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IMPLEMENTATION COMPLETION AND RESULTS REPORT

[TF019380/TF019385/TF0A2318/TF0A2322/TF0A2320/TF0A2317/TF0A2319/TF0A2321]

ON A

GRANT

IN THE AMOUNT OF US\$8.732 MILLION
TO

BOSNIA AND HERZEGOVINA, MONTENEGRO, SERBIA

FOR THE

WEST BALKANS DRINA RIVER BASIN MANAGEMENT
November 30, 2021

Water Global Practice
Europe and Central Asia Region

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CURRENCY EQUIVALENTS

(Exchange Rate Effective March 4, 2021)

Bosnia and Herzegovina

Unit = Convertible Marka (BAM)

BAM 1 = US\$0.61736

US\$1 = BAM 1.61962

Montenegro

Unit = Euros (EUR)

EUR 1 = US\$1.20745

US\$1 = EUR 0.82810

Serbia

Unit = Dinar (RSD)

RSD 1 = US\$0.01022

US\$1 = RSD 96.8972

Fiscal Year

January 1–December 31

ABBREVIATIONS AND ACRONYMS

BiH	Bosnia and Herzegovina
CPF	Country Partnership Framework
DFPP	Drina Flood Protection Project
DRB	Drina River Basin
DTF	Drina Task Force
ERR	Economic Rate of Return
ESMF	Environmental and Social Management Framework
FBiH	Federation of Bosnia and Herzegovina
GDP	Gross Domestic Product
GEF	Global Environment Facility
HMS	Hydro-Meteorological Service
HPP	Hydropower Plant
ICPDR	International Commission for the Protection of the Danube River
ICR	Implementation Completion and Results Report
ISR	Implementation Status and Results Report
ISRBC	International Sava River Basin Commission

IT	Information Technology
IW	International Waters
IWRM	Integrated Water Resources Management
M&E	Monitoring and Evaluation
MNE	Montenegro
MOFTER	Ministry of Foreign Trade and Economic Relations, BiH
PAD	Project Appraisal Document
PDO	Project Development Objective
PIT	Project Implementation Team
PIU	Project Implementing Unit
PMT	Project Management Team
RBMP	River Basin Management Plan
RPF	Resettlement Policy Framework
RS	Republika Srpska
SAP	Strategic Action Plan
SCCF	Special Climate Change Fund
SCD	Systematic Country Diagnostic
SDIP	Sava and Drina Rivers Corridors Integrated Development Program (P168862)
SEE	South Eastern Europe
SRB	Serbia
TDA	Rapid Transboundary Diagnostic Scan and Analysis
TOR	Terms of Reference
WBDRBM	West Balkans Drina River Basin Management
WBIF	EU West Balkan Investment Facility
WMO	World Meteorological Organization
WRM	Water Resources Management

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P145048	West Balkans Drina River Basin Management
Country	Financing Instrument
Western Balkans	Investment Project Financing
Original EA Category	Revised EA Category
Partial Assessment (B)	Partial Assessment (B)

Organizations

Borrower	Implementing Agency
Bosnia and Herzegovina, Montenegro, Serbia	Serbia Ministry of Agriculture and Environment Protection, Bosnia and Herzegovina - Ministry of Foreign Trade and Economic Relations, FBiH Ministry of Agriculture, Forestry and Water Management, RS Ministry of Agriculture, Water Management and Forestry, Montenegro Ministry of Agriculture and Rural Development

Project Development Objective (PDO)

Original PDO

The objective of the Project is to improve mechanisms and capacity of the Project Countries to plan and manage the transboundary Drina river basin, incorporating climate change adaptation.

FINANCING

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
World Bank Financing			
TF-A2320	1,668,885	1,668,885	1,668,885
TF-A2317	1,706,385	1,671,225	1,671,225
TF-A2319	1,177,190	1,177,190	1,177,190
TF-A2322	1,458,435	1,455,000	1,455,000
TF-A2318	1,482,635	1,482,635	1,417,499
TF-A2321	1,238,890	1,238,890	1,214,161
Total	8,732,420	8,693,825	8,603,960
Non-World Bank Financing			
Borrower/Recipient	0	0	0
Total	0	0	0
Total Project Cost	8,732,420	8,693,825	8,603,960

KEY DATES

Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
09-May-2016	11-May-2017	03-Jun-2019	31-Oct-2020	30-Apr-2021

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US\$M)	Key Revisions
30-Jun-2020	3.75	Change in Results Framework Change in Loan Closing Date(s)

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Moderately Satisfactory	Moderately Satisfactory	Substantial

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	22-Dec-2016	Satisfactory	Moderately Satisfactory	.39
02	25-Jun-2017	Moderately Satisfactory	Moderately Satisfactory	.72
03	15-Dec-2017	Moderately Satisfactory	Moderately Satisfactory	1.02
04	30-Jun-2018	Moderately Satisfactory	Moderately Satisfactory	1.03
05	27-Dec-2018	Moderately Satisfactory	Moderately Satisfactory	1.70
06	28-Jun-2019	Moderately Satisfactory	Moderately Unsatisfactory	2.45
07	01-Jan-2020	Moderately Unsatisfactory	Moderately Unsatisfactory	2.84
08	30-Jun-2020	Moderately Unsatisfactory	Moderately Unsatisfactory	4.13
09	14-Jan-2021	Moderately Satisfactory	Moderately Satisfactory	6.84

SECTORS AND THEMES

Sectors

Major Sector/Sector	(%)
Public Administration	2
Other Public Administration	2
Transportation	2
Other Transportation	2



Water, Sanitation and Waste Management	96
Public Administration - Water, Sanitation and Waste Management	11
Other Water Supply, Sanitation and Waste Management	85

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3)	(%)
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Environment and Natural Resource Management	0
Water Resource Management	100
Water Institutions, Policies and Reform	100

ADM STAFF

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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. CONTEXT AT APPRAISAL

Context

- 1. The transboundary Drina River in the Western Balkans is the most important tributary of the Sava River and part of the Danube River Basin.** The Drina River Basin (DRB) covers 19,800 km², equally divided among Bosnia and Herzegovina (BiH), Montenegro (MNE), and Serbia (SRB). It is home to almost 1 million people. Gross domestic product (GDP) per capita (2011) ranges from US\$4,372 in BiH to US\$6,927 in MNE, with SRB at US\$5,759. However, these national averages are misleading, particularly in the case of MNE. The economy of many communities in the DRB tends to be depressed due to difficult transportation links, comparatively long distances to markets, and the perilous state of many of the old local industries and infrastructure.
- 2. The DRB is central for the environmental, economic, and social development of the three countries and the Balkan Peninsula.** As one of the last ‘untouched’ river basins in Europe, the DRB is rich in natural resources, water, and biodiversity. The river water, of generally good quality due to its high flow rate and low pollution, is rich in fish, both farm-raised and wild, making fishing and fish farming an important economic activity. Its many natural parks with scarce and endemic species and its stunning scenery including glacial lakes in the Dinaric Alps and the Tara Canyon, a United Nations Educational, Scientific, and Cultural Organization (UNESCO) World Heritage, attract many tourists. The Drina River also provides water for agriculture and has an important potential for energy production. The DRB still holds the largest unutilized hydropower potential in Europe estimated to represent an additional 12,000 GWh per year. The eight existing large and medium hydropower plants (HPPs) in the DRB, already produce energy for over 1 million people. An estimated 60 percent of the potential for hydropower generation is still untapped.
- 3. The Drina River and its tributaries are also known for floods and droughts with significant impacts on livelihoods and the local economies.** Originating in the Dinaric Alps in MNE, the Drina River drains a vast karst plateau that receives the highest annual rainfall (up to 3,000 mm) and the highest specific runoff (up to 50 l/s/km²) in Europe. Typical for karst regions, the Drina River has high fluctuation between low and high flows. In recent years (2010, 2013, and again in 2014), flooding has caused devastation along the Drina River and its tributaries. The floods of 2014 were a serious blow to SRB and BiH with an estimated cumulative impact of around 15 percent of GDP (9.3 percent damages and 5.6 percent lost output) in BiH, around 4.7 percent of GDP in SRB (2.7 percent in damages and 2.0 percent in economic losses). The hardest-hit economic sectors were energy, mining, and agriculture but significant damages were also inflicted on transport infrastructure. While the impact of climate change on the overall magnitude, duration, and frequency of floods and droughts cannot be forecasted with precision, evidence exists that extreme wet and dry episodes have increased in recent years in frequency and in amplitude across the basin.



- 4. There was limited capacity for integral and transboundary management of the DRB to effectively manage natural and water resources and water-related risks and adapt to climate change.** The riparian countries lacked institutional capacities, a solid knowledge base including real-time hydrometeorological data, and analytical tools, such as hydrological models for the management of the DRB. All three countries struggled with the operationalization of an integrated water resources management (IWRM) approach in an environment of financial constraints and low institutional capacities. In addition to these limitations at the national level, the lack of confidence and limited communication among the countries of former Yugoslavia, following the conflicts in the 1990s, prevented transboundary cooperation. There was hardly any coordination or even exchange of information and data for operational water resources management, for example, in the case of floods and droughts and for realizing a strategic planning and prioritization of investments to better share benefits and risks.
- 5. International organizations, including the World Bank, started providing assistance to promote IWRM and transboundary cooperation in the DRB.** All three countries, with the support of the EU Instrument for Pre-Accession Assistance (IPA) funds, the EU West Balkan Investment Facility (WBIF) and also the World Bank, in recent years prepared and implemented several projects for water resources management in different parts of the DRB. With support of the International Commission for the Protection of the Danube River (ICPDR) and the International Sava River Basin Commission (ISRBC), EU-compliant transboundary River Basin Management Plans (RBMPs) and a Flood Risk Management Plan had been developed. Despite these efforts, no effective transboundary cooperation had been established in the DRB and this project is the first to be implemented by BiH, MNE, and SRB together.
- 6. The World Bank had been supporting the regional policy dialogue as well as strategic and sector analyses since 2011.** Of great importance was the Rapid Transboundary Diagnostic Scan and Analysis (TDA), a baseline assessment of the basin analyzing its key strengths and weaknesses and identifying areas and opportunities for cooperation and investments for the three countries. It concluded that flood and drought risk management should not be approached in isolation from the other water management issues and proposed a set of interventions, including capacity development and institutional strengthening for international water management, urgently required immediate investments, mostly to protect against floods, regional studies, and the preparation of medium- and long-term investments. The assessment showed that despite the ongoing cooperation within the International Danube and Sava Commissions, closer collaboration within bilateral and trilateral agreements between BiH, MNE, and SRB is needed for the management of the DRB.
- 7. In this context, BiH, MNE, and SRB requested the World Bank, Global Environment Facility (GEF), and Special Climate Change Fund (SCCF) to partner for a project to strengthen the mechanisms for cooperation across boundaries and build institutional capacities** to ensure a rational and equitable management of the DRB supporting the significant socioeconomic development opportunities offered by its abundant natural resources while at the same time protecting the environment and building resilience to climate change. The project is the result of several years of World Bank engagement and dialogue in water resources management in the Balkans and was built on the specific experience of GEF-International Waters (IW) and the World Bank in similar transboundary river basin management projects in other parts of the world and in the region. The GEF/World Bank Project Transboundary Management of the Neretva and Trebisnjica in BiH and Croatia (2009–2015) had demonstrated that good results could be achieved in this complex region and served as an example for project design.

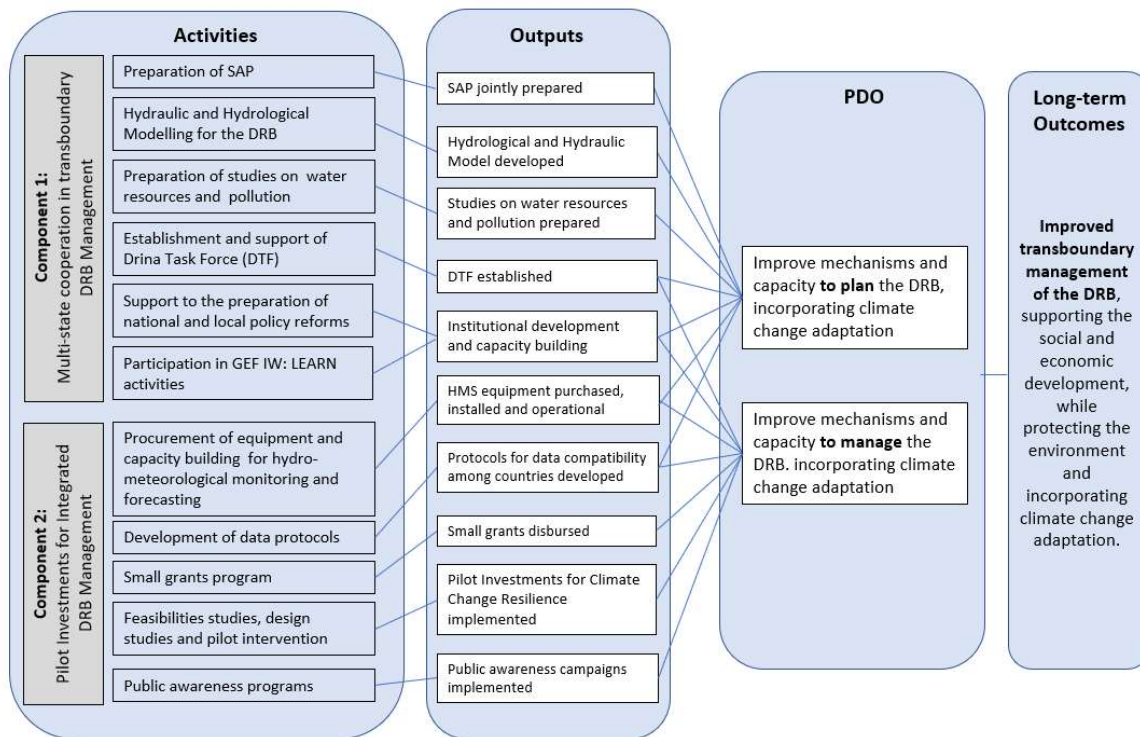


Theory of Change (Results Chain)

8. The overall objective of the project was to improve the planning and management of the transboundary DRB, incorporating climate change adaptation. For this, the project improved mechanisms and capacities to plan and manage the DRB, for example, through the development of the Strategic Action Plan (SAP), the hydrological model, and other tools for water resources management. Further, the project realized investments in hydrometeorological stations and built institutional capacities for IWRM of key agencies. At the country level, the project also realized pilot investments and implemented a small grants program and public awareness campaigns to engage local communities in the management of the DRB and support them to better prepare for droughts and floods while making sustainable use of the environmental DRB assets. The Project Appraisal Document (PAD) did not require a Theory of Change or results chain; therefore, an ex-post results chain was constructed based on the PDO and the results indicators of the PAD.

9. The underlying assumptions for achieving the project’s goals were (a) the adequacy of the institutional capacity for the implementation of the proposed activities, (b) the ongoing political support for transboundary cooperation in water resources management, and (c) consistency in the sector strategies and policies. The risk of changes in these assumptions during implementation of a project involving three countries, different entities, and sectors had been identified and accepted during preparation.

Figure 1. Theory of Change

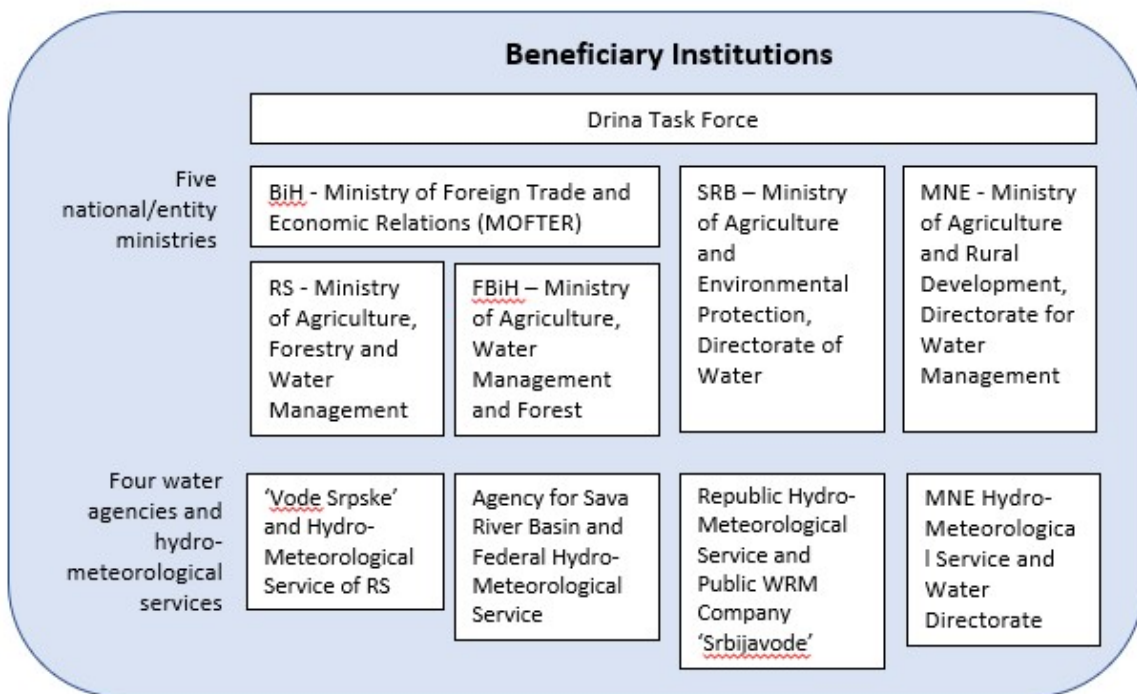




Project Development Objectives (PDOs)

- 10. The PDO at appraisal was to improve mechanisms and capacity of the Project Countries to plan and manage the transboundary Drina river basin, incorporating climate change adaptation. The PDO was not changed during project implementation.
- 11. **Project beneficiaries.** The activities of the project directly targeted five national/entity ministries and four water agencies and their hydrometeorological services (HMSs) from the riparian countries. The Drina Task Force (DTF) was established as a steering committee to coordinate the planning and the implementation of the project’s activities among the riparian countries.

Figure 2. Beneficiary Institutions



- 12. Direct beneficiaries of the project are 500,000 inhabitants in vulnerable communities affected by floods and droughts and in the 33 riparian municipalities that directly profit from the pilot investments, the small grants, and the public awareness campaigns. Indirect benefits will be experienced by the entire DRB ecosystem and all DRB water users that include 1 million inhabitants in 57 municipalities.

Key Expected Outcomes and Outcome Indicators

- 13. The PAD delineates the following project outcomes and associated indicators:



Table 1. Outcome and Indicators at Approval

Key Expected Outcomes ¹	PDO Indicators
(1) Improved mechanisms and capacity to plan the transboundary DRB	<ul style="list-style-type: none"> SAP jointly prepared and endorsed at ministerial level in all three countries (y/n) Hydrological real time model (including climate change impacts) jointly endorsed and operational (y/n)
(2) Improved mechanism and capacity to manage the transboundary DRB	<ul style="list-style-type: none"> Drina Task Force (DTF) operational (y/n) Hydro-meteorological data collected and shared for modelling and forecasting (y/n)
	<ul style="list-style-type: none"> 30 percent of SAP activities address climate change issues related to droughts and floods (percentage)
	<ul style="list-style-type: none"> Direct Project Beneficiaries, of which females (500,000)

Components

14. **Component 1: Multi-state Cooperation in Transboundary DRB Management (total: US\$2.95 million, of which US\$3.49 million disbursed).** The component focused on strengthening the knowledge base and on capacity building for transboundary river basin management and IWRM. It included the development of the SAP, the development of hydraulic and hydrological models for the DRB, and the preparation of specific studies on water resources and pollution. For institutional development, the project supported key agencies for IWRM to prepare projects and policies for the management of the DRB and facilitated the participation in GEF-IW: Learn activities. For the coordination and implementation of all transboundary activities of the project, the DTF was established as a steering committee. A budget allocation from component 2 was used to finance the slightly higher spending than originally envisaged for the activities under component 1.

15. **Component 2: Pilot investments for Integrated DRB Management including Flood and Drought Management and Climate Change Resilience (total: US\$5.29 million, of which US\$4.70 million disbursed).** The component strengthened the capacity for climate resilience at the national level through supporting the HMSs with new equipment and the development of protocols for the exchange of data among the countries, a substantial input also for the new plans and models under Component 1 and for further enhancing transboundary cooperation. At the local level, the component financed the design and the implementation of pilot investments to reduce negative climate change impacts, including improved flood protection measures and improved ground water monitoring. Through the small grant program and the public awareness campaigns, the project created local pilot experiences for IWRM and climate change

¹ The PAD defined as key outcomes ‘improved mechanisms’ and ‘improved capacities’ to plan and manage the transboundary DRB. Nevertheless, based on the PDO phrasing and based on OPCS guidance, the Implementation Completion and Results Report (ICR) considers as key outcomes of the project ‘to plan’ and ‘to manage’ the transboundary DRB as indicated in the Theory of Change. Therefore, the PDO indicators were mapped accordingly. The ICR provides evidence to demonstrate the achievement of the indicators and how they contribute to achieving the key outcomes. The two additional indicators at the PDO level provide evidence on how the project achieved its key outcomes.



adaptation and raised the awareness for management and protection of the transboundary DRB among local communities.

16. **Component 3: Project Management, Monitoring & Evaluation and Auditing (Total: US\$0.50 million, of which US\$0.43 million disbursed).** This component included overall project management, monitoring and evaluation (M&E), and auditing. It financed the expenditures of the overall Project Management Team (PMT) and the national Project Implementation Teams (PITs), as well as technical consultants to support and supervise project implementation.

B. SIGNIFICANT CHANGES DURING IMPLEMENTATION (IF APPLICABLE)

Revised PDOs and Outcome Targets

17. **The project had one restructuring in June 2020 that involved** (a) changes to the PDO indicators and intermediate indicators and (b) the extension of the project closing date by six months. The PDO was not changed, but changes to one PDO-level indicator and the target value of one intermediate results indicator in the Results Framework were made to reflect the implementation delays.

Table 2. Changes Made to the Results Framework

Original Indicator	Indicator after Restructuring
PDO-level indicator: Hydrological real-time model (including climate change impacts) jointly endorsed and operational	Hydrological and hydraulic model in real time including optimization of reservoir operations developed and operational
Intermediate results indicator: Number of replicable demonstration-scale activities completed	The target has been reduced from 8 to 6 pilot investments.

Revised PDO Indicators

18. One PDO-level indicator was adjusted. Due to the delays in project implementation, the remaining time and resources were not sufficient to develop the climate change module to integrate the assessment of climate change impacts on the water cycle into the model. This was dropped.

Revised Components

19. Under Component 1, Multi-state Cooperation in Transboundary DRB Management, the scope of the modelling activity was reduced. The modelling of the climate change impacts was dropped. The developed hydrological and hydraulic model can eventually be extended with a climate change module by the countries’ water agencies at a later stage. Under Component 2, Pilot investments for Integrated DRB Management including Flood and Drought Management and Climate Change Resilience, the target value of replicable demonstration-scale activities has been reduced from 8 to 6.

Other Changes

20. **Time extension.** The project closing date was extended from October 30, 2020, to April 20, 2021 (a total of 6 months), to allow a quality completion of the preparation of DRB water resources and basin



study and hydrological and hydraulic model under component 1 and the finalization of remaining activities of the small grants program under component 2.

Rationale for Changes and Their Implication on the Original Theory of Change

21. From project approval in May 2016, one year had passed until effectiveness was achieved in May 2017, due to delays in the countries meeting all effectiveness criteria. For many of the implementing agencies, it was the first World Bank project. Further the coordination among all three countries, for example, the coming to agreement on the terms of references (TOR) for the transboundary activities, took longer than anticipated. This led to significant delays in the procurement and implementation of key activities and put at risk the achievement of the PDO. The Governments of BiH, MNE, and SRB and the World Bank therefore decided to restructure and extend the project.

22. For the integration of an assessment of climate change impacts into the new hydrological and hydraulic model, additional time and resources were needed. Due to the lack of these, the module had to be dropped. Nevertheless, this had no impact on the project's other activities to incorporate climate change adaptation in the management of the DRB and achieve this part of the PDO. Other activities to strengthen climate change adaptation were, for example, the integration of climate change in the SAP, the improvement of technical and institutional capacities for hydrometeorological monitoring, or the pilot investment and small grants that were directed at climate change adaptation. Further, also due to the delay, the target value for the number of replicable demonstration-scale activities had to be reduced from 8 to 6. These changes had no impact on the underlying Theory of Change.

II. OUTCOME

A. RELEVANCE OF PDOs

23. The PDO was relevant at Board approval in May 2016 and continued to be relevant at project closing in April 2021. The PDO was aligned with the Country Partnership Frameworks (CPFs) (FY2016–FY2020) of each country,² as discussed below. New CPFs are currently being developed in all countries, with a delay due to COVID-19. The updated Strategic Country Diagnostics (SCDs) that have recently been finalized in BiH, SRB and MNE clearly indicate that the objectives of the project are still highly relevant in all three countries. The project is also aligned to national policies in all three countries.

24. **Bosnia and Herzegovina.** The project's objectives are aligned with the BiH CPF (FY2016–2020). From the three focus areas for World Bank Group support, the project is part of the third area 'building resilience to natural shocks' with its specific objectives of preventing degradation of natural resources and building resilience to floods. It contributed to expected CPF outcomes: (a) people in flood-affected/prone areas benefiting from goods received and infrastructure rehabilitated with the projects' support and (b) strengthened capacity in water resources management, including flood management, forecasting, and warning in Drina and Sava River Basins. Also, the World Bank's update of the SCD in 2020³ identified the

² The World Bank Group's CPF for Bosnia and Herzegovina for FY16–FY20 (Report Number 99616-BA), for Montenegro for FY2016–FY2020 (Report Number 105039-ME), and for Serbia for FY2016–FY2020 (Report Number 94687-YF). There is no more recent CPF available.

³ The World Bank Group's Systematic Country Diagnostic Update for Bosnia and Herzegovina 2020 (Report Number 148573-BA).



management of natural resources as one of the four main reform areas to achieve higher, sustainable, and equitable growth. Building resilience and helping BiH cope with adverse natural events is priority within this area. The project is also in line with the Government's Strategic Framework for BiH (2015), and with the most recent short-term national development plan 'Economic Reform Program of BiH 2020–2022' that prioritizes sustainable and integrated river basin management and capacity development of responsible ministries under its sub-objective 'Improving the competitiveness of agriculture, forestry and water management.' Further, it contributes to objectives of several national strategies and plans, such as the 'Water Management Strategy for the Federation of BiH 2010–2022.'⁴

25. **Montenegro.** The 2016 SCD⁵ identified 11 priorities for achieving the sustainable development of MNE, among others, safeguarding against environmental risks and protecting natural resources. Under the CPF (FY2016–FY2021), specifically Focus Area 2 'Expand Access to Economic Opportunities and Jobs' defines the objective of enhanced environmental sustainability. The CPF identifies the country's growing risk to natural disaster as a result of climate change and recognizes the project's contribution to build resilience. River basin management, including strengthening the transboundary management of the DRB and building resilience to climate change and natural disaster, all important aspects of the West Balkans Drina River Basin Management (WBDRBM), are listed as key priorities in the recently endorsed SCD Update, proofing the high relevance of the project and will also be reflected in the new CPF. The project also contributes to MNE's Water Management Strategy developed in 2017.⁶

26. **Serbia.** The project is in line with the SRB CPF 2016–2020 which seeks to assist the country with meeting its obligations as an EU candidate country. The CPF emphasizes that "Responding to climate change and disaster risks will be a cross-cutting theme across the two focus areas, given the high risks that natural disasters pose to economic development and the impact of climate change on the poor," which is in line with project objectives. The World Bank's update of the SCD in 2020⁷ highlights that SRB faces major environmental challenges and climate-related risks and calls for a stronger agenda to improve the country's resilience to and mitigation of climate change. The project is also fully in line with national development policies such as the recent law on climate change⁸ and contributes to the objectives of the national 'Water Management Strategy' on the territory of Serbia for 2016–2034.⁹

27. **Alignment with EU Water and Environmental Directive.** All three countries strive to further align their water resources management to the EU legislation, including the Water Framework Directive and the Floods Directive. These call for the development of RBMPs and Flood Risk Management Plans considering the principles of IWRM and for stronger transboundary cooperation. This is also supported by the ISRBC and ICPDR. While the project did not foresee providing any direct support in the development of these plans, it strengthened key agencies to develop these plans and build the needed capacities for further accession to the EU legislation. This includes technical capabilities for assessing and planning water

⁴ <https://fmpvs.gov.ba/en/water-strategy/>.

⁵ The World Bank Group's Systematic Country Diagnostic for Montenegro in 2016 (Report Number 105019-ME).

⁶ <https://www.gov.me/dokumenta/c991a55e-cd22-4c46-af58-e3c6cab103a9>.

⁷ The World Bank Group's Systematic Country Diagnostic Update for Serbia in 2020 (Report Number 147543-YF).

⁸ Law on Climate Change published in the Official Gazette No. 26/2021, dated March 23, 2021.

⁹ <http://www.fao.org/faolex/results/details/en/c/LEX-FAOC182399/>.



resources, for example, through the new hydrological model and an improved data and knowledge base through the investments in hydrometeorological stations or the water resources study.

28. **Alignment with objectives of GEF-IW and the climate change agenda of the SCCF.** After the devastating floods in the Drina and Sava River (2010 and 2014), authorities of all three countries acknowledged that the country-level ad hoc reconstruction efforts will not provide effective long-term flood protection to the basin’s people and economy. A more integrated and transboundary management of the shared water resources and of flood and drought risks across sectors and countries is needed. This is in line with the strategic goal of GEF- IW that called for the promotion of collective management for transboundary water systems during its 5th replenishment cycle in 2013 and again for the 6th (2016) and 7th (2018) cycles. The project strongly contributed to GEF-IW’s prioritized areas, as for example, capacity building and institutional support and the development of disaster early warning systems. The project also helped deal with climate change-related disaster, notably floods and droughts, and thus contributes to meet short- and long-term objectives of GEF and the SCCF on adaptation to climate change. The Sava and Drina Rivers Corridors Integrated Development Program (SDIP, P168862), a large investment operation with BiH, MNE, and SRB using a Multiphase Programmatic Approach that was approved by the World Bank in August 2020, is further evidence of the continuous high relevance of transboundary cooperation in the water sector in the region.

Assessment of Relevance of PDOs and Rating

29. Based on the alignment of the PDOs to the CPFs and the continuous high relevance of the management of floods and droughts as indicated in the updated SCD as well as the national policies, as indicated in the preceding paragraphs, the relevance of the PDOs is rated High.

B. ACHIEVEMENT OF PDOs (EFFICACY)

30. The PDO of the WBDRBM Project is to improve mechanisms and capacity of the Project Countries to plan and manage the transboundary Drina river basin, incorporating climate change adaptation. The PDO is complex and therefore is split in two parts: (a) improve mechanisms and capacity to plan the transboundary DRB and (b) improve mechanisms and capacity to manage the transboundary DRB. Climate change adaptation is transversal and will be incorporated both in the planning and in the management of the DRB.

31. **The PDO outcome target indicators were all achieved at the end of the project, after restructuring.** Although the accomplishment of the PDO—given this is a technical assistance project supporting a long-term capacity building and reform process—is difficult to measure in a short time, the achievement of all target indicators demonstrate that the project accomplished its objectives and significantly contributed to improving the transboundary planning and management of the DRB. The full achievement of all PDO indicators was enabled due to the project restructuring in June 2020, which extended project implementation by six months. It also changed one PDO-level indicator and the target value of one intermediate results indicator to reflect realism and ensure quality and timely delivery. The changes did not affect the Theory of Change and the originally expected project outcomes. The key results for achievement of PDO outcomes and their indicators are summarized in table 3 and are divided into pre-restructuring and post-restructuring using the split evaluation method.



32. **Rating pre-restructuring.** Outcome 1 was rated Substantial. As the assessment and integration of climate change impacts in the hydrological model was dropped, this specific indicator was rated as partially achieved. All other indicators were achieved.

Table 3. Original and Revised PDO Outcome Target Values and Achievement at Project Closure

	Pre-restructuring		Post-restructuring (June 2020)		Actual Value Achieved at Completion
	Original Target	Achieved (%)	Revised Target	Achieved (%)	
Outcome 1: Improve mechanisms and capacity to plan the DRB					
Original indicator: Hydrological real time model (including climate change impacts) jointly endorsed and operational	Yes	Partially	n.a.	n.a.	Partially (without including climate change impacts)
Revised indicator: Hydrological and Hydraulic model in real time including optimization of reservoir operations developed and operational	n.a.	n.a.	Yes	Partially	Partially (model not yet in operational use)
SAP jointly prepared and endorsed at ministerial level in all three countries	Yes	Yes	Yes	Yes	Yes
Efficacy rating: Outcome #1	Substantial		Substantial		
Outcome 2: Improve mechanisms and capacity to manage the DRB					
Drina Task Force (DTF) operational	Yes	Yes	Yes	Yes	n.a.
Hydro-meteorological data collected and shared for modelling and forecasting	Yes	Yes	Yes	Yes	
Efficacy rating: Outcome #2	Substantial		Substantial		
Additional PDO indicator: Climate Change Adaptation					
30 percent of SAP activities address climate change issues related to droughts and floods	30%	100%	30%	100%	100%
Efficacy rating: Outcome #2	Substantial		Substantial		
Additional PDO indicator: Direct Beneficiaries					
Direct project beneficiaries (number), of which female beneficiaries	500,000	100%	500,000	100%	100%
	50%	100%	50%	100%	100%
Overall efficacy rating	Substantial		Substantial		

Assessment of Achievement of Each Objective/Outcome

33. **Outcome 1: Improve mechanisms and capacity to plan the DRB.** This PDO outcome was achieved mainly through the following two results: (a) Hydrological and Hydraulic model in real time including optimization of reservoir operations developed and operational and (b) the SAP jointly prepared and endorsed at ministerial level in all three countries.



34. **Hydrological and hydraulic model in real time including optimization of reservoir operations was developed and is operational at the end of the project.** The model is a new and modern mechanism strengthening transboundary planning of the DRB. It is run with data from all three countries. Close transboundary coordination and joint decision-making were needed to develop the model and define the protocols for data exchange. The ongoing collaboration for further improving and calibrating the model will continue to build trust and promote transboundary cooperation. The model was delivered to all the beneficiary institutions in each country. Training in the use of the model was provided, but due to COVID-19, capacity building and exchange were not as comprehensive as anticipated. This also affected the fast adoption of the model by the beneficiaries. While the model is not yet in operational use, beneficiary institutions in all countries, the Institute of Hydrometeorology and Seismology in MNE, the Federal Hydrometeorological Institute and the Republic Hydrometeorological Institute in BiH, and the HMS in SRB, confirmed their plans to fully integrate the model in operational WRM and in their forecasting and early warning systems. The model is already used for planning new investments. The SDIP (P168862), for example, uses the model as a key instrument to improve the planning of its investments and will also support the further development of the model. The Sava River Basin District Agency in Sarajevo highlighted how the energy sector will benefit from the transboundary model by using it for managing the existing hydropower facilities and their reservoirs and for planning of new power plants as they depend on the water resources of the entire DRB system.

35. **The SAP was completed in July 2020 and formal endorsement by all three countries was achieved in May 2021.** The SAP was developed and formally endorsed as an important mechanism to plan the transboundary DRB. The collaborative preparation and formal signing of the SAP by all countries is a major milestone for establishing transboundary cooperation and an important achievement of the project. In the context of the Drina River, the SAP is closely linked to an Integrated Water Resource Management (IWRM) Plan for the entire basin. It is developed for a 10-year planning time span with targets set for that period. It identifies priority water management concerns and a prioritized list of short-, medium-, and long-term measures for integrated, sustainable management of the DRB and to adapt to climate change. Within the SAP, three project concepts are prepared, including (a) the establishment of an integrated environmental monitoring system at the basin level; (b) a project to promote the coordinated management of groundwater resources; and (c) a project for the conservation of natural values, focusing on aquatic ecosystems. The SAP will guide future investments and will help leverage additional donor support. Phase II of the SDIP, for example, will finance investments identified in the SAP.

36. **Water Resources and Basin Study and Study on the Pollution of the DRB, further results in improving the planning of the DRB.** The overall objective of these assessments was to enhance the knowledge base of the DRB to better inform regional strategies for water resources management, adaptation to climate change, nature conservation, and energy and hydropower development. The Basin Study developed in close collaboration by all three countries included four background studies (Regional Hydrological Study, Ecological/Environmental/Maintenance/Duty Flow Study, Sediment and Riverbank Study, and the Surface and Groundwater Temperature Study), a database of torrential flows, and a geographic information system database. The pollution study sets the base for cross-border cooperation and cooperation among local communities on implementing solid waste management activities to solve the floating waste problem observed in the entire DRB.



37. **Despite not fully achieving one outcome indicator, outcome 1 is rated substantial at the end of the Project.** The hydrological and hydraulic model is not yet in operational use due to COVID related delays, but the likelihood of the model being operational and informing decision making is high given that the beneficiary institutions in all countries have been trained in the use of the model and confirmed their plans to fully integrate the model in WRM and early warning systems. Further, the model has already informed new investments. The second outcome indicator, SAP endorsed and prepared, and the intermediate results indicators were fully achieved. The signing of the large transboundary investment project SDIP by all three countries is further proof, in addition to the indicators of outcome 1, that mechanisms and capacity to plan the DRB have significantly improved. A shared project of this magnitude to manage the DRB and improve resilience to climate change across borders would not have been possible without the successful implementation of the WBDRBM Project.

38. **The additional PDO indicator regarding the climate change adaptation was also achieved.** Climate change is identified as a priority water management concern in the diagnostics part of the SAP and climate change adaptation is a main pillar of the proposed action program. The jointly prepared and endorsed SAP defines a climate change adaptation objective, as well as specific goals, for example, the preparation of basin management initiatives for adaptation or the establishment of specific monitoring systems for climate change. The SAP will guide future investments in the DRB and identified and prioritized interventions to better adapt to climate change. The indicator was achieved, as the SAP incorporated 30 percent climate change adaptation measures. Despite not including climate change in the hydrological model under Outcome 1, the project supported the adaptation to climate change in the DRB through many other activities. These are, for example, the strengthening of the HMSs, as well as selected pilot project and small grants.

39. **Outcome 2: Improve mechanisms and capacity to manage the DRB.** This project outcome was achieved through the following results: the establishment of the DTF and the strengthening of the HMSs to collect and share data. The pilot projects, small grants, and the public awareness campaign also substantially contributed to improved management of the DRB, also incorporating climate change adaptation.

40. **DTF established and functional.** The DTF was created as a steering committee to coordinate all the transboundary activities of the project. It consisted of seven members in total: two from SRB, two from MNE, and three from BiH. It was responsible, among others, for daily management of regional activities leading toward the preparation of the SAP, the regional studies, the hydrological model, and the development of the protocols to exchange data. The DTF was established particularly for the project and not envisaged to be formally institutionalized for future coordination. It was important for demonstrating the benefits and opportunities of transboundary cooperation and for building trust for closer collaboration in the future. The well-established ISBRC could provide the institutional framework for future transboundary collaboration in the DRB. The Drina is the largest tributary of the Sava River and with BiH and SRB, two countries of the DRB are already full members. Four representatives from the DTF attended the 9th GEF International Water Conference in Morocco to share their experiences and learn from similar experiences in different parts of the world.

41. **Hydrometeorological data collected and shared for modelling and forecasting.** To effectively manage the water resources of the DRB, hydrometeorological data in quantity (types of parameters and



spatial resolution of observations) and quality (accuracy and in real time) are needed. The data are essential for the operational hydrological and hydraulic model, management of hydrological extremes, and planning measures to adapt to climate change. The project purchased and installed new monitoring equipment¹⁰ and supported the collection and exchange of data. New observation stations, allowing real-time measurements and automatic data transfer were placed in strategic areas of the DRB to close observation gaps and modernize or rehabilitate existing infrastructure in strategic locations. The three countries coordinated the identification of the best locations for the new stations. Modern equipment for gauging was purchased to improve the accuracy of the stream flow measurements and additional information technology (IT) equipment, including software, now enables the HMS to better manage and interpret the information. All equipment was purchased and fully functional as planned. Protocols for data compatibility and data exchange among the three countries were developed and signed as targeted. These protocols aim to provide a framework for the exchange and interoperability of data within the DRB. They already ensure easy access and distribution of hydrological and meteorological data necessary for the operation of the integrated hydrological-hydraulic model and for other studies and project designs, leading to better water resources management and investment planning in all three countries.

42. **Both PDO indicators to measure the project's contribution to improve the capacity to manage the DRB (Outcome 2) as well as the related intermediate results indicators were fully achieved at the end of the project.** The score for Outcome 2 was Substantial at the end of the project.

43. **The additional PDO indicator regarding the project's direct beneficiaries (500,000, of which 50 percent female) was fully achieved** through the pilot projects, the small grants, and the public awareness campaigns. The results of these activities of Component 2 supported local communities to better manage hydrological risks, adapt to climate change and extreme events, use the natural resources in a sustainable manner, and protect the environment, as well as raised the awareness for managing and protecting the transboundary DRB. Thus, the project improved the capacities to better manage the DRB at local level in all three countries.

44. **Pilot projects.** These included final design studies, as well as concrete works to reduce the negative impact of climate change in all three riparian countries. In MNE, the project financed the design of a flood protection and irrigation project to adapt to climate change in the Lim River Basin, a tributary of the Drina. This project will be financed through the SDIP and the new integral approach to adapt to climate change will eventually be replicated in other sub-basins of the DRB or in the region. In SRB, the project upgraded existing flood protection in Šarampov including also mobile parts to be installed in the case of flooding, an innovative technology not used so far in the DRB. In BiH/Republika Srpska (RS), an additional pilot project restored the degraded riverbank of two tributaries to Drina in urban areas of Novo Gorazde. Further, the project financed the assessment and upgrade of detailed design of an existing wastewater treatment facility in the City of Bijeljina (BiH/RS) and the feasibility study and preliminary design of the wastewater collector and treatment plant for Bosansko-Podrinjski Canton (BiH/Federation BiH). In total, five of the envisaged six pilot projects were implemented. The intermediate results indicator was therefore not fully achieved. The borrower's ICR provides a more detailed description of these pilot

¹⁰ Including 14 automatic meteorological stations, 38 automatic precipitation stations, 1 agrometeorological station, 30 automatic hydrological stations, and equipment for gauging (flow meter, acoustic doppler profiler, and mechanical cableways). Full details on the purchased equipment can be found in the borrower's ICR.



projects.

45. **Small grants.** A total of 49 small grants were implemented in the three countries, more than double the envisaged 20. The grants supported community and local initiatives in a variety of fields, ranging from conservation projects such as improvement of fish stocks, ecotourism, and bird watching, to projects rehabilitating rainwater tanks or preventing pollution of water resources through inadequate livestock farming. Thus, the small grants enabled community organizations to implement and pilot concrete measures to manage and protect the DRB and adapt to climate change. The basis for the effective implementation of the small grant program was an implementation manual, agreed between the three countries with specific goals and eligibility criteria. After a successful first call for proposals with 11 small projects, MNE even opted to use project savings to open a second call, selecting 11 further initiatives. Figure 3 provides some impression on the small grants. More information is provided in annex 4, Efficiency Analysis, and the full list of the small grants can be found in annex 7.

Figure 3. Examples of Small Grants Program (source: Borrower's ICR)



46. **Public awareness campaigns.** The objectives of these campaigns were to raise general public awareness on the need to protect and manage the abundant natural resources in the DRB and also show the importance of transboundary cooperation for achieving this. In BiH, the public awareness campaign was directed at six municipalities and had a total of 4,100 participants. It included leaflets and videos, as well as five workshops and two round tables. In SRB, the public awareness campaign was directed at 26 municipalities with over 600 villages. A video was broadcasted on three television stations and a radio



jingle was used by local radio stations. In MNE, a video clip was produced.¹¹ Due to COVID-19, from spring 2020 until the end of the project, public activities bringing people together, for example, for workshops, were not possible anymore.

Justification of Overall Efficacy Rating

47. **The overall efficacy is rated Substantial both before and after restructuring** as the project achieved its PDO to improve mechanisms and capacity of the Project Countries to plan and manage the transboundary Drina river basin, incorporating climate change adaptation. The project successfully established communication and coordination among the riparian countries, a major breakthrough given the recent history of the region.

C. EFFICIENCY

Assessment of Efficiency and Rating

48. **Economic analysis in this ICR follows similar structure and methodology as in the appraisal stage based on the latest available information.** As the project is mainly a technical assistance and not an investment project, the economic analysis is based on qualitative assessment rather than a numerical cost-benefit approach. The cumulative results of economic analysis for all components show that the project was mostly efficient, with the overall rate Substantial.

49. **As expected at the appraisal stage, the most important benefits for the entire DRB region from this project are those that occur once the multi-state cooperation in DRB management will be established and be functional.** The project Component 1 has enhanced dialogue and understanding among and within riparian countries, as expected, a key component that has contributed to a shared vision of DRB development. Although with some delays in implementation, the project has already promoted transparent and accountable decision-making and increased the DRB riparian countries' capacities to jointly plan and select investments more efficiently and in accordance with IWRM principles. Such an increased cooperation among the countries also facilitated open discussions about options and trade-offs with respect to water resources development. The tangible results are, however, yet to come as any development of future major projects takes time.

50. **Benefits associated with this component, are difficult to quantify; however, those benefits can be summarized as follows:** (a) benefits to the river (regional ecosystem improvement and protection), (b) benefits from the river (improved regional cooperation and coordination in hydropower generation and agricultural production, nature-based [eco]tourism and recreation, fishery, and sediment exploitation), and (c) benefits beyond the river (easing regional tensions over conflicting interests and competing priorities for water resources management, with opportunities for construction of shared infrastructure in a longer term, building resilience to flood and drought events).

51. **One of the major economic and financial benefits derived from the longer-term project outcomes will be the reduction of damages caused by future flood or drought hazards as all riparian**

¹¹ <https://www.youtube.com/watch?v=VoW6ywuArTE>.



countries are better prepared to manage these risks and mitigate the effects. Flood events have in the past inflicted damage and losses amounting to about 5 percent of the countries' GDP, as recorded in the recent floods in 2014 and 2017. Repeated flooding caused acute damage in agriculture production, industry, tourism, and existing housing and infrastructure damage and further negatively affected the willingness to invest and expand economic activity along the river. The new hydrological and hydraulic model together with the new observation data will benefit social and economic development as it will help prepare for drought and flood situations, as well as allow to better plan for future developments. Further, the model will be used to set up a framework of harmonization and synchronization of the existing HPPs, which is particularly important in extreme hydrological situations such as during floods. The water agencies of the riparian countries are direct beneficiaries from this project considering that their capacities are strengthened in terms of equipment and training.

52. **Important benefits also resulted from the strengthening of the national.** The project strengthened the HMS with new equipment and also through technical assistance, for example, with the development of the protocols to exchange data. Stronger HMSs will provide better services with multiple benefits for the region's population and economy. In the short and medium run, these benefits will materialize, for example, in the optimization of operational costs of HPPs. In the long run, they will materialize in reduction of damage and losses related to hydrometeorological hazards and increase of benefits in productive sectors (hydropower, agriculture, and tourism). The applied conservative estimates indicate that in the long run, a relatively high benefit-cost ratio of this investment, in terms of reduced economic losses, is likely to be expected in all riparian countries. The fiscal impact of the project in HMS strengthening is relatively low and does not add much fiscal burden, considering that the annual regular budgets of national HMSs are able to provide sufficient funds to cover additional annual operational and maintenance costs that result from this investment. However, to ensure project sustainability and further improvement in the future, adding budget resources for the maintenance and further development of HMSs is recommended.

53. **Key benefits that were expected at the time of implementation and are expected in the longer run are related to improved water quality and supply reliability and to better informed local planning and decision-making related to water resources management based on the important studies implemented by the project.** The delayed implementation of the project, as most of it was completed at a later stage and after extension, meant that expected effects during implementation were not recorded as planned. However, there is good basis to believe that these results will materialize after project completion as the preconditions have already been met. The study for water quality, waste, and solid waste is completed and positive effects are expected on improved water quality and supply reliability. The Water Resources and Basin Study will result in better-informed local planning and decision-making.

54. **The project produced a positive short-term economic impact through the small grants program and pilot investments.** Although it is difficult to quantify the economic and financial effect of 49 grants that the project implemented to better manage the DRB at the local level in all three countries, it is reasonable to assume an immediate positive economic outcome as they improve the immediate potential in local tourism, fishing and sport fishing, agriculture, biodiversity, and flood protection, among others. Similarly, five pilot investments either had an immediate impact or paved the foundation for future investments with positive economic outcomes.



55. **The six-month delay in project implementation completion did not have any impact on overall efficiency.** The project was restructured in June 2020 and was extended once by six months, which is not much considering the complexity of the transboundary project with many implementing agencies and considering the onset of the COVID-19 pandemic in spring 2020. Due to the reform nature of the project and expected long-term economic effects to be driven by it, the impact in project efficiency of the implementation delay is negligible. There were no cost overruns that could affect efficiency and hence project implementation was Satisfactory.

D. JUSTIFICATION OF OVERALL OUTCOME RATING

56. Relevance of the PDOs is rated ‘High’, efficacy is rated ‘Substantial’ pre-restructuring and ‘Substantial’ post-restructuring, and efficiency is rated ‘Substantial’. Even though the project substantially achieved its objectives, the rating is proposed to be ‘Moderately Satisfactory’ since one of the outcome indicators was only partially achieved. As discussed above, the hydrological and hydraulic model is not yet in operational use. Nevertheless, all relevant stakeholders were trained in the model and also confirmed their plans to use the model for their early warning systems, for WRM and for the planning of new investments.¹²

E. OTHER OUTCOMES AND IMPACTS (IF ANY)

Gender

57. When the project was approved, the World Bank did not require gender tag assessment. The project was not designed to close gender gaps in the target area. However, improved transboundary management of the DRB will benefit both women and men; 50 percent of the targeted beneficiaries of the project were female.

Institutional Strengthening

58. The project’s focus was on capacity building and institutional strengthening. This is also reflected in the PDO. Institutions at different government levels benefited from the project: local organization implementing small grants, municipalities preparing pilot studies, subnational and national HMSs from the new monitoring equipment and protocols for data exchange, national and sub-national water agencies from the regional studies and the new model, national governments from the established coordination mechanisms as the DTF, and the reestablished trust among the riparian countries.

Mobilizing Private Sector Financing

59. Not applicable.

¹² Because the pre- and post-restructuring ratings are the same, the split rating analysis and evaluation used for restructured projects did arrive at the same results.



Poverty Reduction and Shared Prosperity

60. Direct contributions of the project toward achieving the World Bank's twin goals were not anticipated to be achieved within the project's life span. In the medium and long term, the improved capacities to manage the transboundary DRB will support social and economic development in the region without harming the environment, help better adjust to climate change, and build resilience against floods and droughts.

Other Unintended Outcomes and Impacts

61. Not applicable.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

62. **Soundness of background analysis.** The project was built on several ongoing initiatives and studies that identified the need for enhanced transboundary cooperation to manage the DRB, including the transboundary RBMP and the Flood Risk Management Plan developed with the support of the ICPDR and ISRBC, studies by the EU Western Balkan Investment Facility, and the TDA. The expertise and prior experiences of GEF and SCCF were considered during project preparation, particularly the experience with the Neretva and Trebisnjica Management Project in BiH and Croatia 2009–2015 (P084608). A detailed Procurement Plan, including draft TOR for main activities, was readily available at project start.

63. **Adequacy of risk assessment and mitigation measures.** The overall risk rating of the complex project involving three countries and several ministries and water agencies at the national and subnational level was Moderate. The risk concerning the institutional capacity for implementation and sustainability was rated Substantial. The mitigation measures, including a clear definition of the implementation arrangements, roles, and responsibilities and a detailed description of the activities, were identified and partially put into action during preparation. Also, for the moderate fiduciary and procurement risks, the project was well prepared, putting in place clear arrangements, independent controls, and experienced implementation units in all countries.

64. **Limited ownership.** During preparation, the project was not able to fully secure strong commitment and ownership in all countries. This is of particular importance in grant-financed operations focusing on technical assistance and capacity building. This led to the delays for reaching effectiveness and also during implementation. In SRB, the Grant Agreement did not become effective until August 2017, more than one year after Board approval. As the Procurement Plan and the TOR for key activities had not been developed with active involvement in all countries during project preparation, additional time was needed to agree on the shared activities during implementation.

B. KEY FACTORS DURING IMPLEMENTATION

(a) Factors Subject to the Control of Government and Implementing Agencies

65. **Frequent changes in staffing at the political and technical level.** The smooth coordination of the



project's activities is challenging for transboundary projects and requires a strong commitment by all countries throughout implementation. Changes in all countries at the political level and technical level affected the fluent communication and led to delays. While the more stable staffing of the PMT and in the PIT of BiH and MNE contributed to the needed continuity, the frequent changes in the implementation unit in SRB caused delays in project implementation. In SRB, the Grant Agreement was signed by the Ministry of Environmental Protection, but the PIT was delegated to the existing Project Implementing Unit (PIU) of the Serbia Flood Emergency Recovery Project (P152018) under the Directorate of Water.

66. **Engagement with the International Sava River Commission.** The DTF, with representatives from all three countries, was established in particular for the coordination of the project and fully met this purpose. Nevertheless, a stronger involvement of all parties in this coordination mechanism, also on aspects beyond the project and a more proactive communication of the PMT and DTF with the existing and well-established ISRBC, could have resulted in synergies and in the creation of further opportunities for future projects and transboundary cooperation.

(b) Factors Subject to the Control of the World Bank Control

67. **Adequacy of supervision secured by country offices.** Substantial support and guidance to the PMT and PITs were provided throughout the project through fully engaged country offices. This secured a continuous support in supervision despite the frequent changes in task team leadership. The close collaboration with the country office, highly appreciated by all stakeholders, was essential for achieving the described results, after the delays the project suffered in its first years of implementation.

(c) Factors Outside the Control of Government and/or Implementing Entities

68. **COVID-19.** The project was still in implementation when the pandemic hit the region. While all stakeholders, including the World Bank, quickly adapted to working remotely, the restrictions on travelling and face-to-face meeting did have its impact on the activities that were not finalized yet. Thus, COVID-19 affected the quality of completion of the project. The pandemic disrupted the final analysis, public consultations, and dissemination of important studies, such as the water resources study and the hydrological model. These activities still took place but not as comprehensive as originally planned. Further, government officials were not able to participate in the IW:LEARN activities and the international conference that was planned in Washington, DC.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. QUALITY OF MONITORING AND EVALUATION (M&E)

M&E Design

69. At the time of project preparation, the project prepared a set of PDO indicators and intermediate results indicators for each component. The developed Results Framework was well structured and effectively monitored the delivery of the envisaged activities and its results.

70. Capturing the results of projects focused on technical assistance and assessing their contributions



toward building capacity are challenging. To better evaluate the impact of the project on institutional capacities for transboundary cooperation, the M&E system could have included additional indicators requiring surveys or capacity assessments during project preparation and implementation.

M&E Implementation

71. The PMT, with the support of each PIT, was responsible for implementing M&E. Indicators were monitored monthly and reported to the World Bank ahead of each supervision mission. They were also a central part of the client's progress reports and the borrower's ICR.

M&E Utilization

72. The indicators were used by the PMT and the World Bank to monitor implementation progress. The Results Framework clearly indicated the limited progress in the first years of project implementation, signaling that management actions were needed to accelerate implementation.

Justification of Overall Rating of Quality of M&E

73. The M&E system is rated 'Substantial' as it effectively monitored the implementation of the project.

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

74. **Environmental safeguards.** The project was categorized as an environmental category B project in accordance with OP 4.01 Environmental Assessment. No major adverse environmental impacts were anticipated under the project. Further, the World Bank Policies on Natural Habitats (OP/BP 4.4), Forests (OP/BP 4.36), and Physical Cultural Resources (OP/BP 4.11) were triggered as the DRB includes several natural parks and nature reserves, forested areas, and areas of cultural interest. The client prepared an Environmental and Social Management Framework (ESMF) that set forth the process to identify, mitigate, manage, and monitor environmental issues, linked to constructions and other civil works, as well as underlying social issues. The project activities were implemented in line with the World Bank environmental safeguards following the requirements of the Project Operational Manual and using tools provided in the ESMF.

75. As the PIU failed to hire an environmental specialist and establish regular monitoring and reporting systems at the beginning of the project and hence submitted incomplete TORs without the relevant environmental sections, in June 2018, the World Bank downgraded the overall safeguards rating and the ratings of the triggered environmental safeguards to Moderately Unsatisfactory. After the contracting of an environmental specialist in January 2019 and the establishment of the monitoring and reporting system, the ratings were improved to Moderately Satisfactory.

76. The project also triggered OP/BP 7.50 for Projects on International Waterways, as the Drina is an international waterway that joins the Sava, and by extension, the Danube Rivers. At project start, all five Sava countries were notified on the project through the ISRBC, according to the established procedure. No objections or comments were received.



77. **Social safeguards.** The World Bank Operational Policy on Involuntary Resettlement (OP 4.12) was triggered due to potential land impacts associated with pilot investments of Component 2. Three separate Resettlement Policy Frameworks (RPFs) were prepared and disclosed for BiH, SRB, and MNE. Most of the projects were on public land and only for one sub-project, the upgrade of existing flood protection from Lim River in Šarampov in the Municipality of Prijepolje (Serbia), temporary land acquisition was needed. The compensation to the owner for the purchase of access rights was carried out in accordance with the project RPF, and land will be restored to its original state before it is handed back to the owner or compensation in lieu of labor and other costs to restore the land back will be paid to the owner in addition to the compensation amount. The rating of OP/BP 4.12 has been satisfactory throughout project implementation.

78. **Fiduciary.** The financial management arrangements—involving the overall PMT that was established under the Bosnian Ministry of Foreign Trade and Economic Relations (MOFTER) and also acted as the PIT for the Federation of Bosnia and Herzegovina (FBiH) and the PITs established in the Ministry of Agriculture, Forestry and Water Management of Republika Srpska, in the Ministry of Agriculture and Environmental Protection of Serbia, and in the Ministry of Finance of MNE—were thoroughly assessed during project preparation and found acceptable by the World Bank. All units were well staffed and managed. Throughout implementation, the project prepared and submitted financial reports within due dates and in an acceptable quality and format. The annually audited financial statements and the audit reports were provided to the World Bank. Financial management was rated Satisfactory in the last Implementation Status and Results Report (ISR).

79. **Procurement.** All Project Implementation Units (PMT and PITs) benefited from qualified procurement specialists with experience in other World Bank projects. Procurement was realized in compliance with agreed provisions of the Grant Agreement and the Procurement Guidelines. The delays in procurement were caused by delays in defining and agreeing on the technical specifications and TOR among the project partners but not due to shortcomings in complying with the established procurement processes. All procurement files were well organized and procurement notices as well as notifications of contract awards were widely published. The procurement performance of the project was rated Satisfactory in the last ISR.

C. BANK PERFORMANCE

Quality at Entry

80. The project is the result of continuous policy dialogue and analytics in the region. It was based on sound technical assessments, similar projects in the region, and ongoing World Bank engagement in the water sector with all three countries. In several missions and many technical meetings during preparation, the World Bank together with the clients, shaped the overall strategy of the project and defined the activities to be financed during implementation. A more active involvement of the technical counterparts in MNE and in particular in SRB during preparation could have led to a stronger commitment and ownership at project start and would have mitigated some of the delays suffered in the first years of implementation.



81. The assessment of main risks was adequate and the complex implementation arrangements needed for the transboundary operation proved to be suitable. The PMT and PIT were well prepared, setting the base for satisfactory environmental, social, and fiduciary compliance during implementation.

Quality of Supervision

82. The World Bank conducted regular supervision missions. Despite changes in task team leadership and challenges related to COVID-19, the project team provided close support throughout implementation. In particular, owing to the strong engagement of all three country offices and their continuous support, the project was able to improve the overall rating from Moderately Unsatisfactory to Satisfactory in the last year of implementation and after restructuring.

Justification of Overall Rating of Bank Performance

83. Overall World Bank performance is rated Satisfactory. The strong engagement and performance of the country offices helped the client successfully implement the project.

D. RISK TO DEVELOPMENT OUTCOME

84. **Risks to the use of the project's results.** The project developed important studies, instruments, and mechanisms for better planning and management of the transboundary DRB. This includes the SAP, the hydrological models, the new equipment for hydrometeorological monitoring, and the protocols for data exchange. The sustainable use of these results depends on (a) the institutional capacity of the national stakeholder and (b) the ongoing commitment of each country to the initiated transboundary cooperation.

85. **Favorable conditions for further improving transboundary cooperation and strengthening of institutional capacities substantially mitigate this risk.** The establishment of effective transboundary river basin management is a long process and requires ongoing technical support and commitment by all countries. The project provided important inputs and substantially contributed to this process. Ongoing World Bank support, as well as other factors, create favorable conditions to further strengthen the transboundary cooperation and the relevant institutions in the coming years and establish a truly transboundary river basin management:

- (a) The new SDIP (P168862) that was approved by the Board in August 2020 will closely work with all riparian countries and the ISRBC and will further strengthen the institutional capacities and transboundary cooperation in addition to important investments in flood protection. In fact, the SDIP will implement projects that were designed within the WBDRBM.
- (b) All three countries are further aligning their policies to the EU. This includes water resources management and flood risk management. For the implementation of the EU's Water Framework Directive and Floods Directive, all countries must further strengthen their institutions and also enable the transboundary management of water resources and flood risks.



- (c) The well-established ISRBC also provides the needed institutional and legal framework for the transboundary management of the Drina River, Sava's most important affluent. BiH and SRB are full members of the ISRBC and MNE signed a Memorandum of Understanding on cooperation with the ISRBC.

V. LESSONS AND RECOMMENDATIONS

86. **The World Bank is well positioned to promote transboundary river basin management, and that was proved by this project.** The need to closely cooperate across borders to manage shared resources and risks is undisputed. The World Bank, as a multilateral organization that is maintaining close relations with client countries through many bilateral operations, is seen as an independent agent and is therefore well positioned to moderate among countries, build trust, and promote transboundary communication and cooperation. The project proved the World Bank's convening power in this regard. The World Bank, together with GEF-IW has already acquired substantial experience in working on international rivers. GEF's approach to initiate transboundary cooperation with a shared diagnostic (TDA), followed by cross-border dialogue and the collaborative development of a shared vision and action plan (SAP) for the transboundary river basin, proved to be effective in Europe also. These experiences should be further analyzed, systematized, and disseminated to seek further opportunities for these transboundary projects.

87. **Projects to establish transboundary cooperation and to strengthen institutional capacities need to be part of long-term development strategies.** Building trust among institutions of different riparian countries, establishing mechanisms for close collaboration, strengthening the capacities for this purpose, and formalizing the cooperation is a lengthy process requiring continuous external support over many years, if not decades. This cannot be fully achieved within a single project despite the progress made. While the WBDRBM made important contributions for the transboundary management of the Drina River Basin, its results will only be sustainable if further support to each country is provided. In the case of this Project, this will be provided through the new Sava and Drina Rivers Corridors Integrated Development Program (SDIP, P168862), and the Sava River Basin Commission.

88. **Monitoring and evaluating projects focusing on developing institutional capacities is challenging and requires additional efforts.** To better assess the results of activities to strengthen capacities or create awareness, a M&E system should include specific capacity assessments and evaluations, for example, based on polls and surveys. This is essential for determining if projects effectively deliver on capacity building and contribute to long-term outcomes.

89. **Transboundary projects entail higher transactions costs and additional supervision requirements.** The project, financed through two different funds with separate grant agreements and accounts in each of the three countries, required substantial managerial and administrative support, despite having an experienced PIU in each country. Elevated transactions costs and close supervision through country offices must be anticipated and resourced. Engaging the local staff at country offices and recognizing their undisputed role for smooth project implementation is a key to success, especially in the complex projects that involve many countries and different stakeholders who need continuous supervision and support. Nevertheless, the challenge to establish transboundary management of water resources and the opportunities that can arise from it for sustainable development, regional integration,



conflict avoidance, and hence for achieving of the World Bank's twin goals justify these investments.



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: To improve mechanisms and capacity of the project countries to plan and manage the Drina River Basin

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Direct project beneficiaries	Number	0.00	500000.00	500,000.00	500,000.00
		15-Jan-2016	31-Oct-2020	30-Apr-2021	30-Apr-2021
Female beneficiaries	Percentage	0.00	50.00		50.00

Comments (achievements against targets):

Achieved 100% at completion. The results contributing to the indicator were the small grant programs, the public awareness campaigns and the pilot projects of component 2B.



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Climate change adaptation: 30 percent of SAP activities address climate change issues related to droughts and floods	Percentage	0.00	30.00	30.00	30.00
		15-Jan-2016	31-Oct-2020	30-Apr-2021	30-Apr-2021

Comments (achievements against targets):

Achieved 100% at completion. Climate change is identified as priority water management concern in the diagnostics part of the SAP and climate change adaptation is a main pillar of the proposed action program. The SAP defines a climate change adaptation objective, as well as specific goals. For example, the preparation of basin management initiatives for adaptation or the establishment of specific monitoring systems for climate change. The indicator was achieved, as the SAP incorporated 30% Climate Change Adaptation measures.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Improved Capacity: Hydro-meteorological data collected and shared for modelling and forecasting	Yes/No	No	Y	Yes	Yes
		15-Jan-2016	31-Oct-2020	30-Apr-2021	30-Apr-2021

Comments (achievements against targets):

To strengthen climate change resilience and further build the capacities of the National Hydrometeorological Services, the Project purchased and installed new monitoring equipment and supported in the collection and exchange of data. All equipment was purchased and fully functional as planned before the



restructuring. Investments were made through three lots. Protocols for data compatibility among three countries **were** developed and signed as targeted. These Protocols aim to provide a framework for the exchange and interoperability of data within the Drina River Basin.

The monitoring equipment included 14 automatic meteorological stations, 38 automatic precipitation stations, 1 agrometeorological station, 30 automatic hydrological stations and equipment for gauging (flow meter, acoustic doppler profiler, mechanical cableways).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Improved Capacity: Drina Task Force (DTF) operational	Yes/No	No 15-Jan-2016	Y 31-Oct-2020	Yes 30-Apr-2021	Yes 30-Apr-2021

Comments (achievements against targets):

The DTF was established particularly for the Project and not envisaged to be formally institutionalized for future coordination, that will continue in the well-established Sava Commission. DTF served its purpose effectively.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Improved Mechanisms: SAP jointly prepared and endorsed at ministerial level in all three countries	Yes/No	No 15-Jan-2016	Y 31-Oct-2020	Yes 30-Apr-2021	Yes 30-Apr-2021

Comments (achievements against targets):



SAP was completed in July 2020 and formal endorsement by all three countries was achieved in May 2021

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Improved Mechanisms: Hydrological and Hydraulic model in real time including optimization of reservoir operations developed and operational	Yes/No	No 15-Jan-2016	Y 31-Oct-2020	Yes 30-Apr-2021	No 30-Apr-2021

Comments (achievements against targets):

The indicator was only partially achieved as the model is not yet in operational use due to COVID related delays. Nevertheless, the likelihood of the model being operational and informing decision making is high given that the beneficiary institutions in all countries have been trained in the use of the model and confirmed their plans to fully integrate the model in WRM and early warning systems. Further, the model has already informed new investments.

A.2 Intermediate Results Indicators

Component: Component 1: Multi-State Cooperation on International Drina River Basin Management

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Hydraulic simulation facility	Yes/No	No	Y	Yes	Yes



extended and includes modern database systems compatible with EU and WMO protocols		15-Jan-2016	31-Oct-2020	30-Apr-2021	30-Apr-2021
<p>Comments (achievements against targets): Simulation facility is operational.</p>					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Hydrological real-time model combined with a climate change impact module and training delivered to user institutions (Number of user institutions)	Number	0.00 15-Jan-2016	4.00 31-Oct-2020	4.00 30-Apr-2021	4.00 30-Apr-2021
<p>Comments (achievements against targets): Achieved 100% at completion. Hydrological model delivered and training provided to the four relevant institutions.</p>					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Hydraulic simulation facility	Number	0.00	4.00	4.00	4.00



with modern database systems and training delivered to user institutions (Number of user institutions)		15-Jan-2016	31-Oct-2020	30-Apr-2021	30-Apr-2021
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Comments (achievements against targets):

Achieved 100% at completion. Hydraulic simulation facility and training delivered to all four relevant institutions.

Component: Component 2: Pilot Investments for Integrated DRB Management Including Flood and Drought Management and Climate Change Resilience

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
HMS equipment purchased, installed and operational (Percentage of cost)	Percentage	0.00 15-Jan-2016	100.00 31-Oct-2020	100.00 30-Apr-2021	100.00 30-Apr-2021

Comments (achievements against targets):

Achieved 100% at completion. All HMS equipment purchased, installed and operational according to plan. This included 14 automatic meteorological stations, 38 automatic precipitation stations, 1 agrometeorological station, 30 automatic hydrological stations and equipment for gauging (flow meter, acoustic doppler profiler, mechanical cableways). 3 hydrological stations and two water flow meters were procured additional to the original target.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
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Protocols for data compatibility among three countries developed	Yes/No	No 15-Jan-2016	Y 31-Oct-2020	Yes 30-Apr-2021	Yes 30-Apr-2021
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Comments (achievements against targets):

Protocols for data compatibility among three countries **were** developed and signed as targeted. These Protocols aim to provide a framework for the exchange and interoperability of data within the Drina River Basin.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of public awareness campaigns in the Drina River Basin (3 in total)	Number	0.00 15-Jan-2016	3.00 31-Oct-2020	3.00 30-Apr-2021	3.00 30-Apr-2021

Comments (achievements against targets):

Achieved 100% at completion. The objectives of these campaigns were to raise general public awareness on the need to protect and manage the abundant natural resources in the RDB and also show the importance of transboundary cooperation for achieving this. In BiH the Public Awareness Campaign was directed at six municipalities and had a total of 4.100 participants. It included leaflets, videos, as well as five workshops and two round tables. In Serbia, the public awareness campaign was directed at 26 municipalities with over 600 villages. A video was broadcasted on three television stations and a radio jungle was used by local radio stations. An estimated 500,000 persons were reached this way. In Montenegro a video clip was produced. Due to COVID, from spring 2020 on until the end of the Project, public activities bringing people together, for example for workshops were not able anymore.

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Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Number of small grants disbursed (20 in total)	Number	0.00 15-Jan-2016	20.00 31-Oct-2020	20.00 30-Apr-2021	49.00 30-Apr-2021
<p>Comments (achievements against targets): Achieved 245% at completion. In total 49 small grant were implemented in the three countries, more than double than the envisaged 20. The grants support community and local initiatives in a variety of fields, ranging from conservation projects such as improvement of fish stocks, ecotourism and bird watching, to projects rehabilitating rainwater tanks or preventing pollution of water resources through inadequate livestock farming.</p>					
Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Flood and Drought Preparedness consultations with municipalities	Number	0.00 15-Jan-2016	12.00 31-Oct-2020	12.00 30-Apr-2021	12.00 30-Apr-2021
<p>Comments (achievements against targets): Achieved 100% at completion. All consultations took place</p>					
Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion



Number of replicable demonstration-scale activities completed (6 in total)	Number	0.00 15-Jan-2016	8.00 31-Oct-2020	6.00 30-Apr-2021	5.00 30-Apr-2021
Comments (achievements against targets): Achieved 83% at completion. Only five from the envisaged six pilot project were realized. These included final design studies, as well as concrete works to reduce the negative impact of climate change in all three riparian countries. Examples are consulting services and works for the restoration of riverbeds and flood protection or improved groundwater monitoring.					



B. KEY OUTPUTS BY COMPONENT

Objective/Outcome 1	
Outcome Indicators	<ol style="list-style-type: none">1. Hydrological real time model (including climate change impacts) jointly endorsed and operational.2. SAP jointly prepared and endorsed at ministerial level in all three countries.
Intermediate Results Indicators	<ol style="list-style-type: none">1. Hydrological real-time model combined with a climate change impact module and training delivered to user institutions.2. Hydraulic simulation facility extended and includes modern database systems compatible with EU and WMO protocols.3. Hydraulic simulation facility with modern database systems and training delivered to user institutions.
Key Outputs by Component (linked to the achievement of the Objective/Outcome 1)	<ol style="list-style-type: none">1. Preparation of a Drina Basin Strategic Action Program (SAP).2. DRB Water Resources and Basin Study and Hydraulic and Hydrological Modelling for the DRB with Reservoir Operation.3. Preparation of Study for analyses of the pollution of DRB.4. Procurement of incremental equipment and ICT – software, hardware, server.5. Preparation of set of environmental and social documents for Sava Drina River Corridors Integrated Development Program6. Procurement of Floating curtain for emergency pollution Drina River cleaning.7. Procurement of equipment for monitoring water for Geological institute/MNE



Objective/Outcome 2	
Outcome Indicators	<ol style="list-style-type: none"> 1. Drina Task Force (DTF) operational. 2. Hydro-meteorological data collected and shared for modelling and forecasting.
Intermediate Results Indicators	<ol style="list-style-type: none"> 1. HMS equipment purchased, installed and operational. 2. Protocols for data compatibility among three countries developed. 3. Number of public awareness campaigns in the Drina River Basin (3 in total). 4. Number of small grants disbursed (20 in total). 5. Flood and Drought Preparedness consultations with municipalities. 6. Number of replicable demonstration scale activities completed (6 in total).
Key Outputs by Component (linked to the achievement of the Objective/Outcome 2)	<ol style="list-style-type: none"> 1. Improving the existing meteorological and precipitation stations network 2. Providing conditions for the reliable rating curves at hydrological stations 3. Rehabilitation, modernizing and completing hydrological stations facilities 4. Procurement of Cableway 5. Procurement of off-road vehicle for patrolling during floods emergency situations 6. Procurement of two boats with trailers for operation of Floating curtain for emergency pollution Drina River cleaning 7. Public Awareness Program 8. Montenegrin Drina River Basin groundwater resources study with preparation of the Monography 9. Small Grants Program 10. Pilot investments



Objective/Outcome 3	
Outcome Indicators	1. 30 percent of SAP activities address climate change issues related to droughts and floods.

**ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION****A. TASK TEAM MEMBERS**

Name	Role
Preparation	
Anna Cestari	Task Team Leader(s)
Karina Mostipan	Procurement Specialist(s)
Lamija Marijanovic	Financial Management Specialist
IGOR PALANDZIC	Team Member
Jelena Lukic	Social Specialist
Hiromi Yamaguchi	Team Member
Nikola Ille	Social Specialist
Jose C. Janeiro	Team Member
Mirjana Atijas Karahasanovic	Team Member
Ama Esson	Team Member
Margaret Png	Counsel
Walter Klemm	Hydraulic Structures Expert (FAO)
Supervision/ICR	
Berina Uwimbabazi, IGOR PALANDZIC	Task Team Leader(s)
Sanda Jugo	Procurement Specialist(s)
Lamija Marijanovic	Financial Management Specialist
Zhimin Mao	Team Member
Carolina Abigail Delgadillo Medina	Team Member
Jelena Lukic	Social Specialist

Esma Kreso Beslagic	Environmental Specialist
Hiromi Yamaguchi	Team Member
Cesar Niculescu	Environmental Specialist
Nikola Ille	Environmental Specialist
Javier Zuleta	Team Member
Satoshi Ishihara	Social Specialist
Rahmoune Essalhi	Team Member
Jose C. Janeiro	Team Member
Roxanne Hakim	Social Specialist
Mirjana Atijas Karahasanovic	Team Member
Karina Mostipan	Procurement Team
Ama Esson	Team Member
Senad Sacic	Procurement Team
Margaret Png	Counsel
Ntombie Z. Siwale	Team Member
Estella Malayika	Program Assistant
Benedicta T. Oliveros	Procurement Team
Anne Synithica Nilanthi Ranasinghe	Procurement Team

B. STAFF TIME AND COST

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US\$ (including travel and consultant costs)
Preparation		
FY13	4.986	17,022.74
FY14	20.736	90,416.81
FY15	9.706	55,748.17
FY16	21.294	109,854.32



FY17	12.311	62,797.69
FY18	3.942	6,786.50
FY19	1.476	3,259.76
FY20	1.377	3,194.07
Total	75.83	349,080.06
Supervision/ICR		
FY13	.150	677.52
FY14	0	0.00
FY17	2.575	54,421.95
FY18	15.789	100,389.66
FY19	15.100	91,749.65
FY20	8.350	47,335.28
Total	41.96	294,574.06



ANNEX 3. PROJECT COST BY COMPONENT

Components	Amount at Approval (US\$, millions)	Actual at Project Closing (US\$, millions)	Percentage of Approval
Component 1: Multi-State Cooperation in Transboundary DRB Management	2.95	3.49	118
Component 2: Pilot Investments for Integrated DRB Management Including Flood and Drought Management and Climate Change Resilience	5.29	4.70	89
Component 3: Project Management and Monitoring & Evaluation	0.50	0.43	86
Total	8.74	8.63	99



ANNEX 4. EFFICIENCY ANALYSIS

- 1. This ICR follows similar structure and methodology as in the appraisal stage based on the latest available information.** As the project is mainly a technical assistance and not an investment project, the economic analysis is based on qualitative assessment rather than numerical cost-benefit analysis. The cumulative results of the economic analysis for all components show that the project was mostly efficient, with the overall rate Substantial.
- 2. Significant long-run multi-type economic and environmental benefits are expected to result from the project's investments in multi-state cooperation in international Drina management and strengthen capacities of the DRB riparian countries for climate change resilience.** A set of short-term benefits generated from the small grant schemes and pilot investment projects, although difficult to quantify, have a positive impact on overall project efficiency.
- 3. Multi-state cooperation in international Drina management.** As expected at the appraisal stage, the most important economic benefits that the entire DRB region will experience from this project are those that are created as a result of cross-border cooperation after establishment of cooperation mechanisms for the DRB. The DTF is the key mechanism of such cross-border cooperation that was already established and functional during the course of project implementation. This project component is of crucial importance for sustainable management, efficient use, allocation, and proper protection of shared water resources in the DRB.
- 4. To justify planned multi-state cooperative efforts in the DRB, the potential benefits should be weighed against the costs of establishing and maintaining multi-state DRB arrangements.** The quantification of such benefits in the context of transboundary waters is not common, and it is even harder to find studies that specifically quantify the benefits of transboundary cooperation. Although extremely difficult to quantify in monetary terms, it is still important to demonstrate numerous important benefits that this project component is expected to yield especially in a longer term. Therefore, similar to the appraisal stage, a qualitative analysis of this project intervention has been undertaken.
- 5. There is an extensive body of literature supporting the notion that multi-state cooperation over shared rivers promise substantial benefits.** The discussion on cooperative management of internationally shared rivers has recently shifted its focus from sharing water quantity (allocation) to 'benefit sharing.'¹³ This concept maintains that the focus on sharing the benefits from water rather than the quantity of water has potential to shift the 'zero-sum game' of water sharing to a 'positive-sum game' of benefit sharing.
- 6. Drina River is a balanced ecological system, and continuous upsetting of this environmental balance by unmanaged development often results in major economic and social impacts.** The DRB TDA done before the appraisal stage of this project concluded that the existing cooperation between the DRB countries was rather weak and limited to the incidental situations (for example, early warning for floods). Classical strengths, weaknesses, opportunities, and threats (SWOT) analysis undertaken for the project appraisal study had identified hydropower, potable water use and recreation, irrigation and industry,

¹³ Sadoff/Grey 2002, 2005; Klaphake 2005; Phillips et al. 2006; Dombrowsky 2009; Haas 2009; Hensengerth/Dombrowsky/Scheumann 2012.



fishery and nature-based tourism, and sediment exploitation as the main regions' potential economic strengths. However, this analysis indicated that cooperation between DRB governments and cooperation and coordination between (inter)national water institutions in the DRB, although being of the highest importance for the development of the region, present major weaknesses of the existing system. The project has helped tremendously in mitigating this weakness by not only introducing but rather developing cooperation and coordination between international water institutions in the DRB to a level better than initially expected, especially coming from a recent history of conflict.

7. **The project component on cross-border DRB management promoted an integrated, systemwide perspective, where water use opportunities and the various inter-relationships of individual water uses are considered.** The multi-state cooperation in the DRB has already resulted in first steps toward better management of this shared ecosystem. Better coordination among countries through the DTF, an SAP prepared and endorsed by them, regular information sharing of hydrologic data collected by HMSs, and joint discussion of plans for development of new capacities in the DRB have already exceeded initial expectation on cross-border DRB integrated management.

8. **Drina River and its tributaries remain the central feature of the economic environment within the DRB.** The project managed to promote and facilitate efficient and cooperative management in the DRB. Although there is not much evidence of the short-term direct economic benefits, partially due to delays in project implementation and due to its technical assistance system reform nature, still there is a good basis to expect them in the longer term. The direct economic benefits expected from reform done by this project include improved regional cooperation and coordination in hydropower and agricultural production, nature-based tourism and recreation (sport and adventure, eco-tourism, fishery tourism, spa tourism), transport, fishery (cage trout breeding), and sediment exploitation.

9. **The DRB has many competing priorities for water management, such as a source of water supply for drinking water and irrigation, a source of hydropower development, a source of high tourism potential, and so on.** Utilization of hydropower potential is the top priority in the riparian countries, where high percentage of unused hydropower potential attracts investors. In the pre-project period, numerous studies and projects of hydropower facilities were made for the main river and its tributaries. Based on the obtained results, there is a potential in the catchment area for constructing new HPP facilities with a total installed capacity of approximately 2,500 MW and a possible average annual production larger than 7,500 GWh. All riparian countries located within the DRB are therefore considering the construction of new HPP facilities as part of their spatial development plans and/or valid water management plans. Overall, the project stimulated regional discussions around management of existing HPPs and development of new projects. Further, progress on Upper Drina plants was witnessed, in both entities of BiH. All these projects are progressing now, at a different pace, though. Coordination between water and energy sectors within countries has been weak in the past. The project stimulated the dialogue that will hopefully continue going forward. The knowledge gained during this project will be used to support development of new HPPs, especially in the context of integrated water resource development.

10. **The project had a positive impact in reducing tensions in sediment exploitation disputes between countries.** One of the important economic revenue sources in DRB is certainly the sediment exploitation that on the other hand causes major dispute between the riparian countries (for example, the determination of the border between SRB and BiH). Therefore, inter-state cooperation in the DRB has



an important role to ease tensions over conflicting interests and provides gains in the form of savings that can be achieved or the costs of non-cooperation or dispute that can be averted. The dialogue between countries has started and was fruitful. Major changes are to be evidenced in the coming years, but there is optimism that the past tensions will ease substantially.

11. **Another important outcome of the project is that the multi-cooperation in the management and development of the DRB also has to some degree contributed to political processes and institutional capacities that themselves open the door to other collective actions, enabling cross-border cooperation beyond the river.** Improved river basin management is expected to increase the productivity of the river system, generating additional opportunities in other sectors through forward links in the economy. This enables broader economic growth and regional integration that generate benefits even in apparently unrelated sectors (for example, labor flows, trade, and opportunities for construction of shared infrastructure). Although there is not much evidence to support these positive outcomes in the short term, there is vast evidence from other regions that suggests high probability of this happening in the longer term. The cooperation steps already taken with increased institutional capacities owing to this project are crucial for this to materialize.

12. **Significant long-term benefits are expected to result from the development of the hydraulic and hydrological model for the DRB with reservoir operation optimization, because it will introduce the framework of harmonization and synchronization of the existing HPP systems.** The main objective of these activities is the establishment and operation of a suitable, jointly endorsed hydrological real-time and hydraulic simulation model combined with a climate change impact module. The model will serve as the first-phase prognostic model to be used for flood forecasting and an early warning system. This is particularly important for scenarios of extreme hydrological conditions including floods, accidents, or cases when there is a need to coordinate and harmonize water management activities of different water users. The plans/rules for the management of existing reservoirs, within this project were considered through the models in the module for optimization of reservoir management and based on the analysis, recommendations were made for improvement in future work, but no changes were made to existing plans/rules for accumulation management as part of the project duration. On the basis of the produced models, a good starting point was created, and it was possible to continue the dialogue between the countries in the basin on this topic on the basis of objective, scientifically based indicators.

13. **This project component has also increased the riparian countries' capacities to jointly plan and select investments more efficiently and in accordance with the IWRM principles, reducing the economic and social benefits foregone as a result of the delayed preparation or weak project design.** The Drina Flood Protection Project (DFPP) of the World Bank did not have the opportunity to use the hydraulic and hydrological model as it was not yet developed, but any similar project in the future will benefit from that model. The economic results of the DFPP were positive with an economic rate of return (ERR) of 17.6 percent and suggest that similar projects in the future that use the input from the newly created hydrological model have potential to be even more efficient and generate even higher economic benefits, as they will be based on much better information. Furthermore, the project has strengthened capacities of water agencies in riparian countries through procurement of IT equipment, software, and training. Employees of the hydrometeorological institutes are trained to use and work with the hydrological model, as well as with the database software. Employees in water agencies and in public institutes and water management companies are trained to work with a hydraulic model and with database software. Through



the database software, water information management is fully integrated into digital data environments—to collect, validate, and share accurate data products. As such, they are able to quickly and properly respond to any data requests that are needed for preparation of future projects, hence increasing efficiency and economic benefits that will be generated by those forthcoming projects.

14. **The project produced a positive short-term economic impact through a small grants program and pilot investments.** Although it is difficult to quantify the economic and financial effect of 49 grants delivered in three countries, it is reasonable to assume an immediate positive economic outcome as they improve the immediate potential in those economic fields. Similarly, six pilot investments either had an immediate impact or paved the way for future investments with positive economic outcomes.

15. **The small grants generated positive impact in boosting of tourism, protection of biodiversity, improvement of fish stock in the river bands for sport fishing, environment and water protection, agriculture development, improvement of cadaster documentation, and so on.** Improvement of fish stock in the rivers was done by supporting sport fishing associations and clubs in three grants in Praca and Drina Rivers and municipalities of Zvornik, Minici, Srebrenica, and Bratunac in BiH; seven grants in MNE, including Tara and Lim Rivers, Plav Lake and Otilovicko Lake, and Breznica in DRB; and Juvenile fish basin Tip A, B, and C, Food for fish in SRB. These grants have a direct impact in boosting tourism and sport fishing thus generating income for local people. Similarly, projects for conservation and protection of biodiversity in BiH, MNE, and SRB boosted tourism activities in both the short and long term. The agriculture sector also benefitted from grants providing fertigators, irrigation pumps, fertilizers mixer with containers, irrigation systems, water tanks, feeding courts, and so on in SRB. All these have a direct impact in increasing production capacity of beneficiaries, leading to short-term higher income. Grant investments in recreational equipment, such as kayaks, binoculars for bird watching, production of promotional boards, promotion of heritage sites, and development of tourism and gastronomic offer through sustainable technologies and energy efficiency, all boosted tourism activities in the municipalities supported, although this is difficult to quantify. In general, all the grants provided by this project have a direct impact in generating new jobs, increased economic activity, and income for the local people.

16. **Pilot investments for climate change resilience also had a positive economic impact in both the short and long term.** This subcomponent supported pilot project investments that reduce negative climate change impacts in all three riparian countries, including investments for improved flood protection measures along the Drina River and its tributaries, improved ground water resources monitoring, improved hydrometeorological forecasting, soil condition monitoring, establishment of reliable discharge rating curves, and improved water quality. Implementation of the Upgrade of Existing Flood Protection from River Lim (MNE) in Šarampov Pilot Project provides improvement of the existing flood protection in Prijepolje (SRB) but at the same time could be replicable throughout the DRB. It would represent the introduction of new mobile flood protection practices and thus an innovation in the DRB therefore its economic positive impact is even larger than just in itself. The general objective of the investment restoration of degraded riverbeds and banks of the Drina riverbed and its tributaries in urban city areas is to decrease the flood risks and impact of climate change in urban settlements in the DRB. Although there are no available data to measure economic impact of these two projects, the results from the recent DFPP suggest that investment in protection from floods produced an ERR of 17.6 percent. A series of feasibility studies and project designs on flood protection done through this project will also



enable a better preparation of new flood protection and other projects with an even higher ERR. Improved hydrometeorological forecasting is correlated with improved touristic and agricultural outputs.

17. **It can be reasonably assumed that the sum of all current and expected benefits is extremely high and by far exceeds the sum of all costs of this project investment.** According to the World Meteorological Organization (WMO), the overall rate of return on investments in improved resilience is high, with benefit-cost ratios ranging from 2:1 to 10:1, and in some cases even higher.

18. **Fiscal sustainability of institutions responsible for DRB cross-border cooperation.** The project provided funds to support the functioning of institutions responsible for the cross-border DRB management during the project lifetime while the fiscal sustainability of these institutions in the post-project period will be ensured considering that the associated costs for government staff (travel and accommodation) in all three riparian countries will be adequately compensated through their state budgets.

19. **This project made significant investments in increasing operational capacities to HMSs and water management institutions.** The evidence suggests that the project provided significant support to the institutions responsible for water management and through it, among other things, the following were financed: (a) procurement of software packages for the collection, processing, and management of meteorological and hydrological data; (b) procurement of IT equipment; (c) development of a flood forecasting system in the DRB, including the optimization of the operation of HPPs; and (d) development of basic studies of water resources in the DRB. Also, through this project, 5 meteorological stations, 12 precipitation stations, 1 agrometeorological station, 2 mobile dopplers, 30 measuring rods, and 12 hydrological stations were procured. The software package for meteorological and hydrological data management was procured and delivered to the Sava Agency and the Republic Hydro-Meteorological Institute of RS. Additionally, this project funded activities on the preparation of the study of water resources in the DRB and the development of hydrological and hydraulic model of the DRB, including the optimization of hydro-reservoirs in the basin.

20. **Strengthening of HMS is expected to produce different types of direct and indirect positive economic effects, especially in the longer run.** In the long run, these benefits will materialize in reduction in damage and losses related to hydrometeorological hazards and increase in benefits in productive sectors (HPP, agriculture, tourism, and so on). The new hydrometeorological information and models created by this project will be used for the proper operation of HPPs, in close cooperation between the HMSs and HPPs. However, some of the arguably most important benefits (for example, feeling of security and preserving life) and most significant costs (for example, the emotional burden of selling and moving from one's home to be out of a high risk zone) are not easily and readily quantifiable.

21. **Weather and climate hazards.** The DRB is exposed to a range of natural hazards, including heavy precipitation causing floods and landslides, droughts and forest fires, earthquakes, and prolonged cold and heat waves that occasionally affect each country's key economic sectors (energy, agriculture, transport, water management, and tourism). It is expected that, due to climate change, the frequency and severity of such hazards will increase in the future, leading to increased risks in the coming years. Natural disasters in the DRB are often of cross-border nature due to the size of the countries and the geography of the region. Several times in recent years these disasters had devastating socioeconomic consequences



(2014, 2017, and 2019). The most important weather-dependent economic sectors in the DRB that can benefit from better HMS in terms of improving productivity and efficiency are energy production (hydropower), agriculture, road traffic, and construction.

22. **In relation to energy production, weather-related services are important due to the hydropower production on Drina and its untapped potential in this area.** Hydropower producers in all countries need to obtain good information about meteorological-forecasts and hydrological data to plan electricity consumption and production as well as control the production facilities. They also need to obtain tailor-made weather services especially on expected extraordinary hydrological conditions for the next 1–3 days, flood warnings, hydrological forecasts, online hydrological data, and weather forecasts. This project has enabled them to have these data available, therefore improving their daily operation and increasing efficiency and productivity. A World Bank study in 2017 found that a strong coordination among three countries is necessary to avoid or at least mitigate floods. In all scenarios for the upper Drina River with a cascade of reservoirs, the flood risk level downstream of each dam in the cascade would increase unless an integrated river basin management approach was applied, and particularly unless the consensus between the water and hydropower sectors of all three countries is achieved about the reservoir management during floods.¹⁴ Therefore, the economic benefits of this project are expected to exceed any costs occurred in creating cross-border cooperation and in time data sharing.

23. **Agriculture is one of the most weather-prone sectors in the DRB** (accounted for 6.1 percent of the GDP in BiH in 2019, 6.7 percent of GDP in MNE in 2018, and 6.2 percent of GDP in SRB in 2019). Land use, crop selection, and farming practices are all directly dependent on the prevailing local climate. The DFPP estimated that the agricultural production value in the DRB (Gorazde, Bijeljina, and so on) after the protection from floods will increase by approximately 3.2 times. Similar or even higher effects can be expected in SRB.

24. **Assessment of economic benefits.** Methodologies to assess the economic benefits of investments in HMS are still evolving. The broad range of estimates in the literature suggests that these investments can be extremely beneficial in terms of averting losses associated with climate hazards, such as floods, and enhancing the productivity of climate-dependent sectors such as hydropower, agriculture, and transport. Global studies have found high returns to investment in HMS (Hallegatte 2012)¹⁵. According to the WMO, the overall rate of return on investments in improved resilience is high, with benefit-cost ratios ranging from 2:1 to 10:1, and in some cases even higher.¹⁶ The ratio depends naturally on the time frame and period of amortization, the interest rate used for investments, the needs of added personnel, and the operations and maintenance costs stemming from the investments. At the present time, it is quite difficult to get appropriate estimates of losses due to weather and climate in developing and transition countries.¹⁷

¹⁴ World Bank. 2017. *Support to Water Resources Management in the Drina River Basin* Drina River Basin – Roof Report.

¹⁵ World Bank. *Policy Research Working Paper; No. 6058 Hallegatte, Stéphane. 2012. A Cost Effective Solution to Reduce Disaster Losses in Developing Countries : Hydro-Meteorological Services, Early Warning, and Evacuation. . , Washington, DC.* <https://openknowledge.worldbank.org/handle/10986/9359>

¹⁶ WMO (World Meteorological Office). 2019. *Invest in Early Warning to Deliver Climate Adaptation.*

¹⁷ World Bank. *Strengthening the Hydrometeorological Services in South Eastern Europe.* https://www.preventionweb.net/files/7650_StrengtheningHydrometeorologicalSEE1.pdf.



25. **The ratio of investments to benefits for the South Eastern Europe (SEE) countries commonly could be a bit higher than the general 1:7 value calculated by WMO; in the long run (1–10 years) it could run from around 1:6 to 1:20.** The approach of the study was to estimate the value of reduced losses as well as the value of increased production. However, due to the lack of data, only a subset of the weather-dependent sectors has been studied, and only direct costs were calculated. The study suggested that improved HMS could significantly benefit the national economic development in all of the SEE countries. In calculating the cost-benefit ratio, the study estimated that the actual savings or economic benefits from improved HMS could gradually ramp up over five years to the point where they would, in year five, provide approximately 75 percent of potential economic benefits. This assumes a conservative learning curve for the first five years. During the following five years, an 80 percent level of potential annual economic benefits is assumed. The calculated ratio varies widely from country to country. In some cases, the ratio is lower; due, for example, to the small size of the national economy, or to the lack of beneficiary information from different sectors. However, if the NMHSs in the countries were strengthened individually as ‘stand-alone projects’, the ratios are much lower.¹⁸ Therefore, the economic benefits from integrated water management, through the shared hydrologic model and hydrometeorological data are much higher than having them used individually with partial data. As such, the efficiency of this project grows in scale by better cross-country cooperation and integrated HMSs.

26. **Similar to the appraisal stage, there are still no reliable systematic data on impacts of weather and climate on different socioeconomic sectors in the DRB countries.** It is also difficult to find adequate data to produce reliable figures for the value of the HMS before the project and the benefits yielded from improved observations and services. Part of the reason is the delay in project implementation and therefore the data were produced at a later stage of the project. Therefore, there is no reason to try and change the analysis done at appraisal stage, where to analyze potential benefit-cost ratio that can be expected in the longer run from the projects’ investment in HMSs, the results of the UN Study ‘Strengthening the HMS in SEE’ were used. The main assumptions applied in this analysis are (a) potential economic benefits of improved HMS in a country are distributed evenly throughout that country; therefore, a criterion of territory surface was applied to adjust the estimated cumulative benefits in the first 10 years from the study from the national level to the DRB level for all riparian countries; (b) the calculated DRB-level cumulative economic benefits were then adjusted considering the investment in HMSs’ strengthening throughout this project; and (c) average annual maintenance costs stemming from this investment is estimated at 0.5 percent of the initial investment.

27. **The applied conservative estimate calculates the benefit-cost ratio of strengthening the national HMSs in the first 10 years under this project to range between 4.0 and 8.6 in BiH, 1.2 and 4.6 in MNE, and 6.5 and 9.5 in SRB.** As there are no new data nor information that would suggest otherwise, it is believed that these cost-benefit ratios still hold, although due to delays in project execution, the time distribution of 10 years should shift to the start from the last project implementation year and onward.

28. **It should be noted that this analysis did not consider other potential benefits** such as reduced tourism losses, avoided displacement of population, reduced injuries, and avoided loss of life because they are intangible and extremely difficult to quantify. Therefore, estimates of benefits presented are

¹⁸ World Bank. *Strengthening Hydrometeorological Services in South Eastern Europe*https://www.preventionweb.net/files/7650_StrengtheningHydrometeorologicalSEE1.pdf.



conservative, and it can be reasonably assumed that the actual economic benefits of capacity increase of HMS will be larger.

29. **Fiscal impact.** The annual budgets available to the national HMSs in the DRB are in general low and strongly oriented toward personnel costs. They typically do not support modernization plans but are sufficient enough to cover the regular operational and maintenance costs. Fiscal impact of the investment in strengthening of national HMSs will be relatively low considering that the assumed annual maintenance costs will range from 0.02 percent of HMS annual budgets in SRB and FBiH, to 0.21 percent in RS, and 0.23 percent in MNE.

30. **Financial analysis.** Financial analysis is not applicable to this project because it is not an investment that generates revenue. However, it is important to mention that the project implementation delay was only six months, despite the peak of the COVID-19 pandemic, and there were no cost overruns despite the extension. That suggests a financially efficient project implementation.



ANNEX 5. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS



ANNEX 6. SUPPORTING DOCUMENTS (IF ANY)

Implementation Status and Results Reports:

- Seq No: 1 - December 2016
- Seq No: 2 - June 2017
- Seq No: 3 - December 2017
- Seq No: 4 - June 2018
- Seq No: 5 - December 2018
- Seq No: 6 - June 2019
- Seq No: 7 - December 2019
- Seq No: 8 - June 2020
- Seq No: 9 - January 2021

Restructuring Paper, June 30, 2020

Aide Memoires:

- Handover mission, September 5–9, 2016
- Implementation support mission, April 16–21, 2018
- Handover mission, October 1–3, 2018
- Mid-term Review Mission, May 27–June 3, 2019
- Implementation support mission, March 18, 2021

Borrower ICR:

PROJECT COMPLETION REPORT (PCR) For the West Balkans Drina River Basin Management Project (WBDRBM), Ministry of Foreign Trade and Economic Relations (MOFTER), BiH, Sarajevo, August 2021



ANNEX 7. LIST OF SMALL GRANTS

Small Grants Program	Total Number	Funds Disbursed (US\$)
BiH	11	150,112
Federation BiH	5	
RS	6	
SRB	16	209,250
MNE	22	214,034
TOTAL:	49	573,396

	Beneficiaries/Users	Activity/Description
Bosna and Herzegovina - Federation of BiH		
1.	Municipality Pale FBiH, Prača	Conservation and protection of biodiversity of the Prača River: <ul style="list-style-type: none"> Landscaping of the Prača riverbed Procurement and installation of benches Procurement of waste bins with a stand
2.	Elementary school: 'Prača', Prača	Developing environmental awareness of children and youth: <ul style="list-style-type: none"> Painting the fence, entrance gate, kids' playground equipment, waste bins, and 10 benches in the school yard Planting new seedlings of flowers and trees Educating pupils about the value of natural heritage
3.	Sport Fishing Association 'Toplik' Praca	Improvement of the fish stock of the Prača River: <ul style="list-style-type: none"> Restocking with juvenile (10–12) and mature (25–30 cm) fish Procurement and installation of information boards
4.	General Agricultural Veterans Cooperative 'PRAČANKA', Pale FBiH, Praca	Procurement of crates - 5,686 pcs (for collecting medicinal herbs and forest fruits)
5.	Municipality Foca FBiH, Ustikolina	Restocking the Drina River with juvenile fish
Bosna and Herzegovina – Republika Srpska		
1.	EKO ZONA 'Ugarski brzaci' doo, Kneževo municipalities: Zvornik, Milići, Srebrenica, and Bratunac	Fish restocking of the DRB in municipalities Zvornik, Milići, Srebrenica, and Bratunac (for 2020 and 2021): <ul style="list-style-type: none"> Raising of awareness of restocking Provided juvenile fish brook trout at clearly defined places Presentation of the importance of restocking
2.	NGO - 'Waste Management Center' Drina River Basin	Mapping cadastre of local and illegal landfills in the DRB (Protection of the Drina River from floating waste): <ul style="list-style-type: none"> Made cadastre of local and illegal landfills (electronic version and paper/cardboard map [10 copies]) Adopted guidelines for methods and models for solving the problem of floating waste by end users (electronic version on USB and paper version [10 copies]) Promoted project (website and brochures) Regionally connected all users
3.	NGO – 'SEDRA', Banja Luka National Park Drina Srebrenica	Identification and assessment of cultural-historical and natural values within the Drina biosphere reserve:



	Beneficiaries/Users	Activity/Description
	Municipalities: Višegrad, Srebrenica, Rogatica	<ul style="list-style-type: none"> • Prepared map of the area (scale 1: 200,000) with identified natural and cultural-historical values of the Drina biosphere reserve - 10 pieces • Produced and distributed information leaflet with integrated data and map of the area • Created a website with available data as a long-term result of the project • Held an online workshop with the participation of all project beneficiaries
4.	NGO EKO ZONA ŠIPOVO National Park DRINA, Srebrenica	<p>Sustainable exploitation of natural values:</p> <ul style="list-style-type: none"> • Preparation and publication of a pilot study on the possibility of using and utilizing natural resources in the National Park 'Drina' • Education of citizens on the importance and ways of sustainable use of forest natural resources and water protection • Public information and resolving issues related to the sustainable use of integrated forest and water natural resources
5.	NGO GENESIS, Banja Luka Primary school 'Vuk Karadžić' Višegrad and secondary school 'Ivo Andrić' from Višegrad, (40 pupils)	<p>School of short films:</p> <ul style="list-style-type: none"> • Holding of interactive, educational online workshops with selected groups of students, 20 workshops for 40 school pupils; (Topics: DRB and the values of natural and cultural heritage, sustainable use of water resources, and conservation of biodiversity) • Evaluation of the effects of educational workshops on changes in the level of knowledge and attitudes of participants in educational online workshops • Holding of online workshops for shooting short films; 20 workshops for a minimum of 20 school pupils • Shooting of two short, educational films, (lasting 3–5 minutes each), on topics: Drina River Basin and values of natural and cultural heritage, sustainable use of water resources, and conservation of biodiversity • Donation of one laptop and one HD camera to each school, along with recorded films, which will continue to be used in working with school students • Media promotion of the project.
6.	Quantum doo, Banja Luka National Park Drina Srebrenica, Touristic organization of the Municipality Zvornik;	<p>Video promotion of National Park Drina Srebrenica and Zvornik Lake:</p> <ul style="list-style-type: none"> • Promotion of the value of natural and cultural heritage of the Drina National Park area • Development of regional tourism as an important economic branch • Web and media presentation
Montenegro		



	Beneficiaries/Users	Activity/Description
1.	Tourist organization, Žabljak	Bird watching and ecotourism in the National Park 'Durmitor': <ul style="list-style-type: none"> • Procurement of 6 binoculars for birdwatching • Design and printing of manuals for birdwatching
2.	Sport fishing club 'Lipljen'-Pljevlja	Development of fishing tourism through the formation of a fishing area 'Otilovičko jezero': <ul style="list-style-type: none"> • Procurement of boat • Restocking of lake/'Otilovičko jezero'
3.	Sport fishing club-fly fishing 'Budućnost'	Conservation of natural resources and biodiversity through the protection and conservation of water and fish stocks on the area of Municipality Žabljak: <ul style="list-style-type: none"> • Procurement of drone • Procurement of park furniture • Procurement of thermal surveillance cameras
4.	Municipality Šavnik	<ul style="list-style-type: none"> • Construction of an artificial reservoir on the katun Starac, Zakosi place
5.	Municipality Šavnik	<ul style="list-style-type: none"> • Construction of an artificial reservoir on the katun Korita, Sinjajevina
6.	Sport fishing club 'Plavsko jezero', Plav	Conservation of natural resources and biodiversity through the protection and conservation of water and fish stocks in the area of the upper Drina/Lima River Basin and protection of waters from pollution and improvement of autochthonous fish stock for sustainable development of fishing tourism: <ul style="list-style-type: none"> • Procurement of uniforms for the work of fish guards • Procurement of 2 boats and 3 cameras • Setting up information boards
7.	Municipality Nikšić	Rehabilitation of existing rainwater collection tanks ('bistijerna') in local communities Trubjela and Velimlje in Municipality Nikšić
8.	Nature Park 'Dragišnica i Komarnica', Šavnik	Improving the state of the environment and promoting the natural values of the Nature Park: <ul style="list-style-type: none"> • Procurement of park furniture
9.	Utilities D.O.O. 'Komunalne djelatnosti', Plav	Defined sanitary protection zones in the Municipality of Plav (Sources: Jasenica, Pusta Vrata, and Pipuran)
10.	Rural homestead 'Triton'	Development of tourism and gastronomic offer through sustainable technologies and energy efficiency: <ul style="list-style-type: none"> • Procurement of 6 bicycles • Procurement of solar fruit dryer
11.	Sport fishing club 'Tara' Mojkovac	Diversification of sport-fishing tourism on the River Tara: <ul style="list-style-type: none"> • Set up tourist signage on the riverbank • Park furniture set up • Procurement of juvenile fish
12.	Sport fishing club 'Nikšić-NK', Nikšić	Conservation of natural resources and biodiversity through the protection and conservation of water and fish stocks in the area of the upper Drina: <ul style="list-style-type: none"> • Procurement of 2 boats • Procurement of cameras



	Beneficiaries/Users	Activity/Description
		<ul style="list-style-type: none"> Locating of landfills
13.	NVO 'Euromost'	Identification, registration, and record of illegal landfills on the shores of River Lim, Bioča - Bijelo Polje: <ul style="list-style-type: none"> Procurement of 2 boats, drone, and cameras
14.	Montenegro Association of Sport Fishing organizations Partner: NVO Green Home	Protection and conservation of water and natural resources of the Tara River: <ul style="list-style-type: none"> Development of a watercourse revitalization plan and assessment of hydro morphological pressures
15.	Miloš Šturanović, Nikšić	'Cleaner rivers of the Drina basin'
16.	Mira Đukanović, Nikšić	Impacts of climate change on groundwater in the DRB
17.	Municipality Nikšić	Rehabilitation of existing rainwater collection tank ('bistijerna') in local communities Vilusi, Šaban voda - Municipality Nikšić
18.	Municipality Mojkovac	Production of promotional boards with creative inscriptions on the importance of proper waste disposal and the importance of natural heritage
19.	Sport fishing club 'LIM', Berane	Improving the protection of the Lim River: <ul style="list-style-type: none"> Procurement of 6 hunting cameras, 3 binoculars, and 3 handheld LED spotlights
20.	Utilities DOO "Komunalne usluge", GRADAC, Mojkovac	Cleaning the Rudnica riverbed: <ul style="list-style-type: none"> Procurement of trimmers Procurement of protective and equipment for work in water
21.	Directing Committee for Water Supply of the Village Brezna	Water protection in the region of the village Brezna and rural development through setting up baskets for solid waste management and tourist and agro signalisation and education of locals: <ul style="list-style-type: none"> Procurement of reflective foils Procurement of solid waste baskets
22.	Sport fishing club 'Lipljen' - Pljevlja	Production of autochthonous salmonids of the Drina basin in the hatchery on Breznica: <ul style="list-style-type: none"> Adaptation of the hatchery facility Formation of the parent flock of huchen/Danube salmon (Hucho hucho)
Serbia		
1.	Academy of Vocational Studies, ŠABAC	<ul style="list-style-type: none"> Device and reagents for laboratory analysis of water samples
2.	Sava HERB, d.o.o., Šabac	<ul style="list-style-type: none"> Reversible osmosis device, UV stabilization device
3.	Stepić Vladimir, Vladimirci	<ul style="list-style-type: none"> Manure loader
4.	Pavlović Dejan, Šabac	<ul style="list-style-type: none"> Fertigator, irrigation pump, fertilizer mixer with containers
5.	Stojićević Goran, Šabac	<ul style="list-style-type: none"> Fertigator, irrigation pump, atomizer
6.	Janković Miloš, Ljubovija	<ul style="list-style-type: none"> Greenhouse, irrigation system
7.	Budimirović Nadežda, Bogatić	<ul style="list-style-type: none"> Fertigator, irrigation system, feeding courts
8.	Vasilić Davor, Šabac	<ul style="list-style-type: none"> Fertigator, irrigation pump, feeding courts
9.	Jovanović Borisav, Šabac	<ul style="list-style-type: none"> Fertigator, fertilizer mixer, feeding courts
10.	Matić Milan, Loznica	<ul style="list-style-type: none"> Fertigator, fertilizer mixer, feeding courts



	Beneficiaries/Users	Activity/Description
11.	Mihailović Nenad, Valjevo	<ul style="list-style-type: none">• Fertigator, irrigation pump, feeding courts
12.	Knežević Radovan, Ljubovija	<ul style="list-style-type: none">• Fertigator, irrigation pump, feeding courts
13.	Stefanović Dobrica, Šabac	<ul style="list-style-type: none">• Irrigation system, water tank, feeding courts
14.	DB FOOD, d.o.o., Bajina Bašta	<ul style="list-style-type: none">• Aerator for water aeration• Oxygenator to enrich water with oxygen
15.	Čanak Stevan, Bajina Bašta	<ul style="list-style-type: none">• Juvenile fish basin Tip A, B, and C, Food for fish
16.	Ivan Nastić, Extreme Sports Club - Wild Serbia, Valjevo	<ul style="list-style-type: none">• Recreation kayak, camera with lens, camera with housing for recording under water



ANNEX 8. DRB Map

