — actors, legal framework, policies and plans, adherence to the EU WFD and GWD, available knowledge, enforcement capacity — and an assessment of gaps and opportunities.

Output 2.2:
National policy, legal and institutional developments defined and harmonized across countries on laws and regulations regarding groundwater with focus on sanitary protection zones. Proposed policies and developments will be submitted to Governments for adoption.

Output 2.3:
Training courses among others on: hydro diplomacy; international water law, legal instruments and soft laws; groundwater governance (based on the guidelines produced by the GEF/FAO Groundwater Governance project); gender analysis and sex disaggregated data collection; land use policy and practice in karst terrains; enforcement of sanitary protection zones around springs and other karst features and ecosystems; Maintaining seasonal variations of karst waters and ensuring stable water supply; Study tour for water administrators and decision makers will be organized.

COMPONENT 3. MONITORING KARST WATERS AND DEPENDENT ECOSYSTEMS (SAP ACTION 1)

OUTCOME 3: MODERN MULTI-PURPOSE MONITORING OF KARST GROUNDWATER ENABLES RESPONSIBLE ENTITIES AT THE LOCAL AND AT THE REGIONAL LEVEL TO EFFECTIVELY MANAGE THE SHARED KARSTIC WATERS AND DEPENDENT ECOSYSTEMS

Since none of the three beneficiary countries has a complete and operational network for systematic monitoring of groundwater quality/quantity the SAP calls for the improvement of the groundwater monitoring networks throughout the region. The project will facilitate this investment by the countries by producing an agreed upon design of the network and its protocols, implementing on the ground demonstration networks and a joint data sharing mechanism across the countries.

Output 3.1:
Design of DIKTAS-wide groundwater multi-purpose Monitoring network, including: purpose, variables, network design and optimization, data management, institutional arrangements, harmonized across the countries.

Output 3.2:
Monitoring network design tested on the ground and two full-scale demonstration monitoring networks, and related infrastructure, implemented in two selected areas of transboundary and environmental concern.

OUTCOME 4: AGREEMENT ON REAL-TIME HARMONIZED DATA SHARING ENABLES EFFECTIVE TRANSBOUNDARY COOPERATION.

If possible, the sharing mechanism will use a GIS-based and real-time online database.

Output 4.1:
Joint data sharing mechanism: joint design and implementation of a real-time data sharing mechanism and harmonization of different national classification standards of water quality, following EU guidelines.

COMPONENT 4. FOCUS ON AREAS OF TRANSBOUNDARY INFLUENCE AND OF SPECIAL CONCERN (SAP ACTION 2)

OUTCOME 5:DEFINITION OF NATIONAL AND/OR BINATIONAL ACTION PROGRAMMES, AND OF DIKTAS WIDE GUIDELINES FOR REVERSING DEGRADATION TRENDS IN HIGHLY VULNERABLE AREAS ACCELERATES REMEDIAL ACTIONS (SAP ACTIONS 1,2 AND 3)

The Joint Action Programs will address the:

- Establishment of a common groundwater monitoring program.
- Adoption of harmonized criteria for the delineation of sanitary protection zones and setbacks (springs, sinkholes and other karstic features, wells).
- Definition and adoption of harmonized policies and practices for storm-water and wastewater management, and for domestic and solid waste disposal.
- Establishment of special protected areas for most valuable karstic features and related biodiversity.
- Identification of pollution sources for each TBA and development of a methodology for prioritization of the remedial measures.

Output 5.1:
Joint Action Programmes for all 6 areas of transboundary influence identified in the TDA, including previously prepared such as the:

1. methodology for GWR assessment on TBA level
2. concept for Water Master Plans for 6 TBAs
3. tested methodology in 2 pilot TB areas

Output 5.2:
The DIKTAS Rulebook and guidelines on DIKTAS proposal for delineation of sanitary protection zones and measures for solid and liquid waste disposal.

COMPONENT 5. AWARENESS RAISING AND GENDER MAINSTREAMING (SAP ACTION 3)

OUTCOME 6: INCREASED AWARENESS AMONG STAKEHOLDERS, DISSEMINATION OF PROJECT'S ACHIEVEMENTS AND LESSONS LEARNED, AND STRENGTHENED GENDER EQUALITY AND WOMEN EMPOWERMENT FACILITATE ADOPTION OF GOOD PRACTICES AND POLICIES. (SAP ACTION 3)

Awareness raising and knowledge management are important aspects of the project, directly incorporated into several of the project outputs. Related outputs are:

Output 6.1:
Awareness raising events, dissemination products and education.

Output 6.2:
Gender analysis conducted in project countries water sector.

Output 6.3:
Participation in IW LEARN activities.

5. OVERVIEW OF THE PROJECT IMPLEMENTATION PROCESS WITH DETAIL AWP FOR YEAR 1

5.1. PROJECT PERIOD

Project duration is 5 years (60 months).

5.2. ORGANIZATION STRUCTURE – ROLES AND RESPONSIBILITIES

As usually for this kind of GEF projects organization tree given in the Project Document (figure 2) is proposed as:

Steering committee: development partners, project executive, 2 representatives of beneficiary countries (leader and substitution) (Annex 3)
Project management unit: project manager, secretary, GIS expert.
Experts: national supported by international experts (ToR for each given in Annex C of the Project Document)

- Expert Group 1 will include two representatives from each project country (one local hydrogeologist and one local biologist) plus international consultants.
- Expert Group 2 will include two representatives from each project country (preferably one local lawyer and one local sociologist) plus international consultants.
- Expert Group 3 will include one local media expert from each country plus international consultants.

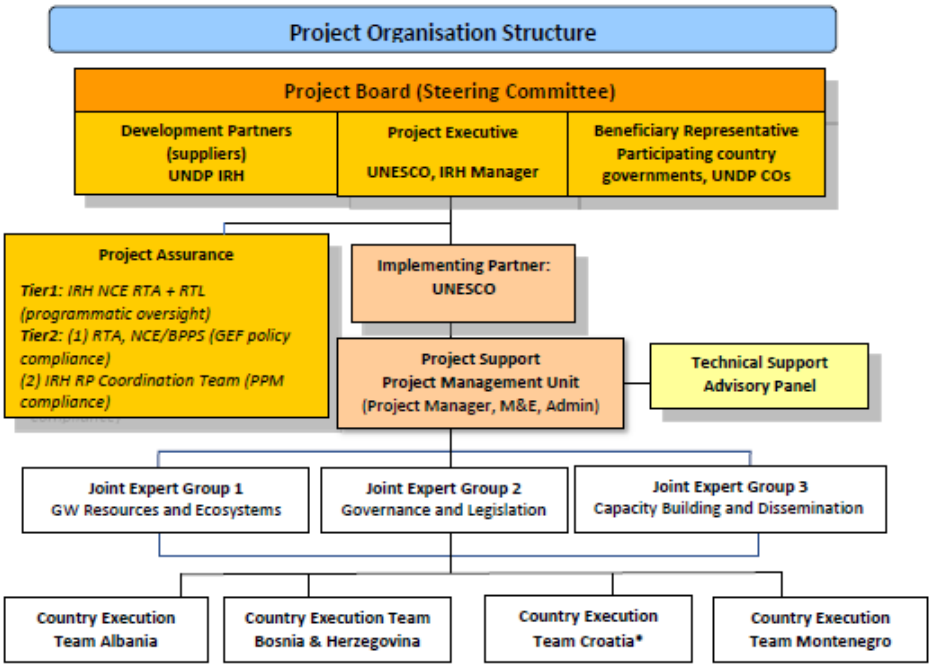


Fig. 2: *Project organization structure*[6]

[6]IMPLEMENTATION OF THE STRATEGIC ACTION PROGRAM (SAP) 0F THE DINARIC KARST AQUIFER SYSTEM: IMPROVING GROUNDWATER GOVERNANCE AND SUSTAINABILITY 0F RELATED ECOSYSTEMS DIKTAS II, UNDP Project Document UNESCO IHP, PIMS 5776, 2019

5.3. PROPOSAL OF ANNUAL WORK PLAN FOR THE FIRST PROJECT YEAR 2024

The Annual Work Plan for the first year (2024) is based on the Section 3 of the DIKTAS2 Project Document. The Annual Work plan is fully in line with the project main activities described in the Project Document (Chapter 3.1),ANNEX A. Multi-year work plan (Annex A of Project Document) and chapter 3 (logframe) of this document, without any substantial changes.
Nevertheless, any alterations and further specification of the outputs and activities (as described in the Project Document) have been applied as part of the adaptive management framework (figure below).

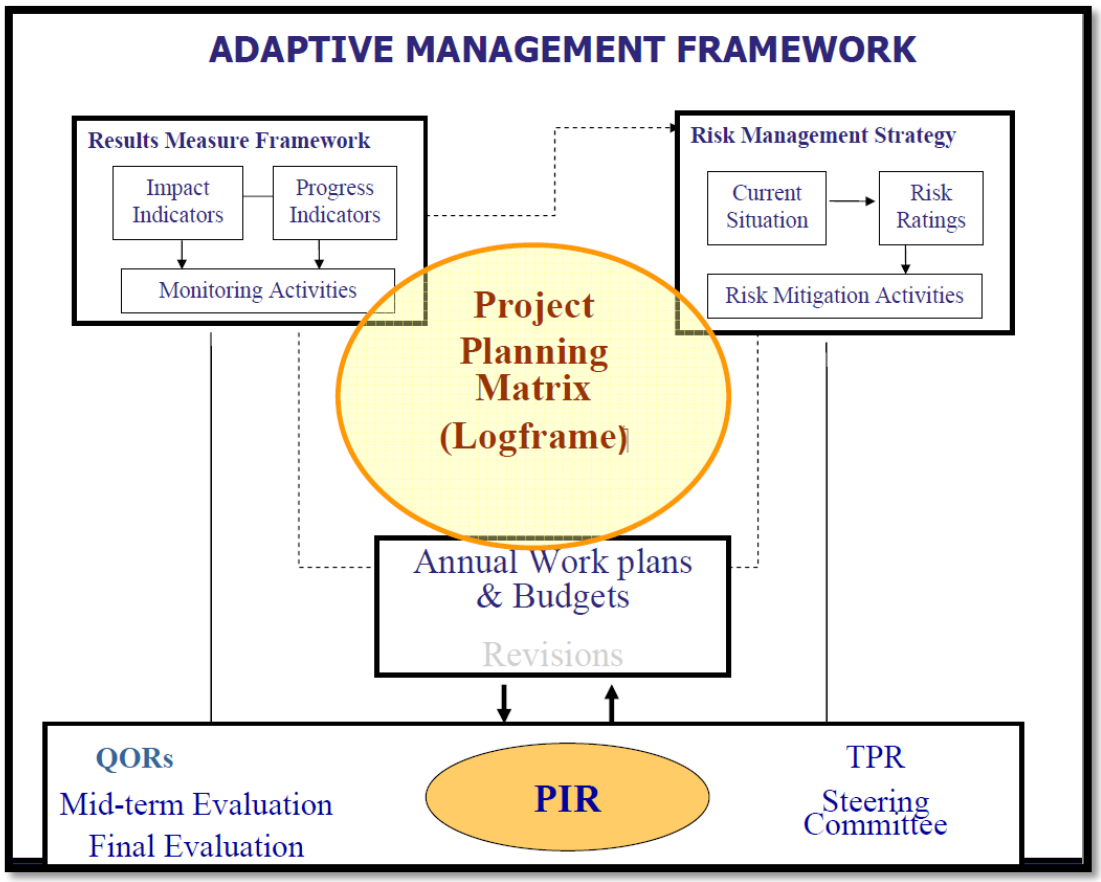


Fig. 3: *Adaptive management framework*[7]

The main change regarding exact dates isdue to delay in starting the implementation of project activities, while time framework, expressed as number of the months in activities stays similar. The extension of the project by the same amount of time is foreseen and will be discussed during the first Steering Committee meeting.
The Annual Work Plan for the first year of project implementation, for2024, is presented in the following part of n this chapter and summarised in the Annex 4, with draft budget (Annex 5). The table includes an overview of main activities, their relation with project outcomes and outputs and remarks on responsibilities and deadlines. The activities not planned to start in the above mentioned period or later are just mentioned in the table or (if relevant for the understanding of first project year activities) very briefly described in the text.
The DIKTAS project consists of five components, each of them related to a certain outcome, as presented in chapter 3 (based on Project Document, Chapter 3.1). The activities (individual or grouped) provide outputs required to reach projected outcomes. A total of 15 outputs are defined in the Project Document.

[7] https://iwlearn.net/resolveuid/b4ee8517-297b-4f66-9c31-f39d391e0094

In line with proposal, in the first year of project implementation, the main activities will be those related to the project Component 1and 3 (Table 1). In addition the Component 2, 4 and 5 activities will be touched, but less than above two mentioned.
However, one of the recommendations of this document is to start some of these activities earlier, as require a longer preparation than previously foreseen. This conclusion has been implemented in the Annual Work Plan, being conditioned by the progress of other activities and available project capacity. During 2024 the following outputs will be in focus:

- **Output 1.1:** Joint multi-disciplinary thematic expert groups established.
- **Output 1.2:** Draft multilateral agreement on the establishment of Consultation and Information Exchange Body (CIE) and its Secretariat prepared for governments approval.
- **Output 1.3:** Bilateral Agreements and Bodies. Options for the creation of bilateral agreements and management bodies to address the issues of concern in areas/basins of transboundary influence (Transboundary Aquifers of the TDA), and/or the strengthening of existing ones, will be formulated for decision by governments.
- **Output 1.4: Stakeholder involvement plan** formulated and implemented, including special focus on gender issues and women empowerment.
- **Output 2.1:** Groundwater governance diagnostic analysis in all project countries, including a stocktaking of the governance situation — actors, legal framework, policies and plans, adherence to the EU WFD and GWD, available knowledge, enforcement capacity and an assessment of gaps and opportunities.
- **Output 3.1:** Design of DIKTAS-wide groundwater multi-purpose Monitoring network, including: purpose, variables, network design and optimization, data management, institutional arrangements, harmonized across the countries.
- **Output 4.1:** Joint data sharing mechanism: joint design and implementation of a real-time data sharing mechanism and harmonization of different national classification standards of water quality, following EU guidelines.
- **Output 5.1:** Joint Action Programmes for all 6 areas of transboundary influence identified in the TDA, including previously prepared such as:1. methodology for GWR assessment on TBA level; 2. Concept for Water Master Plans for 6 TBAs.
- **Output 6.1:** Awareness raising events, dissemination products and education.

Draft timeframe and responsibilities in the first AWP are given in Annex 4. More detail explanation is given in the following subchapter.

5.3.1. Detail explanation of AWP for year 1 (2024)

OUTCOME 1

As one of the key steps in the first year of the project, three Joint Expert Groups should be established during the first three month of year 1. The groups will lead project activities on issues related to groundwater governance and monitoring, conjunctive management of surface and groundwater, land use, agricultural practices, waste management, climate resilience, energy production, and protection of karst ecosystems services.
Based on the above elements, a Multilateral Agreement will be prepared in close cooperation with the National Inter-Ministerial Committees (NICs) in each country, which will then be submitted to and discussed for eventual adoption at a high level in all project participating countries. National Interministerial Committees were active during the foundational phase (TDA-SAP) and were instrumental to the definition of the SAP. These bodies will be re-established in countries with the participation of high-ranking members across the ministries (agriculture, mining, energy, finance, planning and water, but also other ministries as relevant and if they have a mandate within wastewater/solid waste pollution issues), and together with the Joint Thematic Expert Groups will

participate to the establishment of the CIE and its Secretariat, and to the definition of their tasks and regulations.
Beside multilateral, countries will be fostered to establish bilateral agreement in each TBA and any specific issue.
Stakeholder involvement is relevant for each output, with clearly identified groups for each output, considering gender issues and women empowerment.

Output 1.1: Joint multi-disciplinary thematic expert groups established.

Joint multi-disciplinary thematic expert groups must be established by project countries and the support of Project agencies.
Three groups dealing with: 1. GW Resources and Eco-Systems Management; 2. Governance and Legislation; 3. Capacity Building, Dissemination and Public Participation, will be established with the following composition:

- Group 1 will include two representatives from each project country (one local hydrogeologist and one local biologist) plus international consultants.
- Group 2 will include two representatives from each project country (preferably one local lawyer and one local sociologist) plus international consultants.
- Group 3 will include one local media expert from each country plus international consultants.

The ToR for each consultant is given in the Project Document, Annex C and still can be improved by Project Agencies during and after the Inception Meeting, based on comments received during the meeting. Selection of the expert must be finished as soon as possible, as one of key prerequisite for the implementation (in best way 1 month after the Inception Meeting).

Output 1.2: Draft multilateral agreement on the establishment of Consultation and Information Exchange Body (CIE) and its Secretariat prepared for governments approval

The project will foster a Multilateral Agreement on the establishment of a Consultation and Information Exchange body, including technical support from the "multi-disciplinary thematic expert groups "established by the project, and the long-term sustainability of the information exchange mechanism.
Beneficiary countries have a wide experience in international cooperation for the protection and sustainable use of transboundary waters. The countries are part of multilateral framework conventions and have bilateral and multilateral agreements at the ministerial level among themselves, covering transboundary water issues.
Albania, Bosnia & Herzegovina, Croatia and Montenegro are parties to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UN Economic Commission for Europe, 1992) and to the Protocol on Water and Health (1999), adopted under this Convention. Countries are signatories to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) adopted in 1976. As regards multilateral agreements, Bosnia and Herzegovina, Croatia and Montenegro are parties to the Convention on Co-operation for the Protection and Sustainable Use of the River Danube (Danube River Protection Convention) (1994).
Furthermore, Bosnia and Herzegovina and Croatia are also parties to the Framework agreement on the Sava River Basin (signed in 2002, in force in 2004), which was the basis for establishment of the International Sava River Basin Commission (ISRBC) in 2005, aiming to transboundary cooperation for sustainable development of the region. The International Sava River Basin Commission and Montenegro signed a Memorandum of Understanding in Belgrade in December 2013. Project countries have bilateral agreements on water management issues, related to transboundary water bodies, such as the agreement between Albania and Montenegro (signed on 14 December 2010), which covers the Basin of Shkodra Lake, Driniand Buna rivers, and related to the water streams at the border, such as agreement between Croatia and Bosnia and Herzegovina.5 All four countries have also some bilateral

agreements with their neighbouring countries. As such, Albania has signed an agreement with Republic of North Macedonian the "Protection and sustainable development of Ohrid Lake and its watershed". In November 2011a Memorandum of Understanding was signed between Drin Basin countries.
Based on the above mentioned multilateral/bilateral experienced of the countries, but not just restricted on the above mentioned, International experts in Law / Governance and Socio-economic/Legal Policy Group should draft Multilateral Agreement on the establishment of a Consultation and Information Exchange body.
The body, should to represent the backbone of the project in sense of legal framework for technical cooperation, not just during the project but with intention to be a tool in post-project period.
It is foreseen the draft be prepared in first 6 month of the project. In approximately 2-3 months it should be issue of consultation with beneficiary countries and the expert group must provide strong cooperation with beneficiary representatives to prepare final version.

Output 1.3: Bilateral Agreements and Bodies. Options for the creation of bilateral agreements and management bodies to address the issues of concern in areas/basins of transboundary influence (Transboundary Aquifers of the TDA), and/or the strengthening of existing ones, will be formulated for decision by governments.

The countries are encouraged to propose and discuss any kind of bilateral agreement help in achieving of the outcomes and overall project goal. Some of these agreements are considered, but not exhausted, as:
• on the establishment of a common methodology/approach for monitoring of quantitative elements of the ecological status of transboundary surface waters in contact with groundwater;
• oninformation exchange on bilateral level and creation of appropriate legal instrument (eg. memorandum of understanding or agreement).
• on the creation of a common Rulebook or Guide prescribing common criteria and methodologies to determine cross-border sanitary protection zones and cost-effective protection measures.
• on approach for the application of measures to prevent the entry of hazardous substances and other pollutants into karst groundwater;
• on measures and activities to be applied by economic entities (point source of pollution) in case of extraordinary and sudden pollution.

Output 1.4: Stakeholder involvement plan formulated and implemented, including special focus on gender issues and women empowerment.

Preparation of the output will be facilitated on the achievements of the DIKTAS 1, The Stakeholders and Public Participation Strategy[8] was prepared, as a part of the Communication, Dissemination and Replication Activities of the DIKTAS Project. As stakeholder involvement plan is closely linked to this analysis, during the DIKTAS 2 Stakeholder Involvement Plan will be prepared as kind of the update of the mentioned document.
The plan aim to help to decide which types of communication and messaging will be most successful. This must help to minimize negative perceptions, amplify positive impacts, and resolve conflicts. In addition, document identifies key stakeholders and outlines the approach to interacting and communicating with them. It must to allow the project manager to devise a method to manage expectations and deliver the right information to the right people.
The project will also work to ensure a balanced participation among men and women in the overall stakeholder involvement, and will support both women's and men's contributions individually, rather than assuming that both groups will benefit equally from gender-neutral development interventions.

[8]http://diktas.iwlearn.org/resources/projectdocuments/DIKTAS%20Stakeholders%20-%20Public%20Participation%20Strategy.pdf/view

In accordance with Annex C of the Project Documents the plan will be develop by international consultant, in the period April-October 2024.

OUTCOME 2

Output 2.1: Groundwater governance diagnostic analysis in all project countries, including a stocktaking of the governance situation — actors, legal framework, policies and plans, adherence to the EU WFD and GWD, available knowledge, enforcement capacity and an assessment of gaps and opportunities.
Groundwater Governance Diagnostics will include: Stocktaking of the governance situation — actors, legal framework, policies and plans, adherence to the EU WFD and GWD, available knowledge, enforcement capacity — and an assessment of gaps and opportunities; Overview of the methodologies of groundwater protection in countries with karst aquifers; Assessment of the level of harmonization of existing criteria for delineation sanitary protection zones related measures; Options for the most applicable existing methods for groundwater vulnerability, risk and hazard mapping; Hydrogeological assessment of the possibilities of improving the protection methodology; Assessment of socio-economic impacts of identified national policy, legal and institutional reforms; Proposal of an optimal common methodology of protection of transboundary aquifers.
Socio-economic/Legal Policy Group will lead this process strongly supported by findings end expertise of HG/Biology Group. Activities in aim to achieve this output will started in the second half of the 2024 and last permanently until the end of the year, with extension in 2025.

OUTCOME 3

Output 3.1: Design of DIKTAS-wide groundwater multi-purpose Monitoring network, including: purpose, variables, network design and optimization, data management, institutional arrangements, harmonized across the countries.

Monitoring protocols will be designed considering optimum spatial and temporal sampling/monitoring points distribution and will be based on:

a. updated reconstructions of the regional and local hydrogeology;
b. the identification of groundwater dependent freshwater ecosystems and water bodies, and of coastal ecosystems;
c. the mapping of water uses for domestic, agricultural, industrial (including energy production) purposes,

(iv) an inventory of groundwater wells, intakes, discharge points of wastewater and pollution hot spots; (v) known areas of diffuse contamination.

Monitoring will be related to quantity and quality in line with recommended standards of the EU Water Framework Directive. The network will provide;

(i) periodic information on the regional background, and
(ii) greater detail in space and time in vulnerable areas of concern and of transboundary influence indicated in the TDA. The design of the monitoring network will also considers Stakeholders' involvement analysis in order to ensure equipment safety, data assimilation and long-term operational success of the network.

The outcome activities will be in focus in second half of 2024, with probably extension in 2025.HG/Biology Group+ International experts in hydrogeology will lead this process.

Output 4.1: Joint data sharing mechanism: joint design and implementation of a real-time data sharing mechanism and harmonization of different national classification standards of water quality, following EU guidelines.

Sharing mechanism should be GIS-based. The sharing of agreed upon monitoring data will feed periodically into the Consultation and Information Exchange body under the responsibility of its Secretariat and be reflected into the relevant Multilateral Agreement deal amongst others with the long-term sustainability of the data sharing mechanism, including financing, updating and maintenance. If possible, Serbia and North Macedonia will also be invited to join the monitoring network.

OUTCOME 5

Output 5.1: Joint Action Programmes for all 6 areas of transboundary influence identified in the TDA, including previously prepared such as the:

1. Methodology for GWR assessment on TBA level

During the development of the TDA in DIKTAS 1, basic information on water demands and abstractions were collected at the regional and national levels. The sources of this information were national water management strategies, national river basin management plans (where available), national statistics, information harvested from hydro-meteorological services, agencies in charge of the water supply data acquisition etc.
For the six selected transboundary aquifers, more detailed analyzes are needed based on the improvement of data collecting during DIKTAS 2 on the end users of water in the areas of the transboundary aquifers, to assess their current and future water needs and information on the amount of water withdrawal in relation to the yield of the source.
Templates (excel) prepared in DIKTAS 1 represent good start point for the improvement and assessment methodology development.
This activity will be provided by HG/Biology expert groupplus International expert in hydrogeology. It will be one of the first activities after the groups are constituted. Projected period when methodology draft will be prepared is estimated of6 months, when the proposed methodology will be issue of the discussion with stakeholders.

2. Concept for Water Master Plans for 6 TBAs

This part of output 5.1 must fully respect existing RBMP in beneficiary countries. While RBMPs are basic documents for each country regarding water management, adopted from the country governments, master plan must be developed just in a way to fully respect it and try to support activities for actual cycle (e.g. programme of measures related with groundwater) or consider possible requests of next RBMP cycle.
Lead by HG/Biology Group + International experts in hydrogeology and support by Legal Policy/Socio-economic group + International experts in Law / Governance concept of WMP, in line with preliminary AWP for 2024,will be developed in the second half of 2024.

OUTCOME 6

Output 6.1: Awareness raising events, dissemination products and education

The knowledge enhancement process will ultimately produce a number of knowledge tools and communication / dissemination materials which include consideration of the ongoing activities being implemented by each country and relevant to the objective of the present project. These materials produced will be widely shared in the region, including through the opportunities for dissemination provided by each country's activities and website. The project, will establish its website, following IW LEARN standards, and populate it with progress reports, documents, webinars and other project

products. In particular, at least 1% of total project budget will be set aside for knowledge management and information exchange activities organized by IW LEARN (e.g., IWC participation, information dissemination through IW LEARN platforms and networks, twinning exercises). Knowledge exchange will include the participation in relevant regional and international workshops and conferences (such as GEF International Waters Conferences, World Water Forum, World Water Week). Serbia and North Macedonia will also be invited to join these activities.

The output 6.1.will aim at:

- Raising public awareness at all levels about the importance of karst water and their dependent ecosystems by promoting the importance of karst systems, the need for their protection, as well as project results and public presentations and discussions.
- Raising the awareness of the local population and increasing their responsibility for sustainable management and protection of water resources.
- Improving specific knowledge among students and exchange of new information among scientists.
- Disseminating experience and lessons learned notes at various educational levels, from academia to primary and secondary schools.

Activities for this output are permanent during the project, planned to start soon after the groups are constituted (1 month after). The output is responsibility of Media Expert group +International expert, supported by other two groups.

ANNEXES 1-10

ANNEX 1

INCEPTION WORKSHOP AGENDA

DIKTAS II - Inception Workshop:

IMPLEMENTATION OF THE STRATEGIC ACTION PROGRAM (SAP) OF THE DINARIC KARST AQUIFER SYSTEM: IMPROVING GROUNDWATER GOVERNANCE AND SUSTAINABILITY OF RELATED ECOSYSTEMS

Palazzo Zorzi, Castello 4930, Venice, Italy 4-5 April 2024

PROVISIONAL AGENDA

Meeting Objectives

- Present project scope, objectives, and activities
- Present and validate the project strategy to the key stakeholders and discuss any changes in the overall context that might influence the project strategy and implementation
- To familiarize project partners and stakeholders with co-financed activities and complimentary activities in the region
- To allow experts to share updates and inputs, based on their knowledge on the Dinaric karst aquifer system, groundwater governance, Safeguards and Risk Management, gender analysis and action plan
- To familiarize project partners and stakeholders with current research regarding other research and initiatives in the aquifer systems, including ecosystem impacts and adaptation
- Raise awareness on groundwater governance through the 9th phase of Intergovernmental Hydrological Programme of UNESCO (IHP IX 2022-2029)
- Discuss project linkages with the UN Days and other projects in the region.

Background documentation for the meeting

- Approved GEF Project Document
- List of participants

Day 1 – 4 April 2024

10:45 *Arrival of participants and registration, welcome coffee*

Moderated by: Sinisa Sesum, Head of Antenna in Sarajevo, and Francesca Bampa, Project Officer, Science unit, UNESCO Regional Bureau for Science and Culture in Europe

11:30 **Official opening of the meeting** *[30 min]*

- Address by Magdalena Landry, Director of UNESCO Regional Bureau for Science and Culture in Europe
- Address by Abou Amani, Director Division of Water Sciences, Secretary, Intergovernmental Hydrological Programme, UNESCO
- Address by Vladimir Mamaev, Regional Technical Advisor, Water & Ocean Governance Programme, BPPS, UNDP Istanbul Regional Hub
- Addresses by the Representatives Ministers / Permanent Delegates / Representatives of participating Member States

12:00 **Introduction of participants (roles and responsibilities)** *[15 min]*

12:15 **Project history overview and project implementation arrangements- from DIKTAS I to DIKTAS II** *[30 min]*

by Sinisa Sesum, Head of Antenna in Sarajevo of UNESCO Regional Bureau for Science and Culture in Europe

12:45 **Group photo**

13:00 *Lunch break [1h]*

14:00 **UNDP, Introduction to GEF; Project's important milestones/ Monitoring and Evaluation Requirements** *[30 min]*

by Vladimir Mamaev, Regional Technical Advisor, Water & Ocean Governance Programme, BPPS, UNDP Istanbul Regional Hub

14:30 **Introduction to GEF Adaptive Management, Core Indicators, Safeguards and Risk Management Strategy** *[45 min]*

by Francesca Bampa, Project Officer, Science unit, UNESCO Regional Bureau for Science and Culture in Europe

15:15 **GEF Guidance on financial management against donor requirements** *[30 min]*

By Francesca Bampa, Project Officer, Science unit, UNESCO Regional Bureau for Science and Culture in Europe

15:45 *coffee break [15 min]*

16:00 **Changes in circumstances since the project was designed** *[30 min]*

by Technical Consultant

16:30 **Logframe presentation: Discussion on proposed Logframe** *[45 min]*
by Technical Consultant

17:15 **Presentation of the first year's workplan: Discussion on workplan** *[45 min]*
by Technical Consultant

18:00 **General discussion and preparation for the external session** *[30 min]*

18:30 **Closing of Day 1**

19:30 Dinner at Carpaccio restaurant

Day 2 - 5 April 2024

09:15 Arrival of participants

Moderated by: Sinisa Sesum, Head of Antenna in Sarajevo, and Francesca Bampa, Project Officer, Science unit, UNESCO Regional Bureau for Science and Culture in Europe

09:30 **Presentation of the ToR for the key experts for the first year** *[30 min]*
by Technical Consultant

10:00 **Presentation of Budget Plan in line with the first-year work plan** *[30 min]*
by Technical consultant

10:30 Coffee break [30 min]

11:00 **Possible synergy with other UN and EU projects in the Dinaric Region** *[30 min]*
by Technical Consultant & Project partners

11:30 Questions & Answers *[30 min]*

12:00 **Next Steps** *[1h]*
by Technical Consultant & Project partners

13:00 Lunch break [1h 15]

14:15 **Next Steps & Wrap up** *[1h]*
by UNESCO and UNDP & Technical consultant and meeting participants

15:15 Questions & Answers *[45 min]*

16:00 coffee break [30 min]

16.45 **Closure of the meeting**

19:30 Dinner at Giardinetto restaurant

3

ANNEX 2

LIST OF THE PARTICIPANTS

DIKTAS II INCEPTION MEETING: List of participants

N°	Title	Surname	Name	Position	Institution	Country	E-mail
1	Mr	Amami	Abou	Director Division of Water Sciences,Secretary,Intergovernmental Hydrological Programme	UNESCO		a.amani@unesco.org
2	Ms	Alyami	Hanouf Mahdi	JPO Science Unit	UNESCO Regional Bureau for Science and Culture in Europe		hm.alyami@unesco.org
3	Ms	Bampa	Francesca	Project officer Science Unit	UNESCO Regional Bureau for Science and Culture in Europe		f.bampa@unesco.org
4	Ms	Bartole	Giulia	Intern Science Unit	UNESCO Regional Bureau for Science and Culture in Europe		g.bartole@unesco.org
5	Ms	Carek	Rut	Secretary-General	Croatian Commission for UNESCO	Croatia	natcom.hr@natcom.unesco.org
6	Ms	Čengić	Selma	Legal policy Expert in DIKTAS 1	HEIS Sarajevo	Bosnia and Herzegovina	selma.cengic@heis.ba
7	Ms	Funduk	Marina	Research Associate	Institute for Development and International Relations	Croatia	marina@irmo.hr
8	Ms	Hahn	Mirela	Senior Advisor	Ministry of Economy and Sustainable Development	Croatia	mirela.hahn@mingor.hr
9	Mr	Jolovic	Boban	Technical Consultant	UNESCO Regional Bureau for Science and Culture in Europe	Bosnia and Herzegovina	bjolovic@yahoo.com
10	Mr	Karagjozi	Arduen	Director of Strategic Management	Water Resource Management Agency	Albania	nvolv.karagjozi@ambu.gov.al;arduen.karagjozi@ambu.gov.al
11	Ms	Keci	Erjola	Associated Professor	Faculty of Professional Studies, University of	Albania	erjolakeci@yahoo.it

N°	Title	Surname	Name	Position	Institution	Country	E-mail
					Durres		
12	Mr	Krneta	Marko	Water management department	Ministry of Agriculture, Forestry and Water Management of Republic of Srpska	Bosnia and Herzegovina	m.krneta@mps.vladars.rs
13	Ms	Landry	Magdalena	Director	UNESCO Regional Bureau for Science and Culture in Europe		veniceoffice@unesco.org
14	Mr	Mamaev	Vladimir	UNDP/GEF Regional Team Leader and Regional Technical Advisor	UNDP , Water & Ocean Governance, Programme Global Environmental Finance Unit Bureau for Policy & Programme Support Istanbul Regional Hub for Europe and the CIS		vladimir.mamaev@undp.
15	Ms	Milisav	Rada	Head of the Department for Water Resources	Ministry of Foreign Trade and Economic Relation of Bosnia and Herzegovina		rada.milisav@mvteo.gov.ba
16	Mr	Mrđen	Damir	Director	Adriatic Sea water Agency Mostar	Bosnia and Herzegovina	jsliv@jadran.ba; jsliv-01@voda.tel.net.ba
17	Mr	Nakić	Zoran	Professor	University of Zagreb, Department of Geology and Geological Engineering	Croatia	zoran.nakic@
18	Mr	Pambuku	Arben	Director of Hydrogeology	Sherbimi Gjeologjik Shqiptar	Albania	urtesi2001@yahoo.com
19	Mr	Pekaš	Želimir	Expert for Hydrogeology in DIKTAS 1	Former Croatia Waters	Croatia	zelimir.pekas@gmail
20	Mr	Radojević	Dragan	Head Department for hydrogeology and Geotechnical Investigations	Geological Survey of Montenegro	Montenegro	dradojevi@yahoo.com
21	Ms	Santato	Lisa	Programme assistant	Science Unit UNESCO Regional Bureau for Science and Culture in Europe		l.santato@unesco.org
22	Mr	Šešum	Siniša	Head of Antenna in Sarajevo UNESCO	Regional Bureau for Science and Culture in Europe		s.sesum@unesco.org

N°	Title	Surname	Name	Position	Institution	Country	E-mail
23	Ms	Sijarić	Anela	Head of the department for Freshwater and Terrestrial Ecosystems	Ministry of Tourism, Ecology, Sustainable Development and Northern Development	Montenegro	anela.sijaric@mepg.gov.me
24	Ms	Stephan	Raya Marina	International expert in water law	International water law expert	France	raya.stephan@yahoo.com
25	Ms	Yahampath	Rossella	Intern Science Unit	UNESCO Regional Bureau for Science and Culture in Europe		r.yahampath-arachiga@unesco.org

ANNEX 3

THE PROJECT STEERING COMMITTEE (PSC)

Title	Name	Email	Role	Organisation	Country
Mr.	Sofjan Jaupaj	sofjan.jaupaj@turizmi.gov.al	Member-Director General of the General Directorate of Economic and Support Services	Ministry of Tourism and Environment	Albania
Ms	Shpresa Mezini	shpresa.mezini@turizmi.gov.al	Head of Sector for International Projects	Ministry of Tourism and Environment	Albania
Ms.	Rada Milisav	rada.milisav@mvteo.gov.ba	Member – Head of the Department of Water Resources	Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina	Bosnia and Herzegovina
Ms.	Tijana Jugović	tijana.jugovic@mvteo.gov.ba	Substitution- Advisor to the Minister	Ministry of Foreign Trade and Economic Relationship of Bosnia and Herzegovina	Bosnia and Herzegovina
Ms.	Elizabeta Kos	elizabeta.kos@mzozt.hr	Member- Director of Water Management and Sea Protection Directorate	Ministry of Environment Protection and Green Transition	Croatia
Ms.	Sanja Genzić Jurišević	sanja.genzic.jurisevic@mzozt.hr	Substitution- Head of Service, Water Policy and International Cooperation Service	Ministry of Environment Protection and Green Transition	Croatia
Ms.	Tamara Brajović	tamara.brajovic@mert.gov.me	Member- Acting Director General of Directorate for Climate Changes and Protection of Nature	Ministry of Tourism, Ecology, Sustainable Development and Northern Region Development	Montenegro
Ms.	Anela Sijarić	anela.sijaric@mert.gov.me	Substitution- Directorate for Climate Changes and Protection of Nature	Ministry of Tourism, Ecology, Sustainable Development and Norther Region Development	Montenegro
Mr.	Vladimir Mamaev	vladimir.mamaev@undp.org	Regional Team Leader Regional Technical Advisor	UNDP/GEF	
Mr.	Šešum Siniša	s.sesum@unesco.org	Head of antenna office	UNESCO Antenna in Sarajevo of the Regional Bureau for	

				Science and Culture in Europe
Ms.	Francesca Bampa	f.bampa@unesco.org	Project officer	Science Unit of the Regional Bureau for Science and Culture in Europe
TBD		Project Manager		DIKTAS Project

ANNEX 4

PROPOSAL OF THE ANNUAL (OPERATIONAL) WORK PLAN FOR 2024

COMPONENT/OUTCOME/Output	1	2	3	4	5	6	7	8	9	10	11	12	
COMPONENT 1, Outcome 1													
Output 1.1:													
Joint multi-disciplinary thematic expert groups established + PU				Project agencies + Beneficiary Countries									
Output 1.2:													
Draft multilateral agreement on the establishment of Consultation and Information Exchange Body (CIE) and its Secretariat prepared for governments approval.					International expert in Law +/ Governance/Legislation Group								
Output 1.3:													
Bilateral Agreements and Bodies. Options for the creation of bilateral agreements and management bodies to address the issues of concern in areas/basins of transboundary influence (Transboundary Aquifers of the TDA), and/or the strengthening of existing ones, will be formulated for decision by governments.					International expert in Law + Governance/Legislation Group								
Output 1.4:													
Stakeholder involvement plan formulated and implemented, including special focus on gender issues and women empowerment.					International consultant + National Media Experts								
COMPONENT 2, Outcome 2													
Output 2.1:													
Groundwater governance diagnostic analysis in all project countries, including a stocktaking of the governance situation — actors, legal framework, policies and plans, adherence to the EU WFD and GWD, available knowledge, enforcement capacity — and an assessment of gaps and opportunities							International GW Governance Expert + Governance/Legislation Group						

COMPONENT/Outcome/Output	1	2	3	4	5	6	7	8	9	10	11	12
COMPONENT 3, Outcome 3 and Outcome 4												
Output 3.1:												
Design of DIKTAS-wide groundwater multi-purpose Monitoring network, including: purpose, variables, network design and optimization, data management, institutional arrangements, harmonized across the countries.							HG/Biology Group + International Expert in Hydrogeology					
Output 4.1:												
Joint data sharing mechanism: joint design and implementation of a real-time data sharing mechanism and harmonization of different national classification standards of water quality, following EU guidelines.								Project office GIS Expert + HG/Biology Group + Governance/Legislation Group				
COMPONENT 4, Outcome 5												
Output 5.1:												
Joint Action Programmes for all 6 areas of transboundary influence identified in the TDA, including previously prepared such as the:												
1. Methodology for GWR assessment on TBA level					International Expert in hydrogeology + HG/Biology Group							
2. Concept for Water Master Plans for 6 TBAs							HG (Water Management)/Biology Group + International Expert in Hydrogeology/Water Management Plans + Governance/ Legislation Group + International Consultant in Law / Governance					
COMPONENT 5, Outcome 6												
Output 6.1:												
Awareness raising events, dissemination products and education.					International Expert in Communication / Capacity Building, Dissemination Expert Group							

ANNEX 5

DRAFT OF THE FIRST YEAR PROJECT BUDGET

1. Draft of the First year Budget (for 2024) – COMPONENT 1-5

Components	ATLAS Budget Description	Originally proposed in Project document (chapter 9)
1+2+3+4+5	International Consultants	136.000
1+2+3+4+5	Local Consultants	60.000
1+2+3+4+5	Contractual Services	71.000
1+2+3+4+5	Travel	44.000
1+2+3+4+5	Training / workshops	66.000
1+2+3+4+5	Equipment and Furniture	44.000
1+2+3+4+5	Office supplies	17.000
	TOTAL	438.000

2. Draft of the First year Budget (for 2024) – Project Management

GEF Outcome/ Atlas Activity	ATLAS Budget Description	Originally proposed in Project document (chapter 9)
PROJECT MANAGEMENT	International Consultants	21.600
	Local Consultants	19.000
	Travel	10.000
	Equipment and Furniture	3.000
	Office supplies	1.000
	TOTAL	54.600

3. Draft of the First year Budget (for 2024) – COMPONENT 1-5 + Project Management

GEF Outcome/ Atlas Activity	Originally proposed in Project Document (Chapter 9)
COMPONENT 1-5	438.000
PROJECT MANAGEMENT	54.600
TOTAL	**492.600**

ANNEX 6

REMARK: ToRs present guidelines for the selection of national experts, but that the participating state makes the final decision on the selection of the most suitable national candidates for participation in the Projects expert groups.

TOR FOR NATIONAL AND INTERNALTIONA EXPERTS AND PMU members

1. Proposal of ToRs for National and International experts

NATIONAL EXPERTS

Expert Group 1 - GW Resources and Ecosystems

GENERAL:

-Draft the annual Work Plan and budget for activities that fall under his/her responsibility and contribute to the preparation of the project's Annual Work Plan;
-Work in close coordination with the Implementing partner and the PMU;
-Support reporting of project progress as needed;
-Support Monitoring & Evaluation reporting requirements

COMPONENTS 1,2,3,4 – EXPERT GROUP 1

Expert Group 1 - Hydrogeologist - Outputs 2.1, 2.2, 2.3, 3.1, 4.1, 5.1
• at least MSc or Post-graduate specialization in Hydrogeology/engineering applied to hydrogeology/ good knowledge of the Karst Aquifer System
• At least 5 years of experience in the application of hydrogeology to international development projects
• Excellent knowledge of the hydrogeological conditions and context of the DIKTAS
• Excellent knowledge of the relevant social and political context
• Fully fluent in English; good knowledge of one of the local Languages is a plus Expert Group 1 - GW Resources and Ecosystems COMPONENTS 1,2,3,4

Expert Group 1 - Biologist - Outputs 2.1, 3.1, 4.1 and 5.1
• Support reporting of project progress as needed; Support Monitoring & Evaluation reporting requirements

• at least MSc or Post-graduate specialization (PhD would be an asset) in Biology / Environmental sciences applied to/ good knowledge of the Karst Aquifer System biology
• Excellent knowledge of the biodiversity in the region covered by the project
• Excellent knowledge of the relevant social and political context
• Fully fluent in English; good knowledge of one of the local Languages is a plus

Expert Group 2 - Governance and Legislation

GENERAL:

- Draft the annual Work Plan and budget for activities that fall under his/her responsibility and contribute to the preparation of the project's Annual Work Plan.
- Work in close coordination with the Implementing partner and the PMU.
- Support reporting of project progress as needed;
- Support Monitoring & Evaluation reporting requirements

COMPONENTS 1 and 2 – EXPERT GROUP 2

Expert Group 2 - Legal and Policy – Outputs 1.2, 1.3, 2.1, 2.2, 2.3
• At least MSc in Law or degree in the disciplines relevant to this project and ground water management in particular; a post-graduate specialization in Law or water/environment Governance would be an asset
• At least 5 years of experience in the application of law to international development projects
• Excellent knowledge of environmental law situation in the context of the DIKTAS countries
• Excellent knowledge of the relevant social and political context
• Fully fluent in English; good knowledge of one of the local Languages is a plus

Expert Group 2 - Sociologist - Outputs 1.2, 1.3, 2.3
• MSc or post-graduate specialization (PhD preferable) in Sociology or technical/environmental disciplines with a focus on environmental issues / stakeholder mapping
• At least 2 years of experience in international development projects
• Excellent knowledge of stakeholders involved in water management in the context of the DIKTAS countries
• Excellent knowledge of the relevant social and political context
• Fully fluent in English; good knowledge of one of the local Languages is a plus

COMPONENTS 3 and 4 – EXPERT GROUP 2

Expert Group 2 - Legal and Policy - Outputs 4.1, 5.1, 5.2
• At least MSc in Law or degree in the disciplines relevant to this project and ground water management in particular; a post-graduate specialization in Law or water/environment Governance would be an asset
• At least 5 years of experience in the application of law to international development projects
• Excellent knowledge of environmental law situation in the context of the DIKTAS countries
• Excellent knowledge of the relevant social and political context
• Fully fluent in English; good knowledge of one of the local Languages is a plus

Expert Group 2 - Sociologist - Outputs 4.1, 5.1, 5.2
• MSc or post-graduate specialization (PhD preferable) in Sociology with a focus on environmental issues / stakeholder mapping
• At least 2 years of experience in international development projects
• Excellent knowledge of stakeholders involved in water management in the context of the DIKTAS countries
• Excellent knowledge of the relevant social and political context
• Fully fluent in English; good knowledge of one of the local Languages is a plus

Expert Group 3 - Capacity Building and Dissemination

Media expert – Output 1.4

GENERAL
Draft the annual Work Plan and budget for activities that fall under his/her responsibility and contribute to the preparation of the project's Annual Work Plan.
Work in close coordination with the Implementing partner and the PMU.
Support reporting of project progress as needed;
Support Monitoring & Evaluation reporting requirements

Qualifications:
• Specialization in communications / journalism or related fields of expertise with a focus on environmental issues/local stakeholder involvement
• At least 5 years of experience in international development projects
• Excellent knowledge of stakeholders involved in water management in the context of the DIKTAS countries
• Excellent knowledge of the relevant social and political context • Fully fluent in English; good knowledge of one of the local Languages is a plus

Communication and information – Output 6.1.

-development and maintenance of communication tools, including a periodic bulletin/newsletter, websites and social media (Twitter and Facebook) at national level;
-provide advice on communications and advocacy aspects;

Qualifications:
• Degree in communications, social science, economics, or related area. MA an asset.
• Minimum 5 years of professional experience, preferably in science-related communication.
• Experience of dealing with media;
• Experience in conceptualizing and managing the production of printed materials;
• Experience in supporting the implementation of communication and/or media outreach plans
• Experience in developing content that clearly communicates, to a culturally diverse audience, development ideas and experiences for media, web, print production, and audiovisual productions.
• Fluent in English.

Gender expert – Output 6.2

-collect baseline data and information related to perform the required gender analysis;
-provide inputs to the analysis;
-support training activities

Qualifications:
•Degree in sociology / gender mainstreaming / anthropology / international development
•At least 5 years of experience in the implementation of water related international development projects
•Experience in capacity building activities
•Fully fluent in English;

INTERNATIONAL EXPERTS

Component 1 – Output 1.4

Prepare draft Stakeholder Involvement Plan and take part to the thematic groups 1, 2 and 3.

Qualifications:
• MSc or post-graduate specialization (PhD preferable) in Sociology or technical /environmental disciplines with a focus on environmental issues / stakeholder mapping
• At least 7 years of experience in international development projects
• Excellent knowledge of stakeholders involved in water management
• Excellent understanding of the relevant social and political context
• Fully fluent in English

Component 1 and 2 – Outputs 1.2, 1.3, 2.1

Conduct an analysis of the current situation and prepare a **groundwater governance diagnostic** for the TBAs (expert #1) and support development of **regulations regarding protection zones** (expert #2) and teach during the training courses (both experts).

Qualifications:
Both Experts:
• MSc or post-graduate specialization (PhD preferable) in International law
• Fully fluent in English

Expert #1
At least 5 years of experience in:
• Knowledge of water related international instruments
• Reviewing, analyzing, and drafting principal and subsidiary water resources legislation,
• Training in water law
• Advising on legal and institutional arrangements for transboundary freshwaters

Expert #2
At least 5 years of experience in:
• national and international law related to water management
• the institutional aspect of water management (domestic)
• groundwater governance

Components 3 and 4 – Outputs 3.1., 3.2, 4.1, 5.1, 5.2

International experts in hydrogeology / Water Management Plans
1. Prepare an aquifer hydrological conceptual model and after consulting with the interested Governments to understand their needs (purpose of monitoring) propose a groundwater monitoring plan and locations for drilling new monitoring wells.
2. Prepare aquifer vulnerability models and maps to be used in developing the conceptual model of the aquifer
3. Develop data sharing protocols after consulting with the beneficiary countries in an agreed purpose of the monitoring and the data/info required to be shared.
4. Prepare methodology and concept for the Water Master Plans

Qualifications:
• MSc or post-graduate degree (PhD preferable) in Hydrogeology / engineering applied to hydrogeology/ good knowledge of the Karst Aquifer System
• At least 10 years (for the senior) or 5 years (for the mid-level) of experience in the application of hydrogeology to international development projects
• Excellent knowledge of the hydrogeological conditions and context of Karst aquifer systems
• Fully fluent in English

Component 5 – Output 6.1

Communication and information expert
1. Design and implement a communications strategy for the project
2. Design, in cooperation with the relevant UNESCO and UNDP-GEF services, the visual identity for the activities implemented by the project;
3. Coordinate the development and maintenance of communication tools, including a periodic bulletin/newsletter, websites and social media (Twitter and Facebook);
4. Provide advice on communications and advocacy aspects;

Qualifications:
• Degree in communications, social science, economics, or related area. MA an asset.
• Minimum 5 years of professional experience in science-related communication, with at least 1 year at the international level.
• Experience of dealing with media; • Experience in conceptualizing and managing the production of printed materials with appropriate cultural sensitivity;
• Experience with managing websites, preferably in the Drupal environment;
• Experience in supporting the implementation of communication and/or media outreach plans
• Experience in developing content that clearly communicates, to a culturally diverse audience, development ideas and experiences for media, web, print production, and audiovisual productions.
• Fully fluent in English;

Component 5 – Output 6.2

Gender International experts

1. Perform an evaluation of the current situation and conduct an analysis in view of mainstreaming gender throughout the activities of the project.
2. Coordinate the activities of the national experts and conduct capacity building activities as required.

Qualifications:
• MSc or post-graduate degree in sociology / gender mainstreaming / anthropology / international development
• At least 5 years of experience in the implementation of water related international development projects
• Experience in capacity building activities
• Fully fluent in English

2. Proposal of ToRs for PMU members

Project Manager

Qualifications:
• MSc or post-graduate specialization in Hydrogeology/engineering applied to hydrogeology
• Good knowledge of the Karst Aquifer System
• At least 5 years of experience in the application of hydrogeology to international development projects
• Experience in management of multinational interdisciplinary projects focused on integrated national and transboundary water resource management strategies.

Competencies:
• Strong leadership, managerial and coordination skills, with a demonstrated ability to effectively coordinate the implementation of large multi-stakeholder projects, including financial and technical aspects.
• Ability to effectively manage technical and administrative teams, work with a wide range of stakeholders across various sectors and at all levels, to develop durable partnerships with collaborating agencies.
• Ability to administer budgets, train and work effectively with counterpart staff at all levels and with all groups involved in the project.
• Ability to coordinate and supervise multiple Project Implementation Units in their implementation of technical activities in partnership with a variety of subnational stakeholder groups, including community and government.
• Strong drafting, presentation and reporting skills.
• Demonstrated familiarity with or, ideally, work experience in GEF International Waters and specifically in the Balkan region;
• Demonstrated familiarity with transboundary waters issues and national priorities in the Balkan region;
• Demonstrated familiarity with priority issues in the Dinaric Karst system in the region, including water sector, environmental sector, national and regional institutional structures and future development plans;
• Demonstrated familiarity with modern integrated approaches to groundwater and related ecosystems, including application of EU WFD and its groundwater daughter directive to national priorities, as appropriate, familiarity with institutional, economic, technical, and social mechanisms for improving water resources management; capacity building and curriculum development approaches for multiple levels of stakeholders; mechanisms for incentive-based pollution abatement and enforcement; social marketing and stakeholder education approaches for specific stakeholder groups across sectors and countries, including gender mainstreaming;

Project Assistant (if required)

Qualifications:
• Completed secondary, technical and/or vocational school.
• A minimum of 3 (three) years of work experience in administrative, secretarial support or related field.
• Excellent interpersonal and communication skills, including ability to draft correspondence and correct documents.
• Excellent organizational and coordination skills.
• Ability to work as part of a team, to take initiatives and to provide quality and timely support and services.
• Excellent ICT skills with proficiency in the use of MS Office.

Project Monitoring and Evaluation Officer (if required)

Under the overall supervision and guidance of the Project Manager, the M&E Officer will have the responsibility for project monitoring and evaluation.
The M&E Officer will work closely on knowledge management aspects of the project.

The Terms of References of other required Positions, such as but not limited to Project Accountant, will be agreed upon, after the initiation of the Project.

ANNEX 7

CHANGES IN CIRCUMSTANCES SINCE THE PROJECT WAS DESIGNED AND HOW AFFECT THE PROJECT

Administrative issues

The first phase of the project officially started in 2010 and take next 4 years. The countries participated were: Albania, B&H, Croatia and Montenegro (Figure 1).

Each country in the moment of the project beginning was in accession or precession process to EU. Close to the end of the project, Croatia became EU Member State (2013).

Republic of Croatia as a full member state of the European Union is no longer GEF beneficiary country and UNDP program country, but in DIKTAS II project will actively continue to participate as a partner country (Donor Government).

Montenegro applied for EU membership in December 2008 and was granted EU candidate status in December 2010. The EU-Montenegro accession negotiations started in June 2012. So far, 33 out of 35 negotiation chapters have been opened.

Albania applied for EU membership in April 2009 and was granted EU candidate status in June 2014. The EU held its first intergovernmental conference with Albania in July 2022.

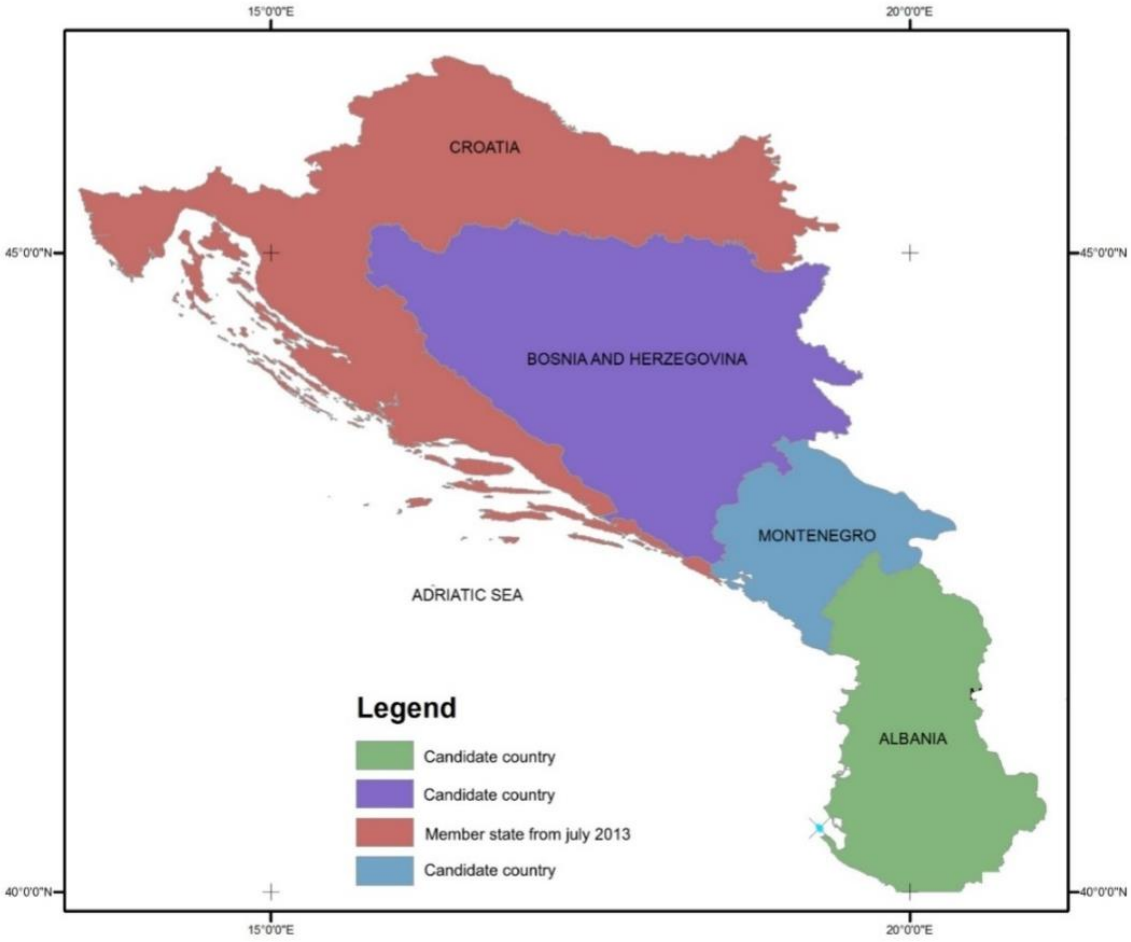


Fig. 1: *Participating countries and EU status in March 2024*

Bosnia and Herzegovina - along with other Western Balkans countries – was identified as a potential candidate for EU membership during the Thessaloniki European Council summit in June 2003. Bosnia and Herzegovina applied for EU membership in February 2016. The Commission adopted its Opinion (Avis) on the EU membership application of the country in May 2019, identifying 14 key priorities for the country to fulfil in view of opening EU accession negotiations. The EUCouncil endorsed the Opinion and key priorities in December 2019. The Opinion constitutes a comprehensive roadmap for deep reforms in the areas of democracy/functionality, the rule of law, fundamental rights and public administration reform. In October 2022, the Commission recommended Bosnia and Herzegovina for candidate status, on the understanding that a number of steps are taken. In December 2022, the European Council granted Bosnia and Herzegovina the status of candidate country. In December 2023, the European Council decided it will open accession negotiations with Bosnia and Herzegovina, once the necessary degree of compliance with the membership criteria is achieved. It also invited the Commission to report to the Council on progress at the latest in March 2024, with a view to making a decision.

Water Management Strategies and River Basin Management Plans update

National (also entity Law on Water) are fully in line with WFD. Thus RBM is mandatory based on River Basin Integrate approach.

Each beneficiary country has adopted water strategy and numerous RBMPs at national (in B&H entity) level, and this must be comprehensively analyzed and fully respected in DIKTAS 2 (2024-2029) project.

Croatia, as EU member fully transposes EU water legislation in national legal policy. Other three beneficiary countries4, there are on-going efforts for transposition of the fundamental principles, objectives and measures from the EU Water Framework Directive, WFD (2000/60/EC) and the Groundwater Directive, GWD (2006/118/EC) in national legislations. Although the “polluter pays” principle and the principle of “recovery of the costs” are promoted in national legislative documents, the principle of cost recovery is not fully transposed either in national regulations or in water management practices, with regards to implementation of the environmental and resource costs in water pricing policies.

ALBANIA

National Strategy of Water Resources Integrated Management is adopted in 2018, for the period 2018-2027.The national strategy of integrated management of water resources 2018-2027 has five strategic objectives including the sustainable use of water resources, the attainment of good water quality in all water resources by the year 2027, disaster risk reduction and management for drought and floods, increase of sound scientific knowledge on water and climate issues, and application of inclusive and sustainable water management practices that yield equitable profits to all involved stakeholders.
The strategy presents a detailed situational analysis including the challenges the sector faces as well as the policies of addressing these challenges. To this end, the efforts will be focused on the improvement and expansion of water supply, orientation of water services towards principles of cost control and recuperation, improvement of administration institutional frameworks, investing to increase sector capacity, and full approximation of domestic legislation with the EU water legislation.
Specifically, the action plans will address the rehabilitation and modernization of water supply infrastructure, review of tariff-related legal issues including their differentiation, provision of financial assistance to specific categories of consumers, cost recuperation for the service providers, and assets evaluation for the water supply systems. To make agriculture more productive efforts in the irrigation sector will focus on water protection and quality protection through plans of water management, continuous monitoring of surface water quality, rehabilitation and modernization of irrigation systems

and expansion of irrigation zones for the production of the high quality crops, recuperation of up to 90% of maintenance and management costs, increase of total capacity in water gathering etc.
The Agency of Water Resources Management is the main institution responsible for the implementation of this strategy and building synergies with other line ministries. Reporting, monitoring and assessment will be done using the Matrix of Performance Evaluation that will be prepared by the Agency and will employ indicators selected among those used for the National Strategy for Development and Integration 2015-2020.[9]

BOSNIA AND HERZEGOVINA

River basin management is organized on entity level (FB&H and RS). In addition, both entities has agencies responsible for Adriatic and Black sea basin. Water Management Strategies were prepared in both entities, but need to be innovated soon (in RS adopted for the period 2015-2024[10] an in FB&H adopted for the period 2010-2022[11])

Republic of Srpska
According to the Article 23 of The Law on Water (50/16) water management in the Republic of Srpska is defined as following:
(1) The basic water management unit is the regional river basin (district).
(2) For the purpose of water management on the territory of the Republic of Srpska, the following river basin districts are defined:
a) the Sava River basin district,
b) Trebišnjica river basin district.
(3) The Sava River river basin includes the following sub-basins: Una, Vrbas, Ukrina, Bosna, Drina, and direct watershed of the Sava River.
(4) The Trebišnjica river basin includes the Trebišnjica river basin with the sub-basins of the river Mušnica, Sušica, the main part of the sub-basin of Dubrovnik river (Ombla), with associated underground streams with more than a hundred springs, which are located in the regions from DubokaLjuta to Metković and from Metkovića to Svitansko-Deranskoblato, as well as the associated part of the Neretva river basin.
Both RB districts are under jurisdiction of Public Utility "VodeSrpske" with head office in Bijeljina.

Federation of B&H
Territorial jurisdiction regarding water management in FB&H is defined by Article 23 of the Law on Water (70/06).For the purpose of water management on the territory of FB&H, two water agencies are established:
1. Sava river basin agency in Sarajevo
2. Adriatic Sea watershed agency in Mostar.
The Sava river basin includes part of the international Danube river basin (part of the international sub-basin of the Sava) on the territory of FB&H.
The Adriatic Sea watershed agency responsibility includes parts of the international river basins of the Neretva, Trebišnjica, Cetina and Krka on the territory of FB&H.
Both entities, in the period after DIKTAS1, adopted RBMP, cycle 1 in RS (2018-2021), and cycle 1 and 2 in FB&H (2016-2021 and 2022-2027).

[9] https://www.fao.org/faolex/results/details/en/c/LEX-FAOC181221/
[10] http://www.voders.org/upravljanje-vodama/planski-dokumenti/
[11] https://fzofbih.org.ba/wp-content/uploads/2019/10/strategija_vode-1.pdf

Table 3:*Status of RBMP in B&H for relevant periods*

B&H	RBMP before DIKTAS I (before 2015)	RBMP after DIKTAS I (after 2015)	After DIKTAS2 Project document release (2019)	Remark
Federation B&H	-	2016-2021	2022-2027	For both Adriatic and Sava basins district
Republic of Srpska	-	2018-2021	-	For both Trebišnjica and Sava basins districts
BD	2006-2011			For part of Sava river basin (just cover this RB)

From perspective of DIKTAS II project, RBMP prepared after 2014 are crucial, with focus on RBMP for Trebišnjica RB district in RS (because Trebišnjica TBA) and Sava RBMP in FB&H (Una TBA) and RBMP for Adriatic in FB&H (TBA Neretva, Cetina and Krka).

CROATIA

Based on the provisions of the Water Act ("Official Gazette", no. 107/95 and 105/05),Water management strategy[12] ("Official Gazette", No. 91/08) adopted on July 15In 2008, at the 5th session of the Croatian Parliament, there was a long-term planning document which the vision, mission, goals and tasks of the state policy in water management are determined.

It provides strategic decision in water sector from 2008, development needs, economic possibilities, international obligations, and the need for preservation and improvement state of water, and water and water-dependent ecosystems. Its content is harmonized with relevant directives of the European Union, and therefore it was constituted the basis for the preparation of documents for accession negotiations, but also one of the bases for the preparation of applications for the use of funds from the European pre-accession funds of the Union. The water management strategy is the document on the basis of which it will be implemented water sector reforms in order to reach European standards in water management. The water management strategy is also a framework for the preparation of spatial planning strategies and plans, environmental protection, nature protection and development of other sectors that depend on water or influence the state of water (agriculture, forestry, fishing, industry, energy, transport, tourism, public health and other). It is valid until the end of 2038.

The last prepared water management plan is set for the cycle2022 – 2027[13]and prepared on the basis of the Law on Water (Official Gazette no. 66/19 and 84/21) which prescribe: Water management planning documents (Article 37), Water Management Plan (Article 39) and Flood Risk Management Plan (Article 127).The plan is an amendment of the second Water Management Plan (Official Gazette, No. 66/16) of which was adopted by the Government of the Republic of Croatia on June 6, 2016 for the planning period from 2016 to 2021.

MONTENEGRO

The water management strategy for 2035 was adopted in July 2017. The document is a long-term planning document sets out the vision, long-term and short-term goals in water management and development of the water sector. Strategic decisions, obligations and guidelines in all segments of the

[12] https://www.voda.hr/sites/default/files/2022-04/strategija_upravljanja_vodama_0.pdf

[13]https://mingor.gov.hr/UserDocsImages//Uprava_vodnoga_gospodarstva_i_zast_mora/Planski_dokumenti_upravljanja_vodama//NACRT%20PLANA%20UPRAVLJANJA%20VODNIM%20PODRUCJIMA%202022.%20-%202027.%20-%20SIJECANJ%202022..pdf

economy and society depend on this document, since it the water sector is closely related to all other components of the state development policy. In conjunction with the Law on Water, the Strategy especially contains: assessment of the existing situation regarding water management; goals and guidelines for water management; measures to achieve the established water management objectives; and the projection of the development of water management.
In 2021, within the project Capacity building in the aim of implementation of the Water Framework Directive in Montenegro (Contract number.383-638: EuropeAid/138151/DH/SER/ME),Water Management Plan for Danube river basin district and for Adriatic basin in Montenegro were prepared[14].
The Government of Montenegro adopted this plan in March 2022[15].
The plans need to ensure efficient water management of the river basin in the country, taking into account current practice, availability of data and resources. This document was created in accordance with requirements of the EU Water Framework Directive (ODV, Directive 2000/60/EC) and national legislation in the field of water management and nature protection, on the basis of which it is established legal framework that protects and improves the status of all waters and protected areas, including ecosystems that depend on water, and prevents the deterioration of their status and provides long-term optimal (sustainable) use of water resources.

Groundwater monitoring

In general, significant improvement in groundwater monitoring was done in beneficiary countries in last decade and after DIKTAS 1 project finished.

While the aquifers are in focus of the project, improvement in monitoring of groundwater, based on RBMP and appropriate monitoring programmes, are analyzed. Monitoring is developed and applied in different way in DIKTAS countries. While Croatia provide it fully in line with WFD and EU requirements (as Member State), other countries, as No-EU member states(candidates) develop it in different ways, trying to approach as much as possible to the WFD requirements. Discrepancies are visible between countries, but also in same country between responsible agencies (e.g. B&H agencies responsible for huge part of DIKTAS TBAs in Adriatic).

ALBANIA

Groundwater monitoring network in Albania is shown in the figure below. For DIKTAS 2 project most important is monitoring in Cemi/CijevanTBA.

The transboundary Cijevna River Basin shared between Albania and Montenegro has a surface area of 650 km^2. It is extremely important for water management, especially in the country of Montenegro which is downstream. Due to the high permeability of both the karst and intergranular aquifers that exist in the basin, the River Cijevna sinks along the length of its riverbed and in summer months it usually dries up completely at the confluence section. Hydrometric surveys undertaken during a drought period have identified the most permeable zones along the river, while the loss between sections varies between 0.137 and 0.765 m3/s/km'. An aquifer vulnerability assessment has been conducted through the implementation of both the EPIK and DRASTIC methods.

[14] https://www.gov.me/dokumenta/723d3474-eaf6-4704-abaf-71c5a21fcef9
[15] https://wapi.gov.me/download-preview/1c35c97b-882d-470a-8a96-c837f871f7af?version=1.0

Identifying both the most permeable and vulnerable zones in the basin assisted in the initial design of a joint Groundwater Monitoring Network for the two countries. It should consist of 21 observation points, automatic hydrology stations on the river and selected springs, and data loggers within installed piezometers. Once completed with remote data transmission and the implementation of a real-time data-sharing mechanism, it will be the first of its kind in "classical" Dinaric karst region, and one of very first to exist within karst aquifers anywhere.[16]

Proposed monitoring network on the river, main drainage sources (springs) and locations of additional piezometers in the transboundary Cemi/Cijevna River Basin is given in the next figure.

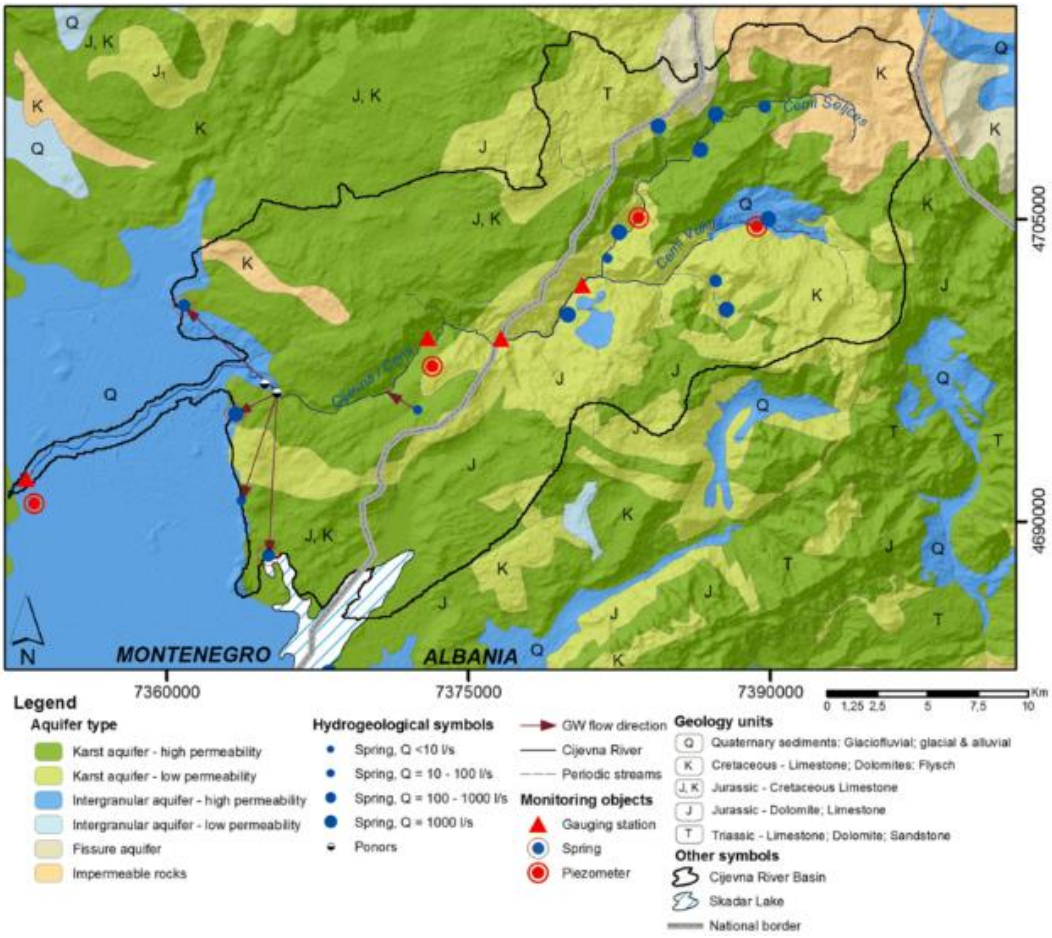


Fig. 2: *Proposed monitoring network on the river, main drainage sources (springs) and locations of additional piezometers in the transboundary Cemi/Cijevna River Basin*[17]

BOSNIA AND HERZEGOVINA

Adriatic basin (include TBA Krka, Cetina, Neretva and Trebišnjica)

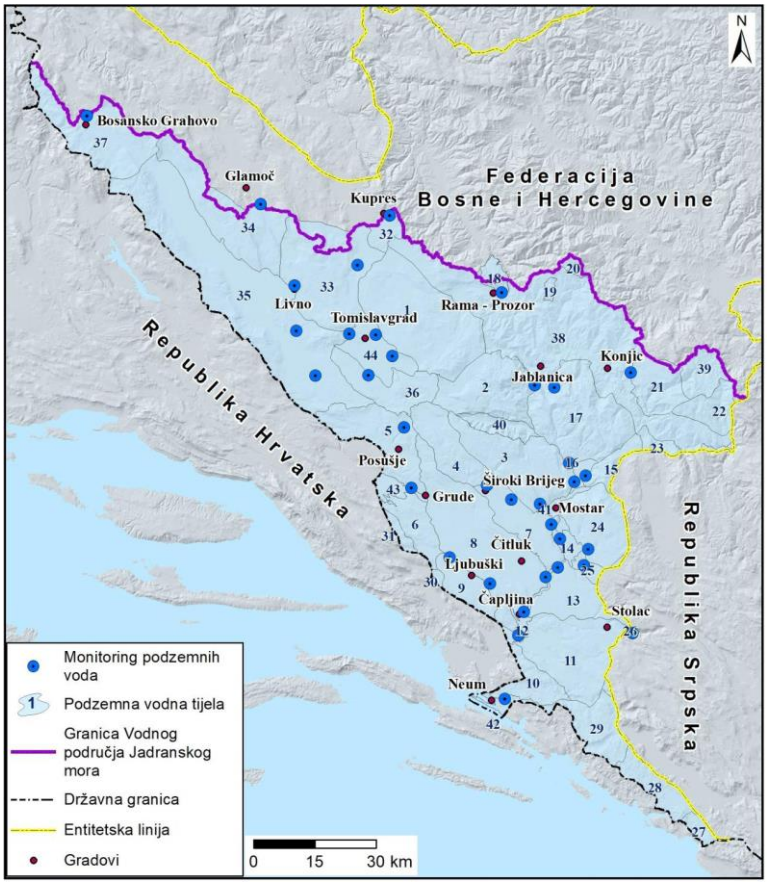
Republic of Srpska – TrebišnjicaRBD (include TBATrebišnjica and Bilećko Lake)

In adopted River Basin Management Plan for Trebišnjica River basin District (2017-2021)[18] monitoring is proposed in accordance with the WFD and includes quantitative monitoring, chemical -surveillance and operational monitoring, and monitoring in drinking water source protection zones.

[16] https://link.springer.com/article/10.1007/s12665-020-8809-8
[17] https://www.researchgate.net/figure/Proposed-monitoring-network-on-the-river-main-drainage-sources-springs-and-locations_fig4_338834612
[18] http://www.voders.org/upravljanje-vodama/planski-dokumenti

The monitoring needs to be expanded for the missing number of points (springs and piezometers), in purpose to analyse the groundwater balance - quantity status which was estimated in the Management Plan based on relatively old data without calculations based on monitoring, because according to WFD "the body of groundwater is determined as the volume of groundwater in the aquifer or aquifers", and this cannot be calculated without monitoring established at representative karst springs, when it comes to the Adriatic Sea basin. The use of old data and the failure to carry out new tracer tests cause studies on the protection of water sources not to be done with the necessary accuracy and in accordance with the Rulebook, which sometimes has repercussions on the quantitative-qualitative status of the water source.
It is very important to emphasize that some hydro-energy system, e.g., HPP Trebišnjica provide very complex groundwater monitoring and results and can seriously improve monitoring of groundwater and at the same time cut the monitoring costs.

FB&H (include TBA Krka, Cetina and Neretva)
According to the RBMP for Adriatic basin in FB&H[19] groundwater quality monitoring is regularly carried out twice a year at 30 springs/sources (Fig. 3) of groundwater (of which at several locations from wells in alluvial deposits).
In the karst terrains, which cover the largest portion of the the Adriatic basin in the FB&H, according to the UKTAG Guidelines, quantitative monitoring is carried out only by measuring discharge at large springs or at the immediately associated downstream watercourses. It should be noted that monitoring of groundwater levels from the aspect of impact on terrestrial ecosystems in karst is not established in principle, unless it proves to be justified when planning measures to mitigate adverse anthropogenic impacts.



[19] https://avpjm.jadran.ba/uploads/PUVPJM2227/Plan_upravljanja_vodama_VPJM_2022_2027.pdf

Fig. 3: *Groundwater monitoring locations in the Adriatic Basin in the Federation of Bosnia and Herzegovina, RBMP for period 2022-2027.*

CROATIA

Adriatic basin (include TBAKrka, Cetina, Neretva and Trebišnjica)

Monitoring is conducted by Croatian Waters with permission of the Ministry of Regional Development, Forestry and Water Management .
Relevant monitoring laboratory is laboratory of Croatian Waters and others with agreements with this public institution.
In karst region of Croatia in Adriatic basin monitoring is conducted as monitoring of spring water quality from 1980th (20 springs or wells, Fig. 4).[20]

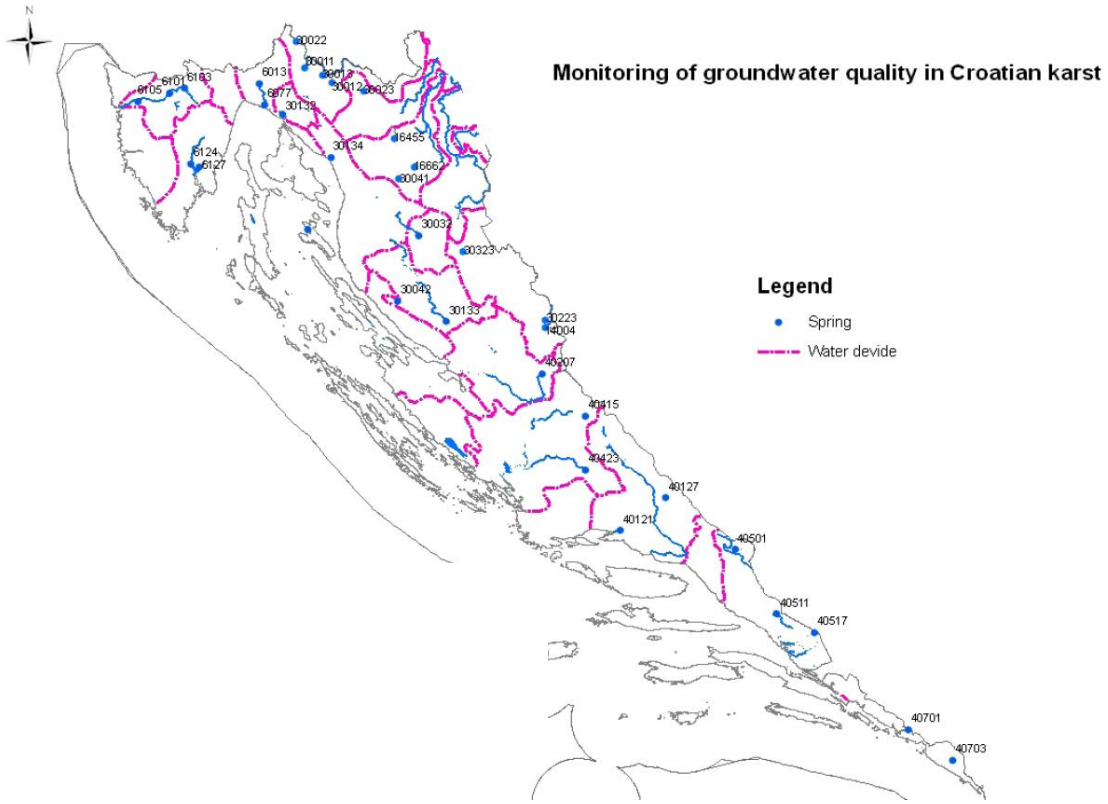


Fig. 4: *Monitoring in karst region of Croatia in Adriatic basin*

Significantly wider monitoring of karst groundwater quality is conducted at public water supply system and is under responsibility ofthe Ministry of Health and Social Welfare and public water supply enterprises.
Frequency of sampling is12 time peryear. Parametersincluded inmonitoring are following:
-General physical-chemical parameters (pH, el.conductivity, alkalinity, hardness)
-Oxygen regime – dissolved oxygen, COD-Mn, BOD
-Nutrients - ammonium, nitrite, nitrate

[20]https://unece.org/fileadmin/DAM/env/water/meetings/karst_croatia_2008/Rajcic%20et%20al_monitoring%20karst%20groundwater%20quality%20in%20Croatia.pdf

-Microbiological -total number offecal coliformbacteria, fecalbacteria, number of aerobic bacteria
-Metals – Fe, Mn, Cu, Zn, Cd, Cr, Pb, Hg
-Organic compounds– mineral oil, total phenols,pesticides, chlorinated hydrocarbons, PAH, PCB.

MONTENEGRO

Adriatic basin (include TBA Bilećko and Cijevna/Cemi)

Procedure for monitoring of surface waters, groundwater and protected areas is determined by the Framework Directive on EU waters. These requirements were not only transferred to The Law on Water and Bylaws, already and in the set accompanying of acts that include the Law on Hydrometeorology, Law on Marine Resources, Law on Energy, draft Law on water for human consumption, etc. These acts provide responsibilities to a wide network of institutions from different field of work, and the coordination of the entire water monitoring is a challenging task.
Monitoring is mandatory for the following purposes: drinking water, waste water discharge, water for bathing, water in protected areas, irrigation/drainage and electricity production.
Actual water monitoring points (Fig. 5) as well as proposal for the extension are given in River Basin Management Plan for the Adriatic Basin in Montenegro[21]. In addition, this document, officially adopted by the Government point out in detail on other aspects of the monitoring: measuring parameters, dynamic of the observation, indicate on current status of quality of groundwater, proposed measures etc.

Proposed map of monitoring in Cemi/Cijevna TBA is giver in Fig.3, while for TBA Bilećko lake still be proposed with B&G experts.

[21]https://wapi.gov.me/download-preview/91ffc8ea-bcf5-4c45-b805-855f2bb446d6?version=1.0

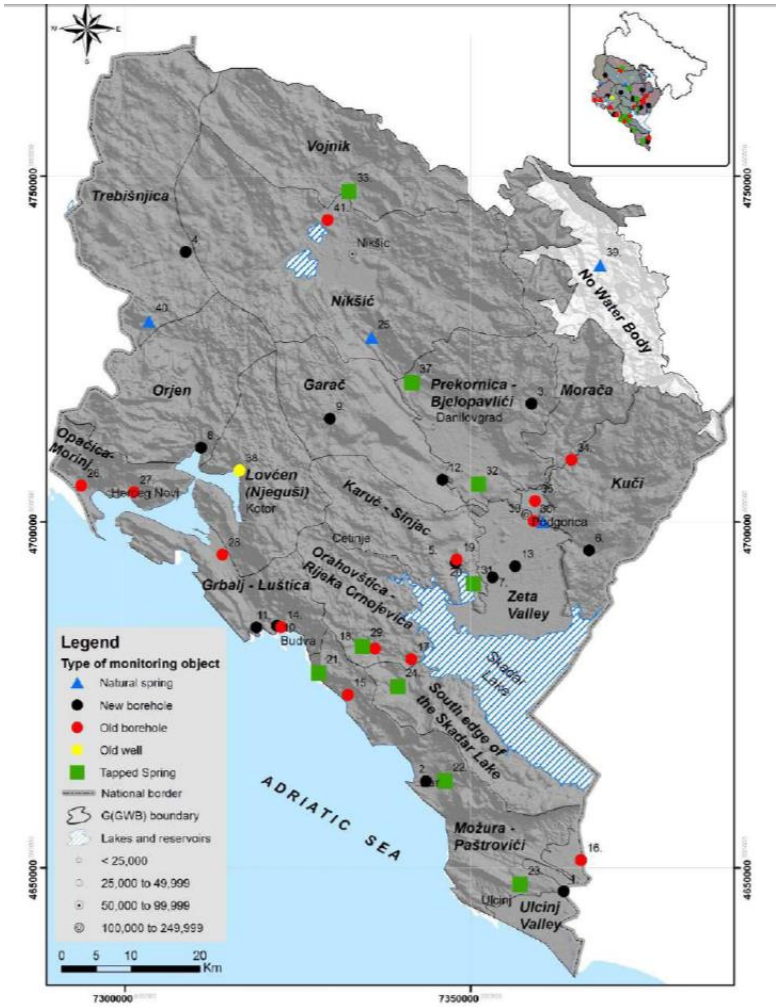


Fig. 5: *Locations of groundwater monitoring stations in the Adriatic basin, Montenegro*

TBAs boundaries delineation evolution in Dinaric karst and further boundaries harmonization

The first identification of TBAs in the Dinaric region date from 1999[22] (Fig. 6).
This identification includes just 3 of 8DIKTAS 1TBAs, each between Croatia and B&H and reported here just from Croatia side.

[22] https://edepot.wur.nl/369276

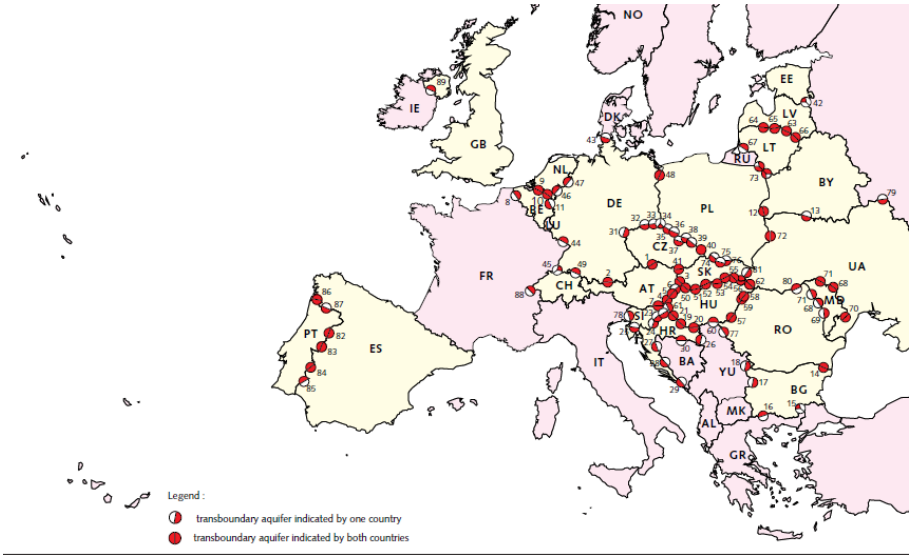


Fig. 6: *The first identification of TBAs in Dinaric, UN/ECE 1999*

The first Assessment of Transboundary Rivers, Lakes and Groundwater (UNECE, 2007)[23] , and this assessment (based on national inputs) clearly indicates DIKTAS TBAs: Una, Krka, Cetina, Neretva, Trebišnjica and Bilećko lake.

Another identification, done by UNESCO in 2008[24] delineated TBAs but just on principle "ellipse and circle", still without precise boundaries.

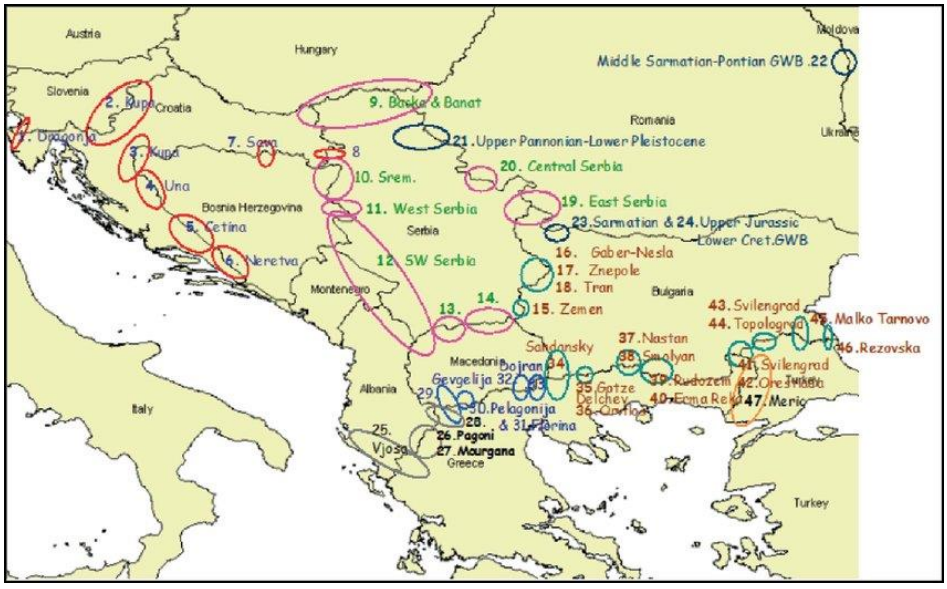


Fig.7: *Transboundary aquifers in SEE, UNECE 2008*

The second UNECE assessment from 2011[25] repeat the list of DinaricTBAs with more description, but in both assessment there is still no precise boundaries of TBAs.

Thus, DIKTAS 1 (2010-2014) project is the first ever precisely identifiedTBAs boundaries (in 2010, Fig. 8), as the base for any further boundaries fine tuning and any relevant analyses.

[23] https://unece.org/DAM/env/water/blanks/assessment/assessmentweb_full.pdf

[24]Strengthening cooperation on transboundary groundwater resources, September 2011, Water International 36(5):549-556DOI:10.1080/02508060.2011.615137

[25] https://unece.org/DAM/env/water/publications/assessment/English/ECE_Second_Assessment_En.pdf

Fig. 8: *DIKTAS 1 TBAs boundaries*[26]

In addition, it is obvious that process of delineation of TBAs in DIKTAS 1 is done few years before preparation of the first cycles of river basin management plans in beneficiary countries (Croatia prepared the first oneRBMP for the period 2013-2015). The process of the identification of TBAs in Dinaric region started much earlier that DIKTAS 1.

Because "mandatory role" of the RBMPs identified GWb, as basic management units, here is necessary (at very beginning of DIKTAS 2) provide new iteration to harmonize boundaries of GWBs with appropriate TBAs boundaries. As TBAsusually include few GWBs, overlapping of each with boundary of TBA must be provided in the aim of harmonization. The group on hydrogeology first task must be this activity, to prepare to other two groups relevant spatial framework for project outputs preparation.

[26] https://www.semanticscholar.org/paper/Characterization-of-transboundary-aquifers-in-base-Stevanovi%C4%87-Kukuri%C4%87/cf527de7c7f962c3fda5ee4f166caf2a2e660383/figure/0

ANNEX 8

GENDER ANALYSIS

1. GENDER ANALYSES OF DIKTAS 1

Simple approach is adopted where preliminary gender analyses is provide based on the gender of experts and focal points in preparation of crucial DIKTAS 1 documents, TDA and SAP. Next table reflect male/female ration in TDA preparation process.

Table 1: *Gender structure per groups in DIKTAS TDA preparation*

WG GROUP	Male	Female
HYDROGEOLOGY	5	0
ENVIRONMENTAL AND SOCIO-ECONOMIC ANALYSIS	3	1
LEGAL AND INSTITUTIONAL FRAMEWORK AND POLICY	1	4
STAKEHOLDER ANALYSIS	1	4
PROJECT NATIONAL FOCAL POINTS	0	4
TOTAL	**10**	**13**

In addition, table 2 reflect male/female ration in SAP preparation process.

Table 2: *Gender structure per groups in DIKTAS SAP preparation*

WG GROUP	Male	Female
HYDROGEOLOGY	5	0
ENVIRONMENTAL AND SOCIO-ECONOMIC ANALYSIS	3	1
LEGAL AND INSTITUTIONAL FRAMEWORK AND POLICY	1	4
STAKEHOLDER ANALYSIS	0	5
PROJECT NATIONAL FOCAL POINTS	0	4
TOTAL	**9**	**14**

Thus, DIKTAS 1 project was very well balanced regarding total number of male/female participation.

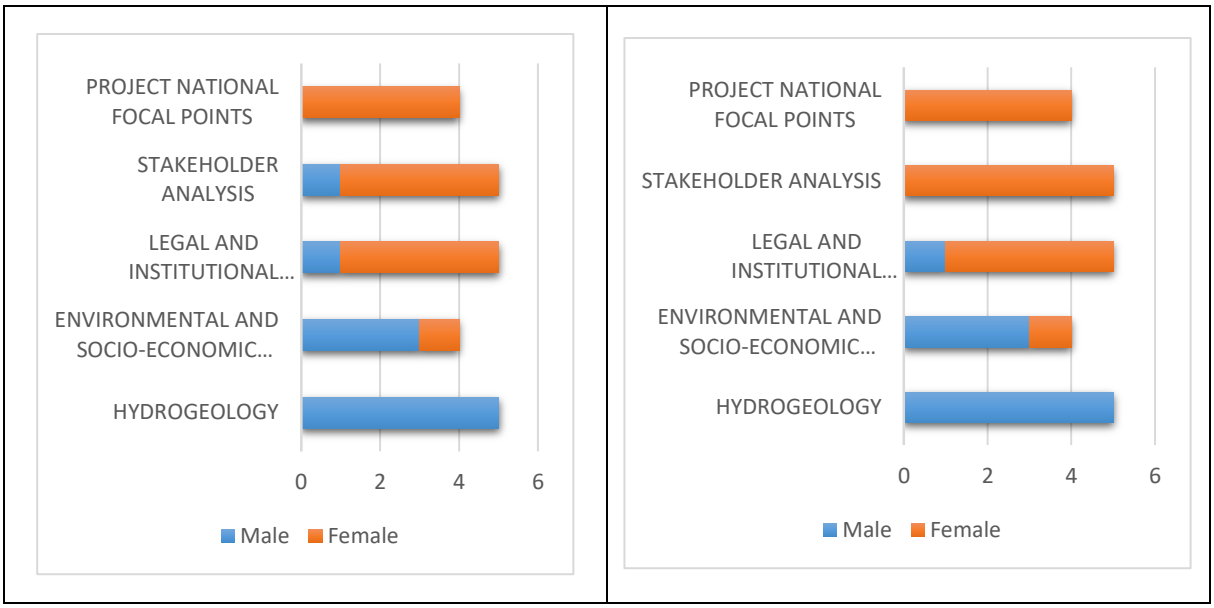


Fig 1: *Gender structure in DIKTAS 1TDA and SAP preparation*

Per groups, the structure reflects different situation. The least participation, during DIKTAS 1,females occupy hydrogeological group. While in DIKTAS participating countries engineering e.g. hydrogeology, is still traditionally considered as male occupation, international statistic say that in 2021, women geoscientists make 43% of all International Geoscience Programme project leaders, compared to just 19% in 2015.[27]
Very positive is that, differently from hydrogeological group, focal points (as position with decision level),were exclusively females. Female were prevailed also in stakeholder and legal policy group, but as the above mentioned, in total number of key experts in TDA (13:10) and SAP (14:9) preparation.

Above mentioned reflect very positive approach in composition of the DIKTAS 1 (2010-2014) staff and example of positive praxis for DIKTAS 2 (2024-2029).

The DIKTAS 2 project document identified UNDP Gender Marker GEN 1/2.[28]

2. GLOBAL GENDER GAP INDEXES IN BENEFICIARY COUNTRIES FOR 2023

The Global Gender Gap Index annually benchmarks the current state and evolution of gender parity across four key dimensions (Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment). It is the longest-standing index tracking the progress of numerous countries' efforts towards closing these gaps over time, since its inception in 2006.

[27]UNESCO IN ACTION FOR GENDER EQUALITY, United Nations Educational, Scientific and Cultural Organization, Paris, 2021
[28]IMPLEMENTATION OF THE STRATEGIC ACTION PROGRAM (SAP) 0F THE DINARIC KARST AQUIFER SYSTEM: IMPROVING GROUNDWATER GOVERNANCE AND SUSTAINABILITY 0F RELATED ECOSYSTEMSDIKTAS II, UNDP Project Document UNESCO IHP, PIMS 5776, 2019

Table 6:*TheGender Gap Indexes for 2023 per countries*[29]

Country	Score 0-1	Score change	Rank change
Albania	0.791	+0.004	+1
B&H	0.698	-0.012	-13
Croatia	0.730	no change	no change
Montenegro	0.714	-0.018	-15

3. GENDER MAINSTREAMING

Gender mainstreaming has been the primary methodology for integrating a gender approach into environment and development efforts. It is defined by the UN Economic and Social Council (ECOSOC) as: "...the process of assessing the implications for women and men of any planned action, including legislation, policies or programs, in any area and at all levels. It is a strategy for making the concerns and experiences of women as well as of men an integral part of the design, implementation, monitoring and evaluation of policies and programs in all political, economic and societal spheres, so that women and men benefit equally, and inequality is not perpetuated. The ultimate goal of mainstreaming is to achieve gender equality."

UNDP is committed to supporting capacity development of its national partners to adopt approaches that advance women's rights and take account of the full range of their contributions to development, as a foundation for SDG achievement. The commitment of UNDP on gender issues is covered in its gender equality strategy of 2008- 2011. Under this strategy, the GEF is identified as a key partner in the development and harmonization of supportive policy and legislative frameworks and institutional capacity building which is at the heart of the GEF's international waters portfolio approach for the improved management of transboundary waters. Involving both women and men in integrated water resources initiatives is likely to increase project effectiveness and efficiency.

Participation by both women and men improves project performance and improves the likelihood of sustainability. In other words, a project is more likely to achieve what planners hope it will achieve if women and men (both rich and poor and representing different sectors) are active participants and decision makers.

In the project area, in a changing environment towards EU accession the role of women is being enhanced. There is a tradition of active participation of women in the economy as a result of the existence of socialist regimes in the project countries till the early 90's.

On gender issues, the project will adopt a two-pronged approach:

1) Mainstreaming gender in project execution - Balanced gender participation in project execution activities will be ensured, including in working groups, the project management unit, text drafting teams etc. Gender consideration will be mainstreamed in all documents produced by the project, and particular attention will be paid to gender in monitoring and reporting activities. The project will work to ensure a balanced participation among men and women in the overall stakeholder involvement strategy and in consultation workshops, and will support both women's and men's contributions individually, rather than assuming that both groups will benefit equally from gender-neutral development interventions.

2) Integration of the gender perspective into water policies - The development and harmonization of supportive policy and legislative frameworks and institutional capacity building aimed at ensuring that the gender perspective is successfully incorporated into national and international water governance,

[29] https://www.weforum.org/publications/global-gender-gap-report-2023/in-full/benchmarking-gender-gaps-2023/

policy, and activities, will be a major objective of the project. This will be promoted by conducting Gender Analysis of the water sector in project countries, including:
- Identifying gaps in equality and developing strategies and policies to close those gaps.
- Considering gender issues in the mapping and analysis of water resource use.
- Promoting women's participation in awareness raising training activities.
- Supporting for educational activities, on topics such as the environment, energy, and decision making in general.
- Involving women's organizations: while the responsibility for implementing a gender approach does not rest solely with women's organizations, they are natural vehicles for promoting gender equality at the local as well as the national level.

The Gender Mainstreaming Strategy for the project including the above activities will be drafted together with the Stakeholders Involvement Plan and submitted for adoption at the first Steering Committee Meeting.

ALBANIA

The Albanian Government is fully aware that it faces significant challenges regarding equal opportunities and gender related problems. Women comprise half of the country's population but only one third of them compose employed workforce. Generally, the women are concentrated in sectors and occupations that offer lower wages compared to men. A significant number of women work in the informal sector, with a large share of unpaid family workers in agriculture. Deficiencies in water supply and waste water treatment impact on the female population in a differentiated and unequal manner: the burden of limited water availability and of taking care of sick dependents as a result of water-borne diseases disproportionally falls on women. It results in considerable loss in time, energy, productivity and income, further impacting negatively on women's status in the economy and in society, particularly for poor women and women in rural areas.

The Government of Albania considers "Gender equality and women' rights" among the main key national priorities. The so far taken measures are of a legal nature. Albania ratified the Convention on Elimination of all forms of Discrimination Against Women (CEDAW) and passed anti-discrimination and anti-domestic violence laws. The National Strategy on Gender Equality 2015-2020 is adopted. Overall, awareness of the need to address gender inequality has increased, but the nexus between gender issues and water governance, administration, and management has to be better established. In the water sector, gender mainstreaming is an integral part of the IWRM approach in Albania and part of the policy dialogue on IWM initiated through the IPMG water, and the Gender Equality Employee (GEE) of the lead Ministry (MARDWA) is a core member of the IPMG, and better Anchoring gender expertise in the Integrated Water Management and its Thematic Groups is also foreseen in Operational Guidelines. Mainstreaming gender into the water sector will focus on several areas: (i) Embedding gender knowledge and skills in training and capacity development activities, including better engaging in gender-responsive policy making, planning and dialogue related to water governance. (ii) In line with Albanian Gender Equality legislation (Law No.9970), UN ECOSOC, Eurostat, and Recommendation CM/Rec(2007)17, activities will seek to support the collection, analysis, and use of sex- and age-disaggregated data and gender statistics, in order to build basis for monitoring and assessing the impact of reform measures and investments on the female and male population. Particular attention will be paid in the design of awareness raising activity and the public targeted (iii) Gender-sensitive consultation mechanisms will seek to ensure women's equally legitimate voice, views and needs related to policy priorities and choices, notably in design and implementation of river basin management approaches and activities related to water/wastewater services. It is to be noted that IPA

2015 support to the Gender Equality Facility should also contribute to strengthen capacities to implement and mainstream gender into programmes cycle, reporting, monitoring and evaluation.[30]

BOSNIA AND HERZEGOVINA

Gender mainstreaming in the legislative and strategic framework has been an ongoing activity of gender institutional mechanisms ever since their establishment, and so the achievements reached in this regard in the reporting period are the result of a several years long strategic approach to the gender mainstreaming at all levels in B&H.[31]

Many women still consider their family roles as primary responsibilities that take priority over employment and career. (2003 Gender Barometer Bosnia and Herzegovina, cited in ILO 2011, p. 6). To some extent, this belief helps to account for the previously mentioned high levels of inactivity and interrupted work/career patterns. The consequences of the latter are lower wages during the employment period due to absences from the labor market, lower pensions for those who work, and financial reliance on husbands and/or family members. The amount of time that women spend in paid work is a key determinant of their wage levels. More women than men work part-time to accommodate family obligations and, consequently, are at a greater disadvantage than men in improving their career prospects. Since it is cheaper and more flexible for employers to employ part-time workers, given the prevailing social gender norms, employers may be more inclined to employ women as part-time workers or workers with shorter contracts.

Women account for the majority of unpaid family workers, although the statistical estimates of the number of unpaid family workers are not sufficiently accurate. FB&H has the highest percent of employees (82.5 percent) and the lowest percent of unpaid family workers (two percent). In the RS and BD, 66 and 63 percent are employees, while the self-employed account for 29 and 30 percent, respectively. The RS and BD have significantly higher percent of unpaid family workers at 6 and 7 percent, respectively. Similarly, in the entities, the majority of women are employees, with the highest percentage of self-employed women in the RS, and the lowest percentage of women in unpaid family labor in FB&H. The distribution among entities is similar to the national trend – FB&H has the highest percent of women employees (86 percent), and the RS and BD have 68 percent and 69 percent, respectively. The RS has the highest percent of self-employed women - 21 percent, compared with 17 percent in the BD and 11 percent in the FB&H. Only three percent of employed women in the FB&H are involved in unpaid family labor, compared with 11.3 percent in the RS, and 14.4 percent in the BD.[32]

CROATIA

The Croatian Constitution enshrined gender equality in a constitutional amendment in 2000 (Article 3). ender equality is reinforced in Article 14 of the Constitution, which prohibits discrimination based on race, skin colour, sex, language, political or other opinions, national or social origin, property, birth, education, social status, or any other characteristic.

The European Union (EU) gender equality acquis has been transposed into Croatian law as part of its accession to the EU. In anticipation of becoming an EU Member State, the Republic of Croatia promoted gender equality through national policies to improve the position of women.

The Gender Equality Act was consolidated first in 2008, and again in 2017. It constitutes the legal framework for gender equality in Croatia and establishes the protection and promotion of gender

[30] https://neighbourhood-enlargement.ec.europa.eu/system/files/2017-04/ipa_2016-038718-5_support_to_water_management.pdf

[31] Gender Equality Agency of Bosnia and Herzegovina. Progress report on the implementation of the Beijing Declaration and Platform for Action in BiH within the Beijing +25 process (2019).

[32] https://www.measurebih.com/uimages/Edited20GA20Report20MEASURE-BiH.pdf

equality as a fundamental value. Moreover, it also ensures the application of the equality principle in all aspects of national policy. Article 3 of the Act refers to gender mainstreaming and stipulates that public bodies should – at all stages of the planning, adoption and implementation stages of legal acts, decisions, and actions – assess their gender impact with a view to achieving genuine equality between women and men. However, the legal obligation to implement gender mainstreaming does not include attendant provisions for enforcement or sanctions.
The first National Policy for Gender Equality was developed and adopted for the period 2001-2005 and was in place until 2015. At the time of data collection, before December 2021, no national action plan was implemented. A new policy has been under development for several years and plans remain for a National Policy for Gender Equality for 2022 to 2027, although one was not in place in December 2021. The National Policy will be implemented through a National Action Plan for the period of 2022 to 2024. It will be followed by a second national action plan for the period 2025-2027. Gender mainstreaming efforts are implemented through the National Action Plan for Gender Equality 2022-2024 and legal obligations to implement gender mainstreaming and for government staff to use gender-neutral language in their work. Croatia has several other policies to promote gender equality within a range of sectors.
Evaluation as a method for gender mainstreaming is only implemented in EU funded projects, as this is a requirement under the programme funding. Similarly, gender budgeting is not used and there are currently no legal or policy obligations in place which require the implementation of such an approach. The Office for Gender Equality organises four seminars each year on gender equality for the public administration. In addition, the government agency regularly disseminates various printed materials and invites representatives of the ministries to public events it organises. Other gender mainstreaming activities of the agency include the development and dissemination of specific Gender Mainstreaming Manuals for politicians, members of the judiciary, gender equality coordinators, county and municipal gender equality commissions, and employees of the Office for Gender Equality in 2017, as part of a twinning project in cooperation with the Republic of Finland

MONTENEGRO

Women are hardly represented in employment in sectors such as mining, construction, electricity, gas and water supply, wastewater treatment, even transport. However, in some other sectors, like education, health, social and personal services, finance and insurance, there are more women than man.
Gender is elaborated in the National Strategy of Sustainable Development (2016), but not strictly in the context of gender mainstreaming in environmental policy. In 2017, Montenegro was included in a regional programme to support gender mainstreaming in the MRV (monitoring, reporting, verification), implemented by the United Nations Global Programme for Support. In Montenegro, this programme raised the level of knowledge and understanding of the correlation between gender and climate change and resulted in the drafting of the Action Plan for the gender mainstreaming agenda. The Second Biennial Update Report (BUR 2019) and the Third National Communication (2020) to the UNFCCC have separate chapters on gender equality and climate change.
Public policies in Montenegro are not gender-mainstreamed enough, even though the Law on Gender Equality defines that state bodies should assess and evaluate the impact of their decisions and activities on the position of women and men in all phases of planning, making and implementing decisions, and taking activities. However, most public policies do not define positive measures to promote gender equality in a manner defined by the Law1. Preliminary research showed that only 26.8% of public policies treat gender equality in some way, while others lack that aspect entirely. State institutions and their employees do not fully grasp the key concepts of gender equality and their staff is undertrained to be implement to apply the Law on Gender Equality. With this in mind, the CEDAW

Committee has warned that the lack of political will to implement gender-responsive policies allows for the discriminatory practices to persist and slows down the democratic progress of both the state and society.[33]

[33] National Strategy for Gender Equality 2021-2025

ANNEX 9

STAKEHOLDERS INVOLVEMENT

Stakeholder involvement is one of the key aspects of any project. The effort to successfully identify the role of the stakeholders and appropriately engage them in a project is an effort to address a range of issues linked to its success and sustainability.

According to the international experience, while the implementation of the project is advancing and its outputs are achieved and a consultation mechanism paving the way to the creation of cooperative management mechanisms is put in place, stakeholders will either "demand" their involvement since they will be asked to implement decisions pursuant to the key outputs or it will become necessary to involve them in order to implement the decisions.

The Dinaric Karst area is part of a continuously changing system. The economic landscape in the project countries is highly dynamic and likely to go through major alterations in the coming years. This may result in new and/or shifting pressures exerted on the natural system. In addition, conditions in nature are changing following the natural processes. The climate changes/variability has an effect in the natural processes rendering surface/groundwater management more complex. The management frameworks, including the legal and institutional, are under change as an outcome of the evolving status of the project countries with regard to the EU accession (except Croatia as full member from 2013).

Within this highly unstable environment, the project assists in creating the conditions and putting in place the tools for the countries to initiate a process toward the sustainable management of groundwater and surface water resources in the Dinaric Arc Aquifer system area; the project generates the knowledge, assists in the creation of trust, and enables the establishment of coordination/cooperation mechanisms. It is essential that the knowledge it generates and the recommendations made in this regard are adequately and appropriately informed with tools, and innovations to respond and adapt to on-going and emerging changes. This is possible if the actors that are involved in the changes mentioned above inform these decisions and recommendations.

Finally, equally important to the linkages between the project activities and national strategies and water management documents is the multilevel non-linear linkages among the groups of stakeholders that are by default engaged in the management of the aquifers system and that the project activities concern: who, how, when, at what level is engaged. The former will affect the success of the project in terms of implementation of the activities while the latter will affect the success of the project in terms of creating the conditions for sustaining its outcomes and achievements. Structured involvement of the appropriate stakeholders at the appropriate level and time in the different project activities using the appropriate means will secure the creation of these linkages.

There are findings in the Stakeholders Analysis[34]of DIKTAS 1 (2010-2014) regarding the possible contribution of the stakeholders to the project that should be taken into consideration.

"Expertise/information" and "human resources" are easily or very easily available to most of the organizations/institutions/authorities represented by the interviewees; the stakeholders would be willing to mobilize these in support of the implementation of the project.

The findings of the DIKTAS 1 indicate that some stakeholders, mostly central and regional authorities and to a lesser degree NGOs, are willing to use their "political influence" for the benefit of the project. There are also a few stakeholders –among those interviewed- ready to contribute some of their restricted financial resources for the implementation of activities within the project or for improving the management of the resource. These mostly come from the development and environmental agencies and organisations as well as from the Ministries. Information provision is one of the pre-requisites these

[34]http://diktas.iwlearn.org/resources/projectdocuments/DIKTAS%20Stakeholders%20-%20Public%20Participation%20Strategy.pdf/view

stakeholders need to be approached and investigate what other prerequisites there might be and whether these are in line with the capacities and mandate of the project.

The main factors that would hinder their participation in the management of the transboundary karst aquifers were indicated to be the economic costs (including fees/taxes implied by measures, travel, equipment etc.), workload and access to information. The most effective actions to tackle these constraints would be: creating opportunities for exchange, financial support, and access to information and training.

The Project should make sure that all stakeholders that have been identified participate, at an appropriate for each group level, in the project activities.

Special attention should be given to the users of karst water. A number of measures are already included the project document on the basis of the issues identified through the TDA/SAP process. The implementation of these measures may have an effect on the users; positive or negative. As an example, the status of some of them may be enhanced by the improvement of the situation in terms of water quality or water availability. There may be though, users currently enjoying benefits that may lose by the implementation of the measures, or others who will need to undertake some of the related economic costs. Overall, the attitude of the users against the project measures will depend, most probably, on whether they will benefit/suffer positive/negative changes as a result of the implementation of these measures. This may influence their implementation hence the sustainability of the outcomes of the project.

Comprehensive analysis and list of stakeholders in the project countries and their characteristics is given as Annex 3 of the Stakeholders and Public Participation Strategy.[35]

[35]http://diktas.iwlearn.org/resources/projectdocuments/DIKTAS%20Stakeholders%20-%20Public%20Participation%20Strategy.pdf/view

ANNEX 10

POSSIBLE SYNERGY WITH OTHER EU AND UN PROJECTS IN BENEFICIARY COUNTRIES

In the period between SAP preparation, Project document DIKTAS 2 preparation and March 2024 numerous project related to water management were finish or close to the finish in participating countries. With exception of Croatia, which as EU member and already follow strict standards and timelines (country already prepared RBMP for 3 cycles, last one 2022-2027), other countries, via different mechanism of international financial support, mostly from EU (European Commission) and UN bodies (UNESCO, UNDP, IAEA etc) try to improve water management sector in conjunction with domestic capacities.

Here is listed just few projects (finished or still in progress) which can significantly support and accelerate DIKTAS 2 activities. Obviously, the list is not exhausted and must be supplemented during DIKTAS 2 Inception Meeting.

ALBANIA

EU project River Basin Management and Transparency (period April 2018 –October /2020)[36]
The overall objective of this project is to strengthen civil society organizations (CSOs) capacities for involvement in the process of development of River Basin Management (RBM) plans in Albania and contribute toward wider public support of RBM Plans.

EUSIWM Project Implementation (February 2018 –July 2023)[37]
The overall objective of the action is to enhance the implementation of the national water reform and the progress of Albania towards EU water legislation requirements through integrated water resource management by strengthening capacities for managing the sector in line with EU policies.
Activities include:
a) Assessment of the legal framework on national water management regarding the approximation of national legislation with the EU Acquis.
b) Preparation of a phased roadmap for the full-fledged RBMPs for all six river basins.
c) Support of the installation of sufficient capacities to operationalize the IWRM in the country based on the National IWRM Strategy and the RBMPs.
d) Analysis and assessment on the budgetary framework of water resource management at basin level and preparation of an implementation plan.

INSTRUMENT FOR PRE-ACCESSION ASSISTANCE (IPA II) 2014-2020, IPA 2016 Action Programme for Albania, Support to Water Management[38]

[36] https://www.eeas.europa.eu/delegations/albania/river-basin-management-and-transparency_en?page_lang=en&s=214
[37] https://www.entwicklung.at/en/projects/detail-en/eusiwm-eu-support-to-integrated-water-management-ec-funds
[38] https://neighbourhood-enlargement.ec.europa.eu/system/files/2017-04/ipa_2016-038718-5_support_to_water_management.pdf

The overall objective of the action is to enhance the implementation of the National Water Reform and the progress of Albania towards EU water legislation requirements. This will be achieved through two components: 1) Integrated water management by strengthening capacities for managing the sector in line with EU policies and by consolidating earlier efforts. 2) Reducing pollution of the Adriatic coastal water by strengthening capacities and proper operation and maintenance of wastewater infrastructure along the coast, particularly in selected municipalities: Velipoja, Lezha/Shengjin, Durres, Kavaja, Vlora, Ksamil and Saranda, Orikum, supported by the EU, but also new ones such as Divjaka, Spille, and Ionian sea Riviera from Dhermi to Saranda. Both components will be delegated to (an) EU Member State body/bodies or consortium following a call for expression of interest. This capacity building action will provide assistance notably to the Ministry of Agriculture, Rural Development and Water Administration, the river basin authorities (under component 1); and to the Ministry of Transport and Infrastructure, the water and sewerage utilities, and the new national agency for Water supply, sewerage and waste (component 2). The Technical Secretariat of the National Water Council will also benefit from the action.

BOSNIA AND HERZEGOVINA

EU Support to the River Basin Management in Bosnia and Herzegovina 2023-2024[39]

The EU Water Framework Directive (WFD) has been the main law for water protection in Europe. It applies to inland, transitional and coastal surface waters as well as groundwater. It ensures an integrated approach to water management, respecting the integrity of whole ecosystems, including by regulating individual pollutants and setting corresponding regulatory standards. It is based on a river basin district approach to make sure that neighboring countries manage the rivers and other bodies of water they share. The key objectives of the WFD are set out in Article 4 of the Directive. It requires Member States to use their River Basin Management Plans (RBMPs) and Programmes of Measures (PoMs) to protect and, where necessary, restore water bodies in order to reach good status, and to prevent deterioration. River Basin Management Plans are the key tools for implementing the WFD.
Project “EU Support to the River Basin Management in B&H”, funded by the European Union in the amount of 1,125,000 EUR under the Instrument for Pre/Accession Assistance (IPA), aims to accelerate the much/needed reform of the water sector in Bosnia and Herzegovina. Harmonizing the methodologies for preparing River Basin Management Plans (RBMPs), in line with the EU Water Framework Directive in Bosnia and Herzegovina, are the key tasks that this project, together with beneficiary institutions in B&H.

ESAP2030+ (2022-2023)[40]

The ESAP 2030+ project is as an adequate response of the Embassy of Sweden in Bosnia and Herzegovina to a request made by the authorities at the state level, the Federation of Bosnia and Herzegovina (FB&H), the Republika Srpska (RS), and the Brčko District (BD) to support the development of a BiH wide environmental strategy and action plan including four jurisdiction strategies and action plans.
The development of BiHESAP 2030+ is entrusted to the Stockholm Environment Institute (SEI) from Sweden, and when adopted, it will provide a critical tool for relevant authorities to reach environmental sustainability and improved citizen health and well-being for current and future generations across BiH.
The project key accomplishments are:

- Environmental, water and other authorities in BiH to have an environmental strategy and action plan with ambitious strategic goals and thematic objectives, yet feasible actions that are clearly defined, agreed and adopted. This document will steer policy measures and domestic and

[39] https://upravljanjevodama.ba/
[40] https://esap.ba/about-the-project/

international financing that will result in a better state of the environment in BiH. It will help to further align the BiH's legal and institutional frameworks with the EU environmental laws and procedures, the so called *environmental acquis*
- The capacities of environmental organizations, institutions and networks in BiH are enhanced
- The general public and the business sector are more aware of the importance of environmental issues in BiH.

In the long-term, the project will improve the state of the environment in BiH as well as contribute to progress in the process of BiH becoming a member of the EU.

IAERRER 7013 Technical Cooperation Project(2021-stil in progress)

Evaluating Groundwater Resources and Groundwater – Surface Water Interactions in the Context of Adapting to Climate Change, Bosnia and Herzegovina, Montenegro[41]

Project applies isotopehydrology techniques in "Oko"transboundarykarst aquifer.

This case study will deploy precipitation, groundwater and surface water sampling, as well as environmental isotope analysis, to determine the hydrological conditions of the Oko-Bijela Gora Karst Aquifer. This transboundary aquifer, which is shared by Bosnia and Herzegovina and Montenegro, is predominantly drained by the Oko spring, with an estimated catchment area of approximately 100 km^2. The spring is used to supply water to Trebinje, a town in Bosnia and Herzegovina with more than 15 000 consumers.This study is the first attempt to establish the use of isotope techniques as a tool for transboundary groundwater – surface management between Bosnia and Herzegovina and Montenegro, and in the region in general. The regional distribution of stable isotopes in the water molecule (δ18O and δ2 H) will be used to identify aquifer recharge conditions. Based on this, isotope-enabled models and mapping will help to determine the groundwater recharge areas and the influence of surface water on the hydrogeological cycle. The IAEA will provide field and analytical equipment and consumables, and facilitate training and expertise in isotope analysis.This project is a part of DIKTAS project are and nice opportunity for projects synergy. The project is lead by Geological Survey of the Republic of Srpska and Geological Survey of Montenegro.

UNEP/GEF Med Programme Child Project 2.1 "Mediterranean Coastal Zones, Water Security, Climate Resilience and Habitat Protection" UNESCO's Component 2 "Management of Coastal Aquifers and Related Ecosystems", UNESCO 2022-2023

Project task for B&H entailed compilation, review and analysis of existing literature and data at national level on SGD and marine freshwater interactions (seawater intrusion) in costal aquifers, including hydrogeological maps of coastal aquifers and previous studies on the location of SGD preferential zones and on any characterization methods used to measure and quantify SGD".

Bosnia and Herzegovina covers just about 12.2 km of Adriatic Sea line, near to Neum town (figure 1). It is the second shortest coastline in the world, after Monaco. In sense of possible interaction fresh-marine water and submarine discharge, at national level, Neum bay is in the focus of the analysis.

In addition, despite very limited coast line, Bosnia and Herzegovina play very important role in costal transboundary aquifers management in the Mediterranean. This is particularly case in those aquifers shared between B&H and Croatia, where very spacious recharge zones of springs are dominantly located in B&H but discharge points, situated close to or beneath the sea, exclusively in Croatia.[42]

[41] https://www.iaea.org/sites/default/files/22/04/21-00998e_rer7013_web.pdf

[42] NATIONAL REPORT BOSNIA AND HERZEGOVINA UNEP/GEF Med Programme Child Project 2.1 "Mediterranean Coastal Zones, Water Security, Climate Resilience and Habitat Protection" UNESCO's Component 2 "Management of Coastal Aquifers and Related Ecosystems"

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IAERRER 7013 Technical Cooperation Project (2021-stil in progress)
Evaluating Groundwater Resources and Groundwater – Surface Water Interactions in the Context of Adapting to Climate Change, Bosnia and Herzegovina, Montenegro
Project already described in the previous paragraph of the document.

Strengthening the Capacities for Implementation of the Water Framework Directive in Montenegro (February 2015 – February 2018)[43]
This project contribute implementation of the WFD in Montenegro and all other water-related directives through the provision of an operational and efficient monitoring network and development of the River Basin Management Plans for the Adriatic and Danube river basins.
The project supported the preparation of the River Basin Management Plans for the Adriatic and Danube river basins in line with the EU standards, while public consultations were conducted in accordance with the WFD.
Furthermore, it helped set up a Water Monitoring System, including groundwater, upgraded institutional capacities for monitoring and provided various training programmes for key stakeholders. In short, the project helped establish the necessary conditions for improved water resources management in the country, in line with the WFD requirements.

[43]https://evropskakuca.me/project/annual-action-programme-for-montenegro-2014-strengthening-the-capacities-for-implementation-of-the-water-framework-directive-in-montenegro/