

2018

# P166551-ASA-TF0A6563 Output Report on the Sava and Drina Corridor Integrated Development Program



Europe and Central Asia  
Water, Energy, Transport, Environment and  
SURR Global Practices



**Sava - Drina River Corridor Integrated Development Program**  
**Conceptual Outline**  
**May 21, 2018**

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## 1. BACKGROUND

### A. Country and regional context

**1. Ever since gaining sovereignty, the Western Balkan countries have strived for convergence of living standards and economic development with European Union countries.** However, countries in the region could not achieve their full economic growth potential due to limited coordination and cooperation. The case of water management among Sava-Drina River riparian countries demonstrates the issue well. The economy and jobs in the region depend heavily on these shared water resources, to transport goods, generate energy, grow food and fibers, sustain biodiversity and provide for leisure and eco-tourism. However, since the Sava and Drina waterways form most of the borders, the development of the river corridors as shared economic assets has been hampered. Conventional investment planning that limits the decision within the national boundary has prevented multi-purpose investments that can capture benefits across borders and sectors. The Sava-Drina River Corridor still possesses substantial rehabilitation and development potential that with an integrated approach could pave the way for further development in the water sector and beyond.

**2. The Sava River Basin has still untapped potential to enhance economic growth and create jobs.** The GDP/cap ranges from US\$5,000-6,500 (Serbia, Bosnia and Herzegovina, Montenegro) to US\$13,000 (Croatia) and US\$24,000 (Slovenia), a typical range for South Eastern Europe. The Sava basin generates 20.5% of employment in Serbia, 35.3% in Croatia and 54.4% in Slovenia. As the Sava flows from west to east across Slovenia, Croatia, Bosnia and Herzegovina reaching the Danube in Serbia, the river opens the opportunity to regain some of its former position as an important transportation corridor that simultaneously will require interventions to manage floods. The Drina corridor has still significant potential for hydropower generation, food production and tourism development.

**3. The Sava and Drina river corridor forms the backbone of the region.** In this region (Figure 1), a pivotal feature is the Sava River Basin, one of Europe's largest transboundary basin. It covers over one third of the Western Balkans in area and population and connects five of the eight Western Balkan countries (i.e., Slovenia, Croatia, Bosnia and Herzegovina [BiH], Serbia, and Montenegro<sup>1</sup>). The Drina is the Sava's largest tributary, draining a mountainous area half the size of Switzerland. The Sava and Drina have a proclivity for both dry spells as well as devastating floods—most recently occurring in 2010 and 2014. These create risks to livelihoods and impose constraints on trade, food security and productive investment. Although the hydraulic

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<sup>1</sup> The three other countries all share water resources as well but Albanian rivers drain predominantly into the Adriatic; while Kosovo\* rivers drain into Albania, to the Danube via Serbia, or to Macedonia; and Macedonian rivers mostly into the Aegean via Greece. It is to be noted that a minor part of the headwaters of Drina river lies in an uninhabited mountain range in Albania.

\* This designation is without prejudice to position on status, and is in the line with UN Security Council Resolution 1244/99 and the International Court of Justice Opinion on the Kosovo declaration of independence.

infrastructure in the basin is extensive it was poorly maintained and not modernized after 1990, hampering economic recovery and suppressing growth.



Figure 1: The Sava River Basin, indicating the capitals of the Sava riparian countries. Source: UNECE (2016)

4. **Economic growth and convergence. The Western Balkan countries aspire to consolidate economic growth and enhance their prosperity.** They seek convergence with the living standards and market-driven and rule-based systems of the European Union countries. As economic growth and poverty reduction are gradually improving again after the global economic crisis, they aim to become stable middle-income societies in the shorter term. With political and administrative reforms progressing, the countries are in various stages of accession to the EU, with Slovenia and Croatia already being Member States. The Berlin Process (with its annual summits between the countries and the European Commission to discuss reform and investment programs) attests to the focus on this convergence. Economic and policy integration across the region remains a key instrument to enhance economic growth.

5. **Countries in the region have suffered from a lack of coordination and cooperation.** Following the collapse of the Yugoslavian State, the countries have prioritized state-building. This has caused a break-up of the former Yugoslav administrative systems; though the countries are still applying many of the former policies and procedures, region-wide coordination and cooperation have suffered. In several locations border disputes exist, e.g., where unstable river beds are the legal markers of the border. The fact that the Sava and Drina waterways now form most of the borders has greatly hampered development of the river corridors as shared economic assets. This coordination failure has increased the economic isolation of the neighboring countries.

6. **Improving economic ties is important not just for poverty alleviation and increasing economic growth,** but also for improving relations and reducing risk of future conflict. Much has been conjectured about future wars over water. The reality is that, due to the high risks and opportunity costs to disagreements, transboundary water resources are more likely to lead to cooperation and dialogue between countries rather than conflict. Countries in this region will benefit from working together towards an economically more productive environment with multi-purpose investments that improves economic growth, are environmentally sustainable and enhance resilience against current and future climate-related risks such as floods and droughts.

7. **The World Bank is recognized in the region as a long-standing partner to all Western Balkans countries** assisting in the past decades with the transition processes after the demise of the plan economies around 1989, and with the recovery of the national economies after the regional conflict. The Bank has notably supported an intensive regional partnership on water resources, irrigation, energy security and flood protection. Increasingly, the Bank has been emphasizing the benefits that can be captured from regional cooperation; its regional support priorities include notably fostering economic growth and job creation, regional connectivity, facilitating trade, and increased resilience against disasters and climate-related risks (World Bank Western Balkans poverty program, 2017; World Bank Water GP Water Strategy for Western Balkan, 2017).

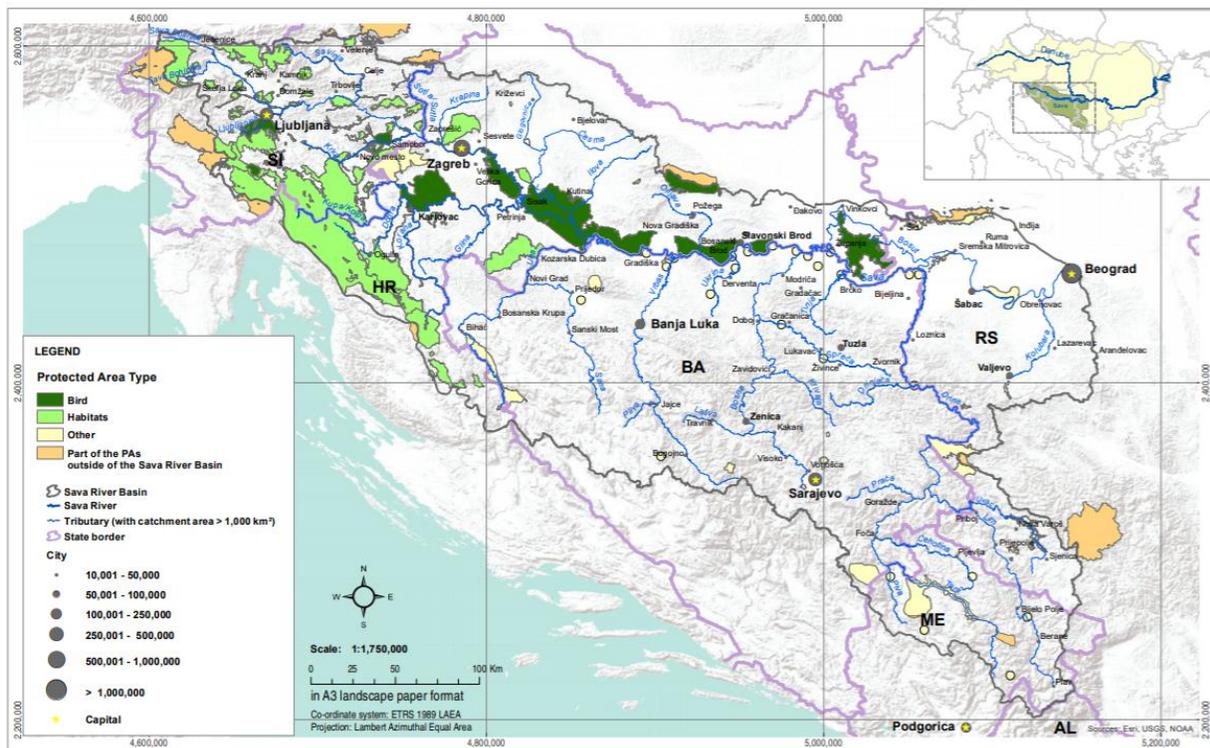
## B. Sectoral and institutional context

8. **Conventional investment planning by sector and at national and entity level is still prevalent in the region,** creating obstacles to identify and execute realistic multi-purpose investments that can capture benefits across borders and sectors. Improving cooperation on water management between the riparian countries, including integrated investment and management of the corridor, would unlock significant economic potential across several sectors.

- **Floods.** The 2014 Sava flood—the largest flood in a century—caused 79 casualties and a damage of €1.5 billion in Serbia (4.7% of GDP), €2.0 billion in Bosnia and Herzegovina (15% of GDP) and €300 million in Croatia. In 2010 the Drina was flooded extensively—partly due to spilling hydropower reservoirs—and saw its highest levels in 100 years.
- **Navigation.** Prior to the dissolution of Yugoslavia, the Sava was navigable all year round from Belgrade up to Sisak in Croatia; annual freight carried has declined from 5.2M ton in 1990 to 0.5M ton in 2012. Beside bulk goods and container shipping, river cruising has

become a growth market in the region and the Sava offers largely untapped potential in this sector.

- **Environment.** The Sava corridor nourishes expansive wetlands and riverine forests—7 Ramsar sites cover a total 85,000ha. The Drina corridor features vast pristine mountainous forests and nature parks; its Tara Canyon is a UNESCO Biosphere Reserve (MNE).
- **Hydropower and energy.** The Sava riparian countries have a total generating capacity of nearly 20 GW: about 43% is produced by hydropower (of which 26% specifically from the Sava Basin). In Montenegro, 53% of the hydropower plants are in the Sava River Basin, while in BiH, Montenegro and Slovenia over 85% of the thermal power plants are cooled by water from the Sava River. However, hydropower potential is continually unrealized as large projects are postponed or cancelled. At the same time, consumption is estimated to increase significantly, and meeting this demand will be challenging in an environment of decreasing generation capacity. World Bank estimates that to meet BiH’s national GHG emissions reduction objectives, more than 750 MW of new hydropower plants (HPPs) and 350 MW of new wind generation capacities are needed. Similar conclusions can be drawn for almost all countries of the Western Balkans region.



This product is based on national information provided by the Parties to the FASRB (SI, HR, BA, RS) and ME. The borders between the countries cooperating in preparation of the Sava River Basin Analysis have not been finally determined. The content and maps of this report do not prejudice the determination or demarcation of the borders in any way.

2ND SAVA RIVER BASIN ANALYSIS  
Processed and compiled by the Secretariat of the ISRBC, December 2016

**Figure 2: Protected areas in Sava River Basin that serve natural flood retention functions, Source: The ISRBC (2016)**

9. **Deeper integration of water management is necessary across national borders as well as across water-dependent sectors** to lower investment costs, capture synergies and economies of scale, and minimize negative externalities. In 2014, the leaders of six countries<sup>2</sup> initiated the Western Balkans Six (WB6) process, establishing a connectivity agenda for deepening of regional development and economic integration. While the restoration of the navigability of the Sava river waterway would have a major impact on reducing transport costs, the design of the interventions (dredging, river training, etc.) can be adapted to simultaneously revitalize and protect floodplains, wetlands, and the development of new energy infrastructure. Together, these measures would boost sustainable tourism (and what is sometimes called eco-tourism), a sector with a large potential for job creation, and enable investments in other sectors such as hydropower and irrigated agriculture. Critically, all these measures can be designed to also enhance protection against flood and climate-related risks. Similarly, along the Drina corridor water resource planning needs to integrate hydropower reservoir operation, flood and drought management, tourism development, agriculture and climate change adaptation. Started in 2017, a GEF-SCCF<sup>3</sup> financed project will conduct studies to identify investments with multi-purpose benefits and for climate change adaptation.

10. **The International Sava River Basin Commission (ISRBC), serving as an important platform for multilateral dialogue in the region, supports the Sava and Drina countries on enhancing their cooperation to capture benefits from investments.** The ISRBC<sup>4</sup> was established in 2005 to improve navigation along the river, promote sustainable water management, and mitigate water related hazardous risks. With the cooperation of EC, World Bank and other international partners the ISRBC prepared in 2014 the 1<sup>st</sup> Sava River Basin Management Plan (RBMPs), and is now in the process of development of the first Flood Risk Management Plan for the Sava River Basin. These documents complement the basin plans prepared by each country as it is prescribed in the Water Framework Directive. The Sava riparian countries are either Member States of the EU or strive to accede to the Union. The EU's *environmental acquis* is increasingly the unifying regulatory frame for water management across the Sava-Drina River Corridor, although it is recognized that policies and institutional capacities need to be significantly further developed to allow full implementation. Improving progress towards these goals is vital for increasing economic interdependence of member-countries, improving political relationships, and strengthening cooperation.

11. **The World Bank has a long term, programmatic approach to the region.** There has been an extensive work covering a wide range of studies and policy dialogue activities, at different levels, with the Sava and Drina riparian countries, as well as TA and investment in different sectors, since 2007. In inland navigation the Transport GP prepared studies for the restoration of the Sava Waterway involving Bosnia and Herzegovina, Serbia and Croatia, completed in 2013

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<sup>2</sup> Albania, Bosnia and Herzegovina, the former Yugoslav Republic of Macedonia, Kosovo, Montenegro and Serbia

<sup>3</sup> Global Environment Facility, Special Climate Change Fund

<sup>4</sup> Montenegro gained sovereignty after the ISRBC was established and cooperates on technical level with the Parties to FASRB based on the Memorandum of Understanding on cooperation between ISRBC and Montenegro signed in Belgrade on December 9,2013.

(with EU support). On flood protection and water management the Water GP of WBG assisted the riparian countries in the identification and development of high-priority flood protection works that are being carried out along Bosnia and Herzegovina's Sava bank (in RS financed by EIB) and along the Drina (World Bank-financed). Joint flood forecasting and warning system and flood risk management plan is being developed at ISRBC (with World Bank support and WBIF funding) and the first Sava River Basin Management Plan. In energy aspects the Energy GP of WBG has developed in Serbia advisory projects with the Ministry of Mining and Energy led to an improved regulatory framework for renewable energy projects that created a pipeline for the WBG investments, including a \$75 million commitment to a wind farm in 2017. In Bosnia and Herzegovina (BiH), the WBG prepared a *BiH Power Sector Note*, a document that focuses on a least-cost planning analysis of the BiH power sector over the next two decades (2016-2035). The European Commission has supported the regional hydropower strategy (*A Regional Strategy for Sustainable Hydropower in the Western Balkans*). More recently, countries representatives at the at the ISRBC, at the annual ministerial meeting, held in Bled in June 2017, adopted a Joint Plan of Actions for the Sava River Basin. Serbia and Croatia submitted a EU proposal (FORRET) for funding the preparation of preliminary design of a flood retention area at the Morovic and Spačva and was approved. Croatia has secured EU financing for the restoration of the Lonsko Polje flood retention area.

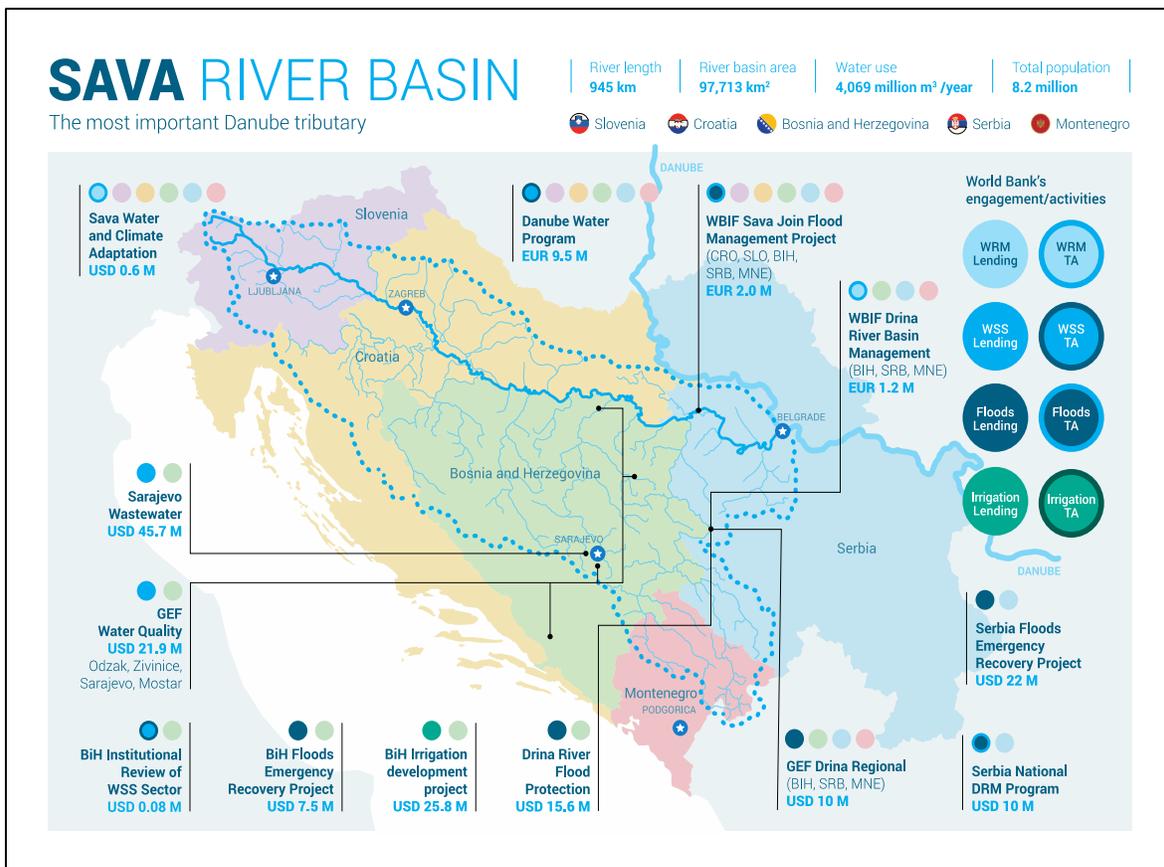


Figure 3: World Bank's Program and recent activities in the Sava River Basin

12. **A potential program on Sava-Drina Corridor focusing on integrated water resources development would allow transition from the past and current studies to joint decisions and investments in infrastructure and other measures.** Such program will also contribute directly to European regional priorities agreed on by EU and WB6 leaders during the recent EU Western Balkan (WB6) Summit on 17 May 2018, to improve energy and transport infrastructure in the region, including hydropower. A potential program on Sava-Drina Corridor focusing on integrated water resources development will contribute directly to this goal by connecting infrastructures, economies and people. The Program would fund detailed preparation and implementation of investments that have been identified through the studies and policy dialogues, but also offer the platform and funding to prepare for next Phase of investments as parallel operations, such as the GEF-SCCF Drina River Basin Management project that will complete studies and develops a Strategic Action Plan.

### C. Relation to World Bank Country Partnership Frameworks

13. The concept of a *Regional Program for the Integrated Development of the Sava and Drina River Corridor* aligns with development priorities identified in each nation's Country Partnership Framework (CPF)<sup>5</sup>.

14. Common development priorities stated in the CPF across Sava River Basin riparian countries include investment in economic infrastructure to enhance growth, improvement of coping capacity against environmental risks, and protection of natural resources to achieve sustainable growth. It builds on lessons learnt from recent and ongoing activities at national and regional level in partnership with the European Union and stakeholders of the Sava and Drina River basins.

15. These overarching objectives are adjusted to reflect country-specific circumstances and priorities in the respective national programs, while current Bank policy seeks to enhance convergence of the countries with EU policies. In this endeavor, the Bank collaborates with EU programs to seek synergies and complement the EU's strengths. Notably, the EU and the other international financing institutions active in the region (EIB, EBRD, CEB, KfW, etc.) experience institutional challenges when engaging at regional level whilst the Bank may be better equipped for this purpose. Water, in the form of transboundary rivers, is a sector where benefits from regional cooperation are prominent.

## 2. Proposed PDO and Results

### A. Proposed Program Development Objective

16. The long-term objective of the Sava-Drina River Corridor Integrated Development Program is to foster regional cooperation and unlock productive investments. This regional

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<sup>5</sup> Country partnership frameworks are available for Bosnia and Herzegovina, Montenegro, and Serbia.

program, through a range of studies, policy dialogue and investments would aim to strengthen capabilities and economic development of the riparian countries, by jointly selecting priorities for support in technical assistance, dialogue, institutional strengthening, and investment with focus on the accession process non-EU members and compliance agenda of new members.

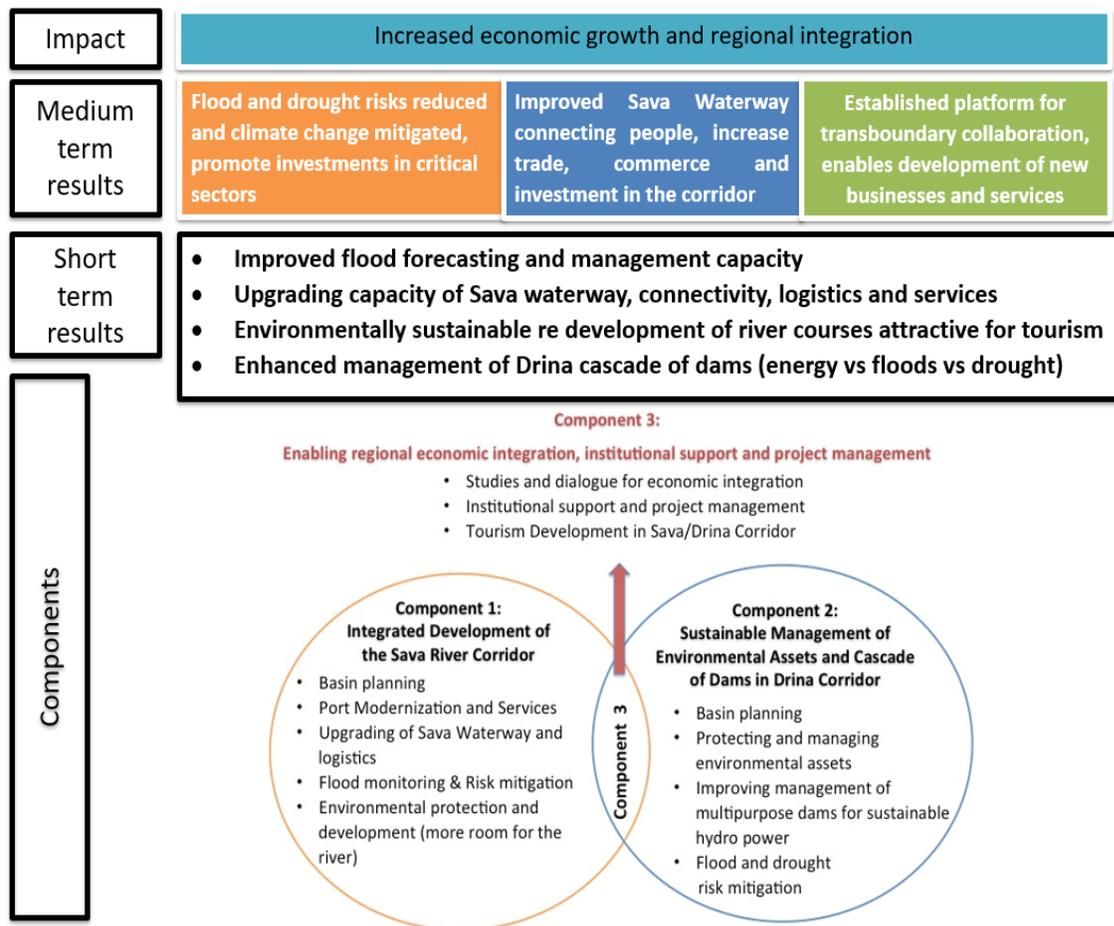
17. The Program specifically aims to support integrated management of the international Sava and Drina corridors to (i) improve the protection of selected communities in Bosnia and Herzegovina, Serbia, Montenegro, Croatia and Slovenia from floods, (ii) enhance the navigability of the river between the Belgrade and Sisak with priorities given to most critical sectors of the waterway, for example, between the ports of Belgrade (Serbia), Brčko (Bosnia and Herzegovina), Slavonski Brod(/Croatia) and Brod (Bosnia and Herzegovina), (iii) improve flood forecasting and management capacities among riparian countries, and enhance management and operations of Drina cascade dams for hydropower production as well as flood and drought management, and (iv) enhance nature values and tourism along the river in Bosnia and Herzegovina, Serbia, Montenegro, Croatia and Slovenia. The proposed interventions are selected because of their relevance in achieving one of the above goals, and/or complement or amplify the impact on the other goals.

18. The proposed activities of this program are an opportunity for the countries to work together towards a more economically productive management, with investments that would create jobs, improve navigability of waterways, protect the environment, and mitigate current and future water related risks such as floods and droughts. Further, deeper integration of water management across national borders, improved institutional coordination and capacity, establishing data sharing and more transparent operational procedures will allow other water-dependent sectors, like hydropower and irrigated agriculture to reduce risks, increase productivity and competitiveness, lower costs, capture synergies and economies of scale, and minimize negative externalities.

## **B. Key Results**

19. As a contribution to the regional objective of integration and economic growth, the Program aims to accelerate regional economic cooperation in the Western Balkans and help strengthen the institutions and procedures through which the Sava riparian countries collaborate. An overview of the Program's result chain is given in Figure 4.

20. Achievements of above proposed objectives should result in reduced flood damage, increased trade volume and national and cross-border investments, and the establishment of a regional tourism industry along the Sava-Drina Corridor. It will expand the development investments focusing on the Drina river corridor, its hydropower cascade optimization, and climate change adaptation. It also aims to improve the analytical and management capacity in each country as well as at the ISRBC. Perhaps just as important, the program will also be a relatively uncontroversial opportunity for the countries of the region to signal their ability and willingness to tackle trans boundary issues together.



### 3. Program Context

#### A. Concept

21. Based on the current capacities such as financial, institutional and resources availability, the Bank has conducted a need assessment to identify priority investment that would contribute to the economic integration agenda. Many relevant activities have been pre-identified<sup>6</sup> that together make up a coherent cross-boundary program that contribute to the stated objectives. Selected ‘priority’ sub-projects (works, equipment purchase, studies, and services) for Serbia, Bosnia and Herzegovina, Montenegro, Croatia and Slovenia are identified, distinguishing the likely financial implications for each country and Entity. This list was compiled after four months of consultations and field visits with the respective Ministries, Agencies, academic institutes and other stakeholders.

<sup>6</sup> A scoping mission was conducted between February 26 and March 9, 2018, and was followed by a consultation mission conducted between May 29<sup>th</sup> and June 11<sup>th</sup>, 2018.

22. The program tentatively comprises the implementation of 55 sub-projects with an estimated cost of €223 Million to be implemented in two phases. The first phase includes sub-projects with high relevance to the program objectives, high feasibility, and readiness (with detail designs and tender documents likely ready by Effectiveness): their implementation can likely be completed during the 2020-2022 period. A second phase features sub-projects of similar relevance and feasibility, but lower readiness: their preparation would be carried out during the first years of the program for their implementation to be completed in the period 2023 to 2026. While projects will be implemented at each of the five Sava/Drina river riparian countries, the collective benefits will outweigh costs of individual components.

## **B. Program Component**

### **Component 1: Integrated Development of the Sava River Corridor** (Total cost €146 million)

23. This component would support the integrated development of the Sava river corridor through a series of multipurpose investments to improve connectivity, trade and services along of the Sava River waterway, mitigate risks of flooding and to revitalize environmental assets. The component would finance investments in river training works to give more room for the river, renovation and upgrading of flood protection infrastructure, development of riverine flood plains and wetlands as flood attenuation areas, upgrading the capacity of the Sava waterway, improvement of port facilities and associated services. River basin planning and management would be supported by strengthening of institutional capacity, stakeholder's participation, enhancement of transboundary cooperation, knowledge sharing and joint studies.

24. **Sub-component 1.1 Strengthening the Sava river basin planning and development system.** The ISRBC Secretariat will be receiving support focused on the preparation of the Second Sava River Basin Management Plan, completion of the Flood Risks Assessment and Management Plans and the expansion of the existing hydraulic simulation model (HEC-RAS 5). A study on the alluvial aquifers in the Sava Basin will improve the understanding of ground water resources and their environmental status.

25. **Sub-component 1.2 Enhancement of ports facilities, services and logistics.** To establish a direct link between the proposed waterway infrastructure investments and the delivery of inland waterway transport and land-side transport and logistics services, the Program would finance the rehabilitation and expansion of port facilities and associated services like power supply and containers maneuvering infrastructure at the Brčko port (Bosnia and Herzegovina, Brčko District). Brčko is Bosnia and Herzegovina's only international port. In Sremska Mitrovica (Serbia) the port facilities would be improved by expanding the quay and platform, and dredging of the port basin and access. In Slavonski Brod (Croatia), the port facilities would be improved by constructing dangerous cargo terminals and passenger terminals. Similar interventions in other relevant ports will be considered (e.g. Gradiska, Šamac, Bosanski Brod, and Sisak). Development and training of port operators, shipping companies and waterway authorities and technical staff would be supported. These interventions may further be strengthened through measures to support the delivery of more competitive and reliable inland waterway freight transport services. Such

measures may address regulatory bottlenecks, such as barriers to entry/permanency and fair competition, or may support the sectoral management function through ICT tools, such as River Information and Vessel Tracking System upgrades.

**26. Sub-component 1.3 Multi-purpose Waterway Improvement.** This Sub-component would fund a dedicated de-mining operation along the Sava right bank in Bosnia and Herzegovina to ensure that works can proceed safely (unless this activity will be implemented prior to the start of the Program). The countries have developed and adopted a framework agreement to upgrade/improve the navigability of Sava from Belgrade to Sisak to bring this fairway to standards set in the European Code for Inland Waterways. This signed agreement, i.e. Framework Agreement on the Sava River Basin signed on December 3<sup>rd</sup>, 2002, sets the objective in term of capacity to be achieved by the riparian countries responsible of the development of the waterway in their jurisdiction and of the operation and maintenance. This program will contribute to the objective of that agreement by supporting the implementation of an initial set of works in selected sites where the navigation is impeded because of the lack of sufficient draft. The removal of these bottlenecks will increase the level of navigability from 100 to 300 day a year and during the lean season (summer), and benefit other sectoral purposes such as flood protection, eco-tourism, trade, and industrial development. This phased approach to the upgrading of the fairway is consistent with the financial capacity of the countries and with the parallel development of technical and economic studies and designs of future interventions. The increase of the demand of service and traffic will growth gradually along with the capacity of the shipping companies and the renovation of their fleets.

Left Bank	Rkm 594.0 to rkm 210.8 (Croatia)						Rkm 210.8-Rkm 0.0 (Serbia)						
Rkms	594		329.0 315.0		311.9 311.8		228 220		212.7 210.8		109.8 103.5	101.0 99.0	0
Activity			Dredging between Novi Grad and Jaruge		Dredging under bridge in Šamac		Dredging between Brčko and Gunja		Dredging between Račinovci and Vršani		Dredging in Klenak	Dredging in Šabac	
Right Bank	Rkm 594.0 to rkm 515.36 (Croatia)	Rkm 515.36 to Rkm 346.75 BIH (Republic of Srpska)	Rkm 346.75 to 315.0 BIH (Federation of BiH)	Rkm 315.0 to 312.2 BIH (Republic of Srpska)	Rkm 312.2 to Rkm 239.0 BIH (Federation of BiH)	Rkm 239.0 to Rkm 212.2 BIH (Brčko District of BIH)	Rkm 212.2 to Rkm 178.0 BIH (Republic of Srpska)	Rkm 178.0 to Rkm 0.0 (Serbia)					

Figure 4: Breakdown of dredging activities in Sava River, by Jurisdiction and riparian country

27. In this context the activities financed by this program include dredging and river training works that would aim at maintaining the navigability downstream of Brčko at Class Va, returning the navigability upstream to Sisak from Class III to IV, and maintaining the navigability between the border, Brčko (Bosnia and Herzegovina) and Novi Grad (Croatia/Bosnia and Herzegovina) at Class IV. This would enable vessels up to 3,000 DWT in capacity to transit between Belgrade and Sremska Mitrovica, and vessels up to 1,500 DWT in capacity to transit the rest of the corridor to and from Novi Grad. Main dredging and river training would take place in Serbia in the three constrained zones of at Šabac, Sremska Mitrovica, Klenak, and the mouth of Drina river. Dredging and river training will also be carried out along selected stretches on the Sava that are shared by Croatia and Bosnia and Herzegovina, between Novi Grad (BiH) and Jaruge (Croatia), Brčko-Gunja, Šamac and Račinovci-Vršani. River signalization would be improved as well. Location of dredging works and river training works are depicted in the following Figure 4.

28. **Sub-component 1.4: Flood protection and forecasting.** The sub-component would finance the implementation of a second phase of the Flood Forecasting and Warning System operated by all hydromet organizations of the riparian countries and ISRBC Secretariat (financed by WB-WBIF project) and improvement of Sava GIS/HIS as a Data Exchange Platform. This second phase will be improving/enhancing the common Sava FFWS platform and integrating tools aimed to disaster (flood) risk reduction, and developing the tools and products for Flood Warning Process tailored to the user needs. This sub-component would finance multipurpose intervention to strengthen and rehabilitate flood protection infrastructure, raise dyke and embankments in Serbia and Bosnia and Herzegovina while at the same time, enhance environment, biodiversity, and navigability of the river basin. In Serbia, this would refer notably to stretches near New Belgrade, Progar-Kupinovo, Klenak, Popova Bara and Sremska Mitrovica on the left bank and Šabac, in Macvanska Mitrovica and Obrenovac (covering infrastructure protecting the town, the Tesla power plant and the open-pit coal mines near the confluence of Kolubara and Sava rivers) on the right bank. In Sremska Mitrovica, Sabac and New Belgrade mobile screens would be installed.

29. **Sub-component 1.5: Environmental management and climate change adaptation.** The Program would support re-vitalization of selected protected areas of ecological significance to the Western Balkans and belong to the European Natura2000 network and/or are Ramsar sites. A study about the utilization of natural areas and wetlands as on the retention areas along the Sava River. This nature based solutions using wetland and flood plains for attenuating flood peaks and to revitalize habitats and biodiversity, and promote eco-tourism will give more space to the river during flood periods moving away from traditional infrastructure based solutions to flood risk management. With this objective the Program would support the restoration of the Bardaca wetland, Ramsar site of 3,500 ha.

30. In the same fashion, one of the largest oak forests in the region located in the border between Croatia and Serbia could be developed as a nature based flood retention area. In Serbia side, the Morovic riverine forest (9,000 ha) could be arranged to receive controlled water overflow during April-May (Comp. 1). The simultaneous controlled recharge of the shallow groundwater

aquifer would ensure the sustainability of the large oak forest and its associated plant and animal biodiversity. The Sava dyke would be refurbished with controlled overflow weirs as well as gates and pumping station (on the Bosut river) to evacuate excess water, while the forested area would be arranged in 2-3 cassettes by constructing low levees (raised roads) to contain the water and direct it to low-lying absorption ponds. In the Croatian side, in Slavonia, the Spačva riverine forest (30,000 ha), with comparable features, would be managed in similar fashion, enhancing the touristic appeal and nature value of the wider Slavonia region.

31. With the support of EC regional IPA funds (INTERREG) the Governments of Croatia and Serbia are preparing a feasibility study to evaluate options for developing this integrated intervention in Morovic and Spačva riverine forests. Based on the results of this large study, to be completed by December 2020, a multiannual program of investments in the area would be prepared and the implementation would be initiated as part of the Batch II of investments. This subcomponent will also finance the set-up of a groundwater monitoring network in BiH and studies to assess and model sediments transport in the Sava River Basin to further support environmental management and planning. Lastly, a climate change adaptation study at the Sava River Basin will also be prepared.

## **Component 2: Sustainable Management of Environmental Assets and Cascade of Dams in Drina Corridor** (Total cost €65.1 million)

32. This component would support the integrated development in the Drina river corridor through multipurpose investments to enhance management and storage capacity of the Drina cascade of reservoirs to reduce risk of flood and drought, to maximize hydropower output, and to protect and develop environmental assets of global value. This component would facilitate the implementation of actions, management measures and investments identified by the *Drina Strategic Action Plan* being prepared under the ongoing *Western Balkans GEF-SCCF Drina River Basin Management Project*. This includes measures to enable adaptation to climate change focused on the development of sustainable irrigated agriculture to reduced deforestation and land degradation, on the optimization of hydropower generation to reduce emissions, and on the development and protection of groundwater, being the main source drinking water supply.

33. **Sub-component 2.1: Enhance hydropower generation, mitigate climate change impacts and risks while enhancing navigation and agricultural productivity.** The on-going GEF-SCCF-financed Drina River Basin Management project is conducting studies that will specify flood protection, bank stabilization, drainage and river training works and optimization of hydropower generation and reservoir management in the Drina Corridor. The optimization of the operation of the cascade of dams in Drina river is being further supported by a TA program implemented jointly with the Energy GP (financed by ESMAP) that would contribute to the identification of measures to improve hydropower production. This sub-project would finance the preparation of detailed designs of these measures and works during the first years of the Program and their implementation in the second half of the Program. These would include flood protection works in the lower Lim River in Serbia and Upper Lim River in Montenegro, river training in Novo Goražde and Goražde city, and irrigation works in Montenegro. Separately, flood protection

and drainage of the Macva plain aim at protecting the fertile agricultural lands and settlements from flooding and high groundwater tables. River training works near the Ušće Drine at the mouth of Drina river will take place, which is a major bottle-neck for navigation and for flood wave release. This Sub-component would support the upscaling of successful pilots of the GEF Drina Project and implementation of the Strategic Action Plan for the Drina Basin. In addition, due to a transboundary nature of main watersheds in the region, there is a clear need to complement existing project-oriented hydropower studies with a river basin-wide assessment. Such an assessment would focus on the sustainability and optimization of hydropower development among all stakeholders, considering multi-purpose water use and the cumulative social and environmental impacts of these activities.

34. **Sub-component 2.2: Protecting and managing environmental assets in Drina river corridor.** The sub-component will finance studies, surveys, consultations and preparation of detailed design of interventions related to the development and management of environmental assets, protected areas and natural sanctuaries along the Drina Corridor.

**Component 3: Enabling regional economic integration, institutional support and program management** (Total cost € 12.5 million).

35. This component will support 1) policy dialogue, consultations, preparation of plans and studies, and investments to strengthen the nexus between water services and connectivity with the regional development and economic integration objectives of the Sava and Drina Corridor; 2) institutional capacity building and inter-sectoral coordination and management at national and regional level (International Sava River basin Commission); 3) operational costs, consultancies and non-consultancy services, goods and works required for the establishment and operation of the Regional Coordination Steering Committee, and regional and national PIUs and PITs; and 4) planning and development of tourism in the Sava-Drina corridor.

36. **Sub-component 3.1: Studies and dialogues that enables regional economic integration.** This Sub-component will finance policy dialogue, consultations, preparation of plans and studies to strengthen to nexus between water services, (environmental protection, and flood risk reduction, improved connectivity) and the enhancement of economic integration and development enabling the increase of trade, commerce, industries and tourism along the Sava and Drina Corridor. This sub-component would finance capacity building activities to support the creation of working groups, economic councils and group of interest willing to develop specific pilot projects, organize fairs, training events and study tours to learn about regional development and integration of economic activities in corridors of similar characteristics. The Component will consider financing a Small Grants Program to promote innovation and cooperation projects proposed by chambers of commerce, NGO and interest groups from riparian countries. The ultimate objective of this sub-component would be to promote participation of private sector and civil society to better coordinate and prioritize investments and activities to enable further economic development in the basin, increase trade, reduce costs and flood risks in an environmentally sustainable manner.

37. **Sub-component 3.2: Institutional support and program management.** The Sub-component will finance activities to increase institutional capacity and inter-sectoral coordination in the participating countries to ensure more efficient decision making and program management at regional level, and notably in the two countries that likely would operate in direct partnership with the World Bank, i.e. Serbia and Bosnia and Herzegovina. The Program would strengthen the capacities of the countries and the ISRBC to carry out Integrated Water Resources Management compliant with the EU Water Framework Directive, the Flood Management Directive and other relevant Directives. This sub-component will also finance operational costs, consultancies and non-consultancy services, goods and works required for the establishment and operation of the PIU and PIT. This includes staff costs of specialists on technical aspects, procurement, safeguards, financial management, monitoring and evaluation, communications and media. Lastly, this subcomponent will finance additional studies, public consultations, preparation of detailed designs for follow up investments in prioritized by the Strategic Action Plan prepared under the GEF Drina RBMP.

38. **Sub-component 3.3: Planning and development of tourism in the Sava -Drina Corridor.** Master Plans would be financed to define the strategy to attract cruise ships and strengthen eco-tourism and enhance access for tourists in Serbia, Bosnia and Herzegovina and Croatia. A cycling path along the Sava will be funded to support regional eco-tourism. Branding of the pristine Drina sections will be considered for tourism development. Pontoon network will also be setup for anchoring touristic vessels along the Sava-Drina Corridor.

#### 4. Value added of Bank's support

39. The Bank's Water Resources Policy (1993) and Strategy (2004) emphasize the focus and experience comparative advantage of the WB in integrated water resources management (IWRM) which includes flood protection and management. The concept of IWRM proposes that, under conditions of growing scarcity of water and land resources (and increased likelihood of downpours), sustainable and cost-effective solutions necessarily must be cross-sectoral and build with nature. Such operations are knowledge and dialogue-intensive and require long time horizons to identify meritorious investments that are broadly supported and have clear economic significance. The WB has a track record of promoting IWRM initiatives globally (Indonesia, China, Argentina, Mozambique, etc.), and in Central Europe and ECA, with several river basin management and resource management projects on-going. In ECA, the Bank has supported several flood management operations and it has accumulated the knowledge on the policy, strategy, capacity development and investments for complex operations such as for flood management. In Croatia, Serbia, Bulgaria, Bosnia and Herzegovina and Albania, flood management is at the core of several operations. In Poland, the Bank is currently supporting the complex Odra and Vistula River Flood Protection Project which is being implemented under the overall regulatory guidance of the EU Water Framework and the Flood Directives. While the European Commission is better placed to manage the regulatory aspects of flood management, the Commission and the prospective Program co-financiers, i.e. the CEB and the EIB, have confirmed to prefer technical and operational leadership by the WB.

40. The Bank has also been involved since 2008 in assessing the transportation and navigational challenges facing the Sava river and its tributaries, in collaboration with ISRBC. During this period, the Bank has engaged the riparian countries in support of potential investment financing and implementation approaches. It has also led analytical work to better understand the demand-supply underpinnings and long-term prospects of regional connectivity improvements, including the Regional Balkans Infrastructure Study (REBIS) Update of 2015. As such, the Bank brings to the proposed Program a nuanced understanding of the economic potential of the target corridor and of the efforts to revitalize it since the early 2000s. The Bank has pursued integrated inland waterway transport and economic development in many countries, such as Vietnam, Bangladesh, Colombia, India, and China, and can bring to the program the lessons learned from this experience. The Bank's approach to corridor development, focused on impacts beyond the development of infrastructure, will inform the preparation of the proposed Program.

## **5. Overall Risk and Explanation**

41. The overall risk to achieve the development objective is considered Substantial. Specific risks include (1) government counterparts not seeing the value added of this work thus unwilling to coordinate and collaborate during the program implementation process, (2) delays caused by the disagreements between countries and/or Agencies within one country, regarding prioritization, design and funding of activities that require consensus, and (3) delays or implementation complications arising from the non-synchronized nature of the political cycles among the countries such as elections and policy decision-making.

## **6. Economic considerations and methodology to be applied in the evaluation**

### **A. Program's development impact in terms of expected benefits and costs**

42. The Sava River represents an untapped asset with the potential to generate significant economic activity through trade, tourism, environmental benefits, and risk reductions. Transport along the river, which in the 1980s supported the trade and transfer of 9.5 M ton of goods, has declined precipitously. Annual freight carried has declined from 5.2M ton in 1990 to 0.5M ton in 2012. This decline in trade is partially due to the breakup of Yugoslavia and lack of integration and trade between riparian nations. However, it is also due in large part to reduced navigability of the river, which now contains several bottlenecks which prevent medium or large cargo ships from traversing much of the river. This lack of navigability has led to a decline in port investments, and a movement of shipping lanes to roads and rails which are costlier and incur greater environmental and other external costs. A feasibility study conducted in 2008 which analyzed the impact of similar river transport activities proposed in this Concept Note found strong economic justification. Since this feasibility study, transport along the river has increased, implying greater cost-saving benefits to the upgrading of navigability of the Sava waterway. During preparation, the economic analysis will update this study based on new proposed activities and changing economic realities and a deeper incorporation of shipper and service provider inputs into both the assessment of benefits and costs and on the design of the proposed interventions.

43. The economic viability of inland waterway transport infrastructure investments along the Sava corridor is likely to hinge upon the corridor's ability to capture bulk (primarily) and containerized (secondarily) freight transport demand currently served by other modes. After many years of neglect, inland waterway transport has lost competitiveness, and shippers' perceptions of the cost, time, and reliability dimensions of inland waterway itineraries are likely to further exacerbate improvement efforts. As such, the economic analysis to be conducted during program preparation will place emphasis on developing realistic quantitative assessments of existing demand retention, new demand capture, and modal shift. This will require an understanding of shipper decision making practices, transport carrier and logistics service provider practices, commodity characteristics, and the role of public sector in supporting the delivery of transportation services across modes. While past studies suggest significant untapped potential for inland waterway transport, assessments of modal shift will need to be robust, and project design will need to provide a market-tested integration of infrastructure development, service delivery, and regulatory improvements.

44. The 2014 flood event of the Sava and Drina rivers have been analyzed with respect to loss of life and economic losses and damages. It is estimated that in Serbia, Bosnia-Herzegovina, and Croatia, the May 2014, 1/100-year flood in the Sava Basin affected 2.98 million people, caused the evacuation of 137,000 people, incurred 79 casualties, and total damage and losses exceeded 3.8 billion euro. In addition, smaller floods in 2013, 2010, and in years prior also cause considerable damage to infrastructure, homes, and economic losses. The economic evaluation will study how high flood risk levels affects investments along the river corridor, preventing it from achieving its full economic potential particularly related to the tourism industry.

45. The program investments seek to provide significant environmental benefits, including the revitalization of protected areas of ecological significance, and the creation of nature based flood retention areas to protect valuable forests. Quantifying the largely non-pecuniary benefits of environmental protection is not trivial, as the services they provide are not traded in markets. The tourism sector is one area where environmental benefits can accrue and be accounted for quantitatively. In other cases, the economic analysis will rely on benefits transfer approaches, applying estimated benefits of similar environmental protection activities. Finally, where benefits cannot be quantified, the analysis will identify benefits qualitatively and conduct a cost-effectiveness analysis.

46. Finally, program activities also seek to reduce emissions through the optimization of hydropower generation. Reducing GHG emissions is a global, positive externality which the World Bank has recently begun to quantify and account for its economic analysis of IPFs. A 'shadow price', equivalent to the estimated cost per ton of CO<sub>2</sub>e needed to achieve the core objective of the Paris Agreement of keeping temperature rise below 2 degrees, will be applied to the estimated reduction in emissions due to program activities. Further, where pecuniary benefits to optimized hydropower generation can be estimated, these will be applied in the economic analysis.

## **B. Rationale for public sector provision/financing, if applicable**

47. Many of the activities proposed under this program largely represent investments typically relegated to the state, while some other might attract commercial or private financing. Benefits from reducing transportation costs and risks from floods, or improving environmental and tourism assets conditions are widely disbursed over large geographic areas, millions of individuals, and hundreds of firms. Therefore, there is little individual incentive for individuals or firms to invest in these activities on their own, as there no prospect for recouping investment costs. These are classic cases where the relationship between service provision and the consumer of services cannot be individualized, or in the case of environmental benefits are non-pecuniary, and is therefore operated by the public sector where costs can be recovered through land and residential taxes. On the other hand, the development of financially viable investments such as hydropower or port optimization, could attract private financing. During preparation, distinction will be sought between the responsibilities of the public and private sector notably for navigation and shipping as part of port operation and assets are under the responsibility of private-sector operators.

## **C. Methodology/scope and next steps**

48. Separate methodologies will be used for estimation of economic benefits for the different components. The flood protection methodology will be based on estimating economic and financial benefits from reducing risks from a 2014- sized flood, which has been categorized as a 1 in 100-year event. Using a hydrological/hydraulics and digital elevation model, status quo flood plains will be compared against updated flood plains after investments to estimate regions that will be protected. Damages and losses will be estimated in the regions to arrive at an ERR of the investments. Data is being collected on property values, economic activity, and populations along the Sava, as well as damage estimates from the 2014 floods. Damages from smaller but more frequent floods will also be modeled and included as far as possible.

49. The methodology for estimating benefits from the transportation component will be based on updating the feasibility studies completed in 2008. The economic analysis in this feasibility study estimated benefits from reducing the cost of transporting goods around the network. The study also estimated external benefits—reduced congestion on the roads and motorways, fewer accidents, lower emissions of greenhouse gasses and local pollutants per ton-km transported, less noise, and smaller costs for up- and downstream processes). Activities and investments will be compared, and assumptions and parameters will be updated based on current traffic and economic activity. Data collection is currently underway to identify the flows of traffic into, out of, and between ports. Similarly, the methodology will evaluate the potential impact of measures (improvement of management and investments in infrastructure) to be identified by the GEF Drina RBMP to improve the operation of the cascade of dams in Drina to reduce flood risks and to maximize energy production.

## 7. Program Financing

50. The Program would be financed from different complementary sources. Serbia, Bosnia and Herzegovina and Montenegro, which would finance their activities through their respective national budgets, are likely to seek the use of IPA and other EU grant funding (Regional IPA, CEF and/or WBIF). Croatia and Slovenia, being an EU Member State, are likely to finance the associated activities on their territory under their national budget and/or from EU structural funds.

51.

52. Table 1 and 2 summarize the tentative costs by sector and country, as well as separately for Bosnia and Herzegovina. While multiple sources will be leveraged, it is expected that a World Bank loan may be sought to cover the remaining financial gap. The financial gap will be assessed by identifying total Program costs and reviewing country's budget allocations as well as other financing sources from EU (i.e. IPA pipeline, European IFIs, etc.) and elsewhere like donor's agencies and IFI operating in the Western Balkans (EBRD, CEB, etc.).

53. During preparation the Bank will collaborate with the countries to establish a secure financing framework to execute the Program. The collaboration of IFC will be sought to evaluate the participation of private sector in the form of concessions and other forms of Public Private Partnerships well known in the Region. This would be the first choice for some specific activities, subsectors and activities like transport, energy, logistics, tourism, and O&M.

54. The eligibility criteria and availability of such funds will be assessed during program preparation. Some of the sub-projects might be eligible for potential EC funding, as follows:

- River Basin Management Plans, consultancies, studies, strategies, TA, preparation of detail design of sub-projects: Regional IPA, national IPA allocations and WBIF;
- Dredging and river training works in Serbia, Croatia, and Bosnia and Herzegovina; port development in Brčko District; and studies: CEF;
- Works and purchase of equipment: national IPA allocations, Regional IPA.

55. During Program preparation the most appropriate form of administration of the co-financing sources will be decided upon. Some of the studies and technical assistance have a stand-alone nature and could be financed in parallel-finance mode. However, most of activities are sequential or otherwise depend on each other, such as design preparation followed by procurement and implementation for works, and it is advisable to combine their co-finance in a Trust Fund administered by the Bank. Such arrangement was applied in the 2013 Trust Fund for water investments for Bosnia and Herzegovina, and it is governed under an existing EC-World Bank Agreement. Croatia, on the other hand, would likely fund its sub-projects under its own budget and Cohesion funds; such funding can be best be arranged as parallel financing.

Table 1 Overview of costs (€ million) per component and country

Component Name	BIH	HRV	MNE	SER	SVN	Grand Total
<b>Component 1: Integrated Development of the Sava River Corridor</b>	<b>46.27</b>	<b>31.00</b>	<b>3.51</b>	<b>63.31</b>	<b>1.91</b>	<b>146.01</b>
Sub-Component 1.1: Consolidating the Sava river basin planning and development system	0.90	0.90	0.90	0.90	0.90	4.48
Sub-Component 1.2: Port Rehabilitation and Expansion	6.24	9.94	0.00	9.00	0.00	25.18
Sub-Component 1.3: Waterway Improvement	21.10	13.35	0.00	3.18	0.00	37.63
Sub-Component 1.4: Flood monitoring and management	14.82	0.30	0.30	43.71	0.30	59.43
Sub-Component 1.5: Environmental management and climate change adaptation	3.22	6.52	2.32	6.52	0.72	19.29
<b>Component 2: Sustainable Management of Environmental Assets and Cascade of Dams in Drina Corridor</b>	<b>24.62</b>	<b>0.00</b>	<b>13.87</b>	<b>26.62</b>	<b>0.00</b>	<b>65.11</b>
Sub-Component 2.1: Managing climate change impacts and risk mitigation	24.42	0.00	13.67	26.42	0.00	64.51
Sub-Component 2.2: Protecting and managing environmental assets in Drina river corridor	0.20	0.00	0.20	0.20	0.00	0.60
<b>Component 3: Enabling regional economic integration, institutional support and project management</b>	<b>2.87</b>	<b>2.52</b>	<b>2.42</b>	<b>2.67</b>	<b>2.02</b>	<b>12.50</b>
Sub-Component 3.1: Studies and dialogues that enables regional economic integration	1.10	1.10	1.10	1.10	0.60	5.00
Sub-Component 3.2: Institutional support and project management	1.00	1.00	1.00	1.00	1.00	5.00
Sub-Component 3.3: Planning and development of tourism in the Sava Corridor	0.77	0.42	0.32	0.57	0.42	2.50
<b>Grand Total</b>	<b>73.76</b>	<b>33.52</b>	<b>19.80</b>	<b>92.60</b>	<b>3.93</b>	<b>223.62</b>

Table 2 Bosnia & Herzegovina - Overview of costs (€ million) by Entities and Brčko District \*

Component Name	BD	FBiH	RS	Total
<b>Component 1: Integrated Development of the Sava River Corridor</b>	<b>12.82</b>	<b>19.71</b>	<b>13.74</b>	<b>46.27</b>
Sub-Component 1.1: Consolidating the Sava river basin planning and development system	0.30	0.30	0.30	0.90
Sub-Component 1.2: Port Rehabilitation and Expansion	6.24	0.00	0.00	6.24
Sub-Component 1.3: Waterway Improvement	2.35	15.45	3.30	21.10
Sub-Component 1.4: Flood monitoring and management	3.42	3.46	7.94	14.82
Sub-Component 1.5: Environmental management and climate change adaptation	0.51	0.51	2.21	3.22
<b>Component 2: Sustainable Management of Environmental Assets and Cascade of Dams in Drina Corridor</b>	<b>0.00</b>	<b>10.94</b>	<b>13.69</b>	<b>24.62</b>
Sub-Component 2.1: Managing climate change impacts and risk mitigation	0.00	10.84	13.59	24.42
Sub-Component 2.2: Protecting and managing environmental assets in	0.00	0.10	0.10	0.20
<b>Component 3: Enabling regional economic integration, institutional support and project management</b>	<b>0.94</b>	<b>0.99</b>	<b>0.94</b>	<b>2.87</b>
Sub-Component 3.1: Studies and dialogues that enables regional	0.37	0.37	0.37	1.10
Sub-Component 3.2: Institutional support and project management	0.33	0.33	0.33	1.00
Sub-Component 3.3: Planning and development of tourism in the Sava Corridor	0.24	0.29	0.24	0.77
<b>Grand Total</b>	<b>13.76</b>	<b>31.64</b>	<b>28.37</b>	<b>73.76</b>

\*BD – Brčko District; FBiH - Federation of Bosnia and Herzegovina; RS – Republika Srpska

## 8. Governance of the program and implementation arrangements

56. **Regional Strategic Coordination level and the role of International Sava River Basin Commission (ISRBC):** Based in the considerable experience accumulated in the ISRBC and at the Bank in the joint implementation of regional projects in the Balkans, a program of this magnitude, would require the establishment of a *Sava/Drina Development Council* with a policy advocacy role with the participation of city mayors, private sector representatives, NGO's and national political authorities, For the facilitation of the implementation of measures would require the a governance system at regional level structured in three layers as follows. At Ministerial Level a *Program Steering Committee* will oversee, discuss and prioritize strategic policy decisions at basin level to enable implementation. At Agency Level a *Regional Program Coordination Unit (RPCU)* composed by the head of the agencies and sector entities in charge of the implementation of sub-projects (regional and national) will meet 3-4 times per year to coordinate key decisions that condition implementation. The regional governance structure will be complemented by Regional Working Groups Level constituted by experts from the riparian countries agencies that will review and discuss on a regular basis annual investment plans and facilitate coordination and monitoring development processed. These three instances will be the primary source of information and coordination among riparian countries in the implementation of large subprojects and sector studies that involve more than one country. This regional facilitation will be crucial to negotiate financial assistance to supplement existing national budget allocations, EC funding (IPA, cohesion funds, European IFI loans) in areas of planning, infrastructure and institutional strengthening. The *RPCU* will function as an umbrella organization to implement their projects and coordinate activities at regional level through its relevant working groups. Additional seat for Montenegro will be included.

57. Selected regional activities would be implemented by the **ISRBC Secretariat**. In the Legal Agreements governing the program implementation, the respective implementing agencies could be specified with the objective to reduce the number of implementing agencies and concentrate contracts in large packages. At the same time, coordination among implementation agencies will be provided to ensure multi-purpose nature of this potential program.

58. **Implementation, Management and Technical Support at National Level:** Due to the multisector nature of the sub-projects, the implementation in each country and entity (Slovenia, Croatia, Serbia, Montenegro and in Bosnia and Herzegovina, in Brčko District, Republika Srpska and Federation of Bosnia and Herzegovina) would require an additional coordination effort between different ministries (water, agriculture, environment, energy, regional development, transport and finance), and jurisdictions (central government, provinces, cantons, municipalities and water, inland navigation and energy agencies), NGO and private operators. The activities would be conducted by program implementation units at central ministries within each country, and various program implementation teams. The need of assistance of the Bank would vary because of resources available in each specific country and organization, and on the level of readiness of the interventions proposed by the countries.

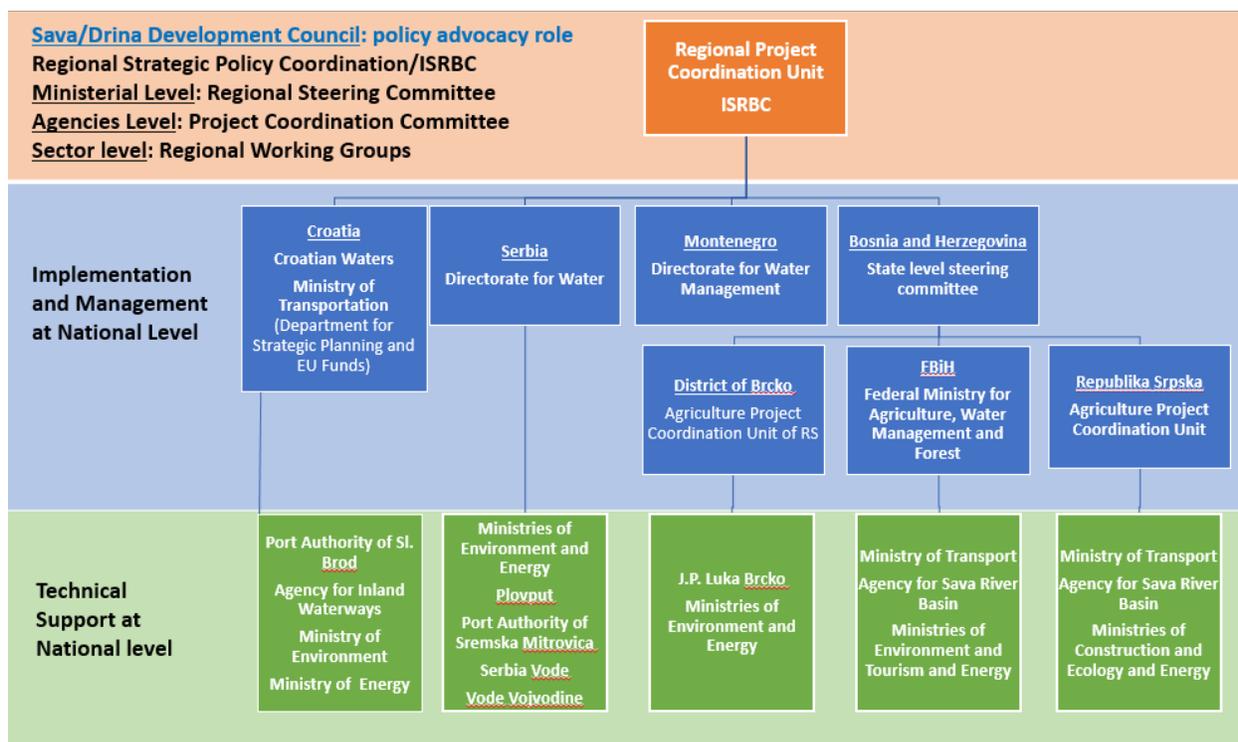


Figure 4: Proposed governance arrangements for Croatia, Bosnia and Herzegovina and Serbia

59. In Bosnia and Herzegovina, the implementation management unit will be the state coordination steering committee and implementation agency to be established in MOFTER. In Republika Srpska, implementation management will be based at the existing Agriculture Project Coordination Unit (APCU) at the Ministry of Agriculture, Forestry and Water Management with three implementation teams at the Ministry of Transportation, Agency for Sava River Basin, and Ministry of Construction and Ecology. For FBiH, implementation management team will be the Ministry for Agriculture, Water Management and Forest with three technical support agencies at the Ministry of Transport, Agency for Sava River Basin, and Ministry of Environment and Tourism. For Brčko District, these activities will be supported by APCU in Republika Srspska and assisted in the implementation harbor upgrading contracts by the operator J.P. Luka Brcko.

60. In Croatia, two implementation management teams will be set up at Hrvatske Vode and the Ministry of Transportation. Technical support agencies will be set up in the Port Authority of Slavonski Brod, Ministry of Environment, and Agency for Inland Waterways. For Montenegro, one national implementation management unit is to be set up in the Directorate for Water Management (DWM) of the Ministry of Agriculture and Rural Development (MARD). In Serbia, one implementation management team as the national coordination steering committee will be set up at the Directorate for Water (DW) which is part of the Ministry of Agriculture and Environmental Protection (MAEP). Technical support agencies will be set up in Plovput, Port Authority of Sremska Mitrovica, Serbia Vode, Vode Vojvodine and Ministry of Environment for program implementation.

## 9. ANNEX 1: Mapping of Sava and Drina River Corridor Water, Energy, Agriculture and Tourism activities.

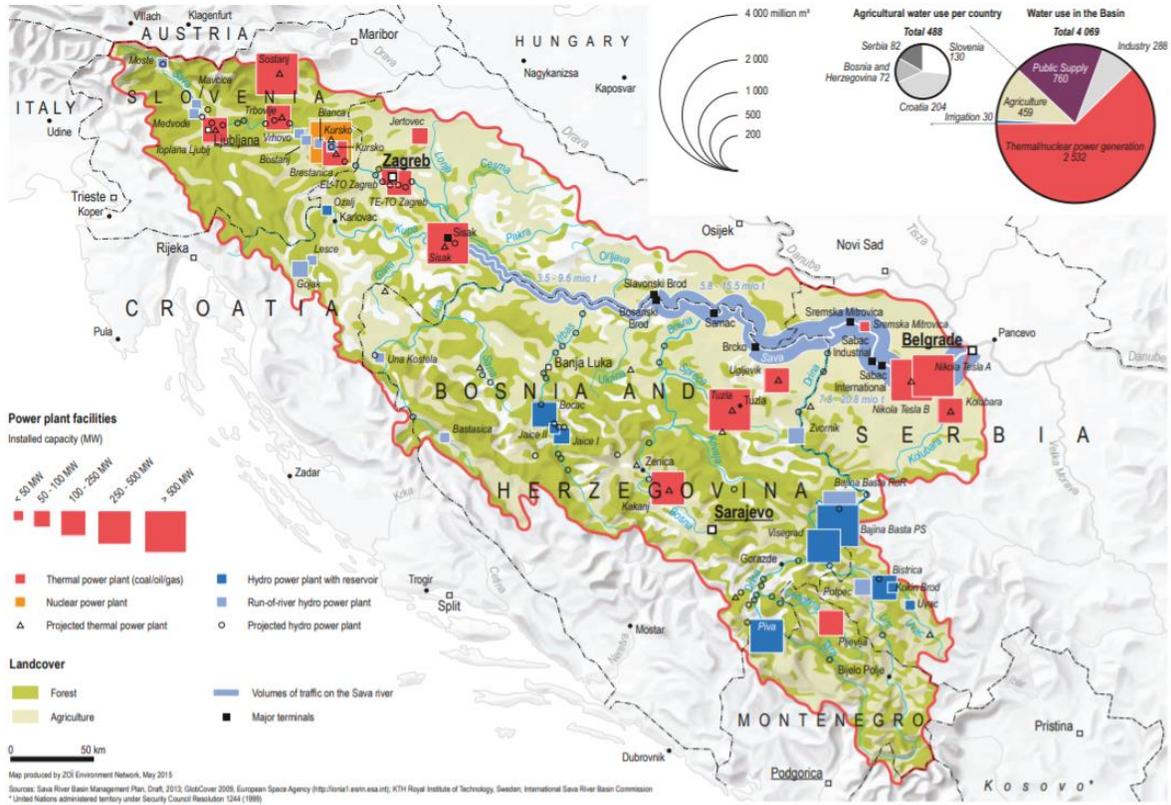


Figure Annex 1-1: Energy, waste, agricultural land in Sava River Basin. Source: UNECE (2016)

