

WORLD BANK - SUPPORT TO WATER RESOURCES MANAGEMENT IN THE DRINA RIVER BASIN

**Regional Workshop on
Strategic Planning in Water Sector
3-4 June 2015**

**World Bank Drina Project
Status Report**

David Heywood – Team Leader



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Contents for Presentation

- Project Background
- Project Objectives
- Approach
- Main Outputs/Deliverables
- Current Status
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PROJECT BACKGROUND



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DRINA BASIN FACTS

Catchment area 19,680 km²

River is 346 km long

largest tributary of the Sava

Home to ~1 million people

3 countries- BiH, Montenegro, Serbia

(Albania <1% of basin)



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**BOSNIA AND HERZEGOVINA****7,250 km² Area**

- 6,410 km² RS
- 840 km² FBiH

520,000 People

- 450,000 RS
- 70,000 FBiH

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**SERBIA****6,000 km² Area****300,000 people**

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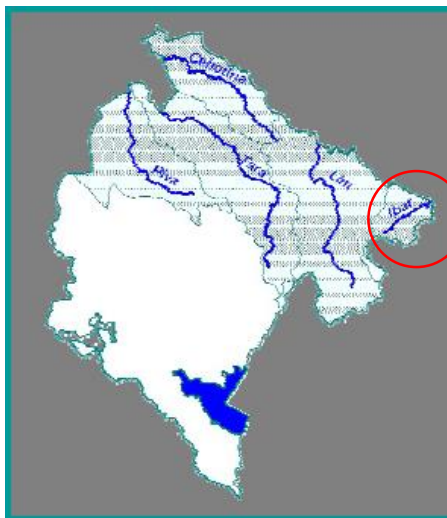
**MONTENEGRO****6,200 km² Area****150,000 people**

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Black Sea Basin

- Four main rivers form the Drina Basin
- Each exits MNE separately: Piva, Tara, Čehotina and Lim
- River Ibar is flowing out into the river Zapadna Morava.

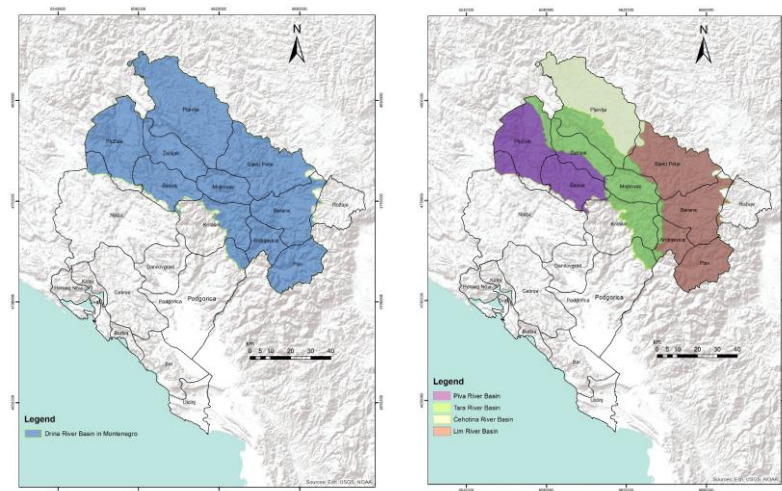
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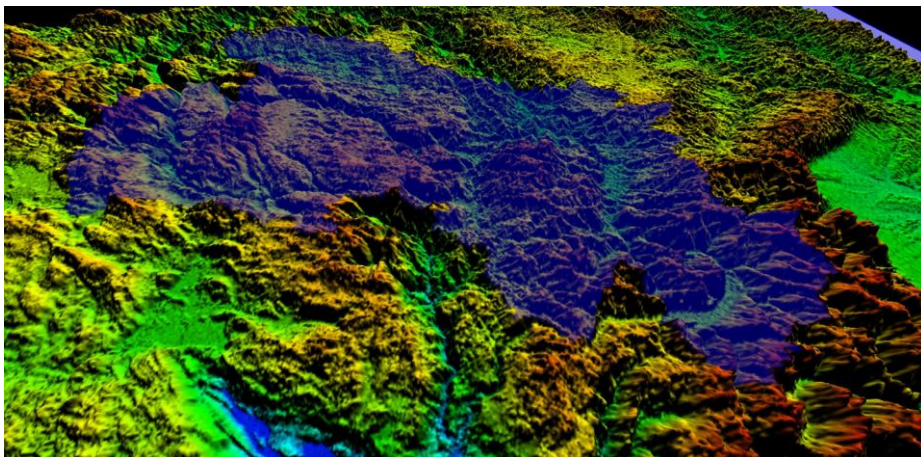
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Drina Basin



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Background

- Drina Basin has a variety of water uses; hydropower is dominant, but also important for domestic use, fishing, irrigation and for maintaining biodiversity
- Also known for floods and droughts
 - Most recent floods 2010 and 2014
 - characterised by extreme discharge variability
- Recurrent seasonal droughts are common
- Poor cooperation between power companies and water management sector



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PROJECT OBJECTIVES

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Overarching objective for the project

Support to more effective water resources management in the Drina Basin taking into consideration:

- Flood and drought mitigation,
- Sustainable water use and
- environmental management,

All undertaken within the framework of IWRM, whilst ensuring effective stakeholder consultations and public participation.



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Major Outcomes

1. Better decision making and management in DRB as a multi purpose water resource
2. More effective application of EU WFD regulations and RBMPs
3. Enhanced dialogue and coordination



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There are a number of key issues that this Project needs to consider:

- The wide variety of competing water uses
- The River maintenance in general
- The extremes of floods and droughts that are exacerbated by climate change
- Weak cooperation from the riparian states within the Basin
- The urgent need for Integrated Water Resources Management (IWRM) and the need for convergence with EU water directives e.g. WFD, Wastewater Treatment Directive (UWWTD), Drinking Water Directive (DWD), Flood Directive (FD), Nitrates Directive (ND), Marine Directive (to a smaller extent) etc.
- Improved coordination for data collection, control and analysis
- Improved monitoring



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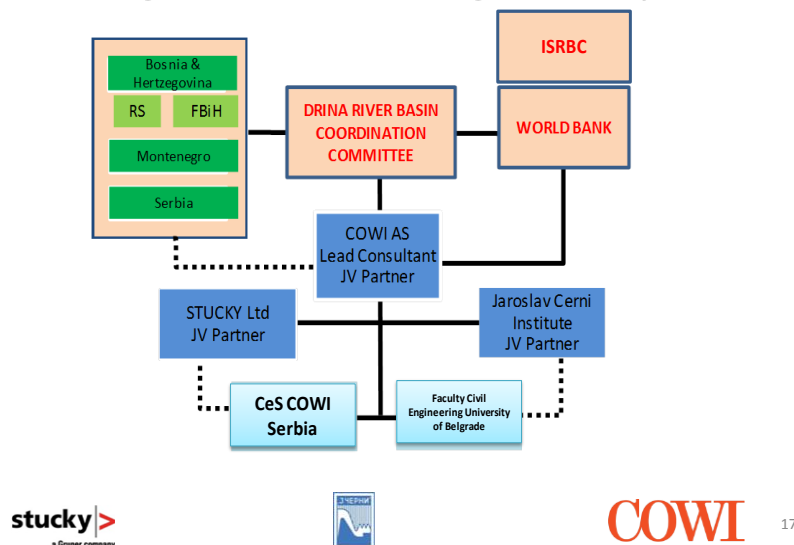
APPROACH



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Organisation / Organizacija



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CO-ORDINATION COMMITTEE

Bosnia and Herzegovina

- Ministry of Foreign Trade and Economic Relations (MOFTER) covering BiH overall at Sarajevo, **CHAIRMAN**
- Ministry of Agriculture, Forestry and Water Management (MAFWM) covering FBiH at Sarajevo
- Ministry of Agriculture, Water Management and Forestry (MAWMF) covering RS BiH at Banja Luka
- Sava River Watershed Agency covering FBiH at Sarajevo
- Public Institution "Waters of Srpska" covering RS BiH at Bijeljina
- Federal Hydro-meteorological Institute covering FBiH at Sarajevo
- Hydro-meteorological Institute of RS at Banja Luka

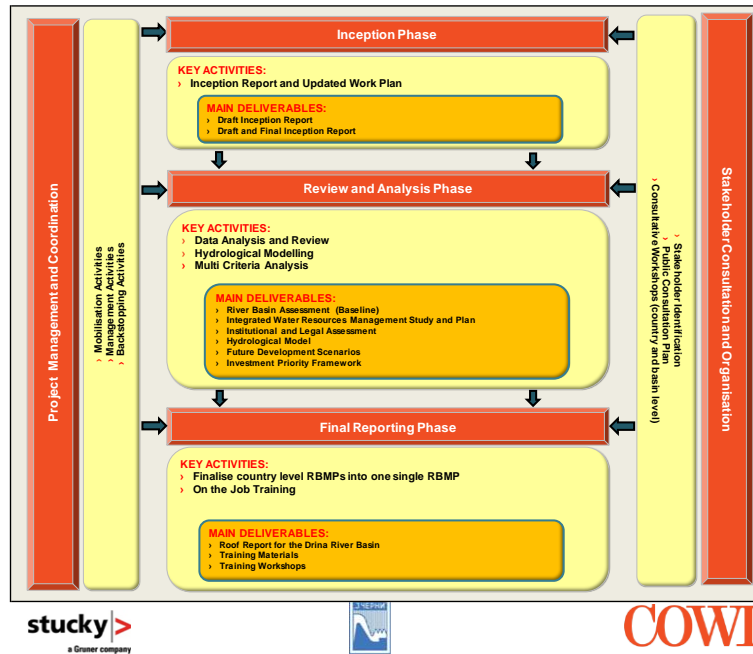
Montenegro

- Ministry of Agriculture and Rural Development (MARD) covering Montenegro at Podgorica
- Hydro-Meteorological Institute (HMI) at Podgorica
- Geological Survey of Montenegro at Podgorica
- Elektroprivreda of Crna Gora (EPCG) at Podgorica
- Ministry of Sustainable Development and Tourism (Environment Sector)
- Environmental Protection Agency for Montenegro

Serbia

- Water Directorate of the Ministry of Agriculture and Environmental Protection (MAEP) at Belgrade
- State Hydro-Meteorological Institution at Belgrade
- Serbian Environmental Protection Agency at Belgrade
- Ministry of Mining and Energy at Belgrade
- Public Utility Company "Srbijavode" at Belgrade
- Electric Power Industry of Serbia

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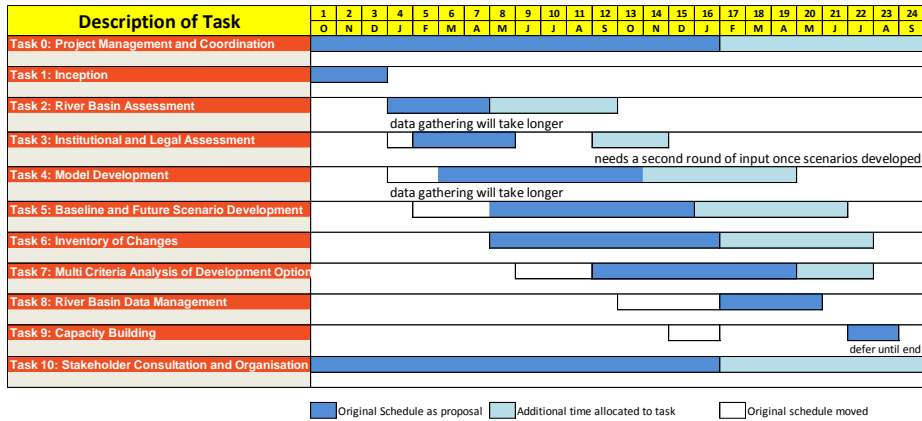
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11 Main Tasks:

- Task 0 – Project Management
- Task 1 – Inception
- Task 2 – River Basin Assessment
- Task 3 – Institutional + Legal Assessment
- Task 4 – Hydrological Simulation Model
- Task 5 – Scenario Development
- Task 6 - Inventory of Changes
- Task 7 – Multi Criteria Analysis
- Task 8 – River Basin Data Management
- Task 9 – Capacity Building
- Task 10 – Stakeholder Consultation and Organisation

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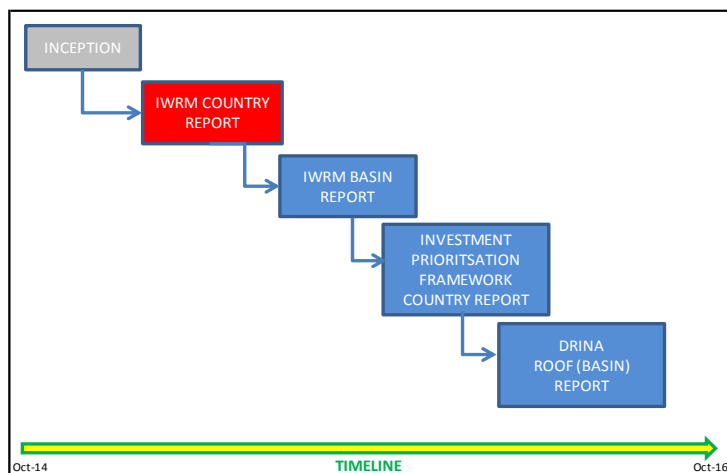
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MAIN OUTPUTS / DELIVERABLES

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Prefix Codex	Task Ref #	Title of Report Deliverable	Draft Due
PR#	Task 0	Monthly Progress Report (electronic form only)	Every 4 weeks after Inception
IAR	Tasks 0-5	Intermediate (Annual) Report	End of Month 9
RPC	Task 10	Report on Preliminary Consultations	End of Month 12
DFR	Tasks 0-10	Draft Final Report	End of Month 23
FR	Tasks 0-10	Final Report including report on Final consultation Workshop	End of Month 24
DIR	Task 1	Draft Inception Report and Revised Work Plan	15 th of Month 2
FIR	Task 1	Final Inception Report and Revised Work Plan	End of Month 5
DBP BiH	Tasks 2-5	Draft IWRM Study and Plan – Background Paper – BiH (FBiH+RS)	End of Month 12
DBP Ser	Tasks 2-5	Draft IWRM Study and Plan – Background Paper – Serbia	End of Month 9
DBP MNE	Tasks 2-5	Draft IWRM Study and Plan – Background Paper – Montenegro	End of Month 9
FBP BiH	Tasks 2-5	Final IWRM Study and Plan – Background Paper – BiH (FBiH+RS)	End of Month 16
FBP Ser	Tasks 2-5	Final IWRM Study and Plan – Background Paper – Serbia	End of Month 14
FBP MNE	Tasks 2-5	Final IWRM Study and Plan – Background Paper – Montenegro	End of Month 14
DIWRMP	Tasks 2-5	Draft IWRM Study and Plan at Basin Level	End of Month 17
FIWRMP	Tasks 2-5	Final IWRM Study and Plan at Basin Level	End of Month 17
DIPF - BiH	Tasks 6-8	Draft Investment Prioritization Framework – BiH (FBiH + RS)	End of Month 22
DIPF - Ser	Tasks 6-8	Draft Investment Prioritization Framework – Serbia	End of Month 20
DIPF MNE	Tasks 6-8	Draft Investment Prioritization Framework – Montenegro	End of Month 20
FIPF - BiH	Tasks 6-8	Final Investment Prioritization Framework – BiH (FBiH + RS)	End of Month 23
FIPF - Ser	Tasks 6-8	Final Investment Prioritization Framework – Serbia	End of Month 23
FIPF MNE	Tasks 6-8	Final Investment Prioritization Framework – Montenegro	End of Month 23
DDBRR	Tasks 6-8	Draft Drina Basin Roof Report	End of Month 23
FDBRR	Tasks 6-8	Final Drina Basin Roof Report	End of Month 24
DPCR	Task 7	Public Consultation Report - Draft	End of Month 22
FPCR	Task 7	Public Consultation Report – Final	End of Month 24



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No	Task Ref #	Title/Reason for the Workshop (WS)	No of Days	Timing
1	Task 0	Kick Off Meeting/Workshop	1	Start Month 1
2	Task 1	Inception Workshop to discuss DIR	1	End of Month 2
3	Tasks 2-5	Present IWRM DBP for BiH (FBiH + RS), Serbia + MNE	3	Month 11
4	Tasks 2-5	Broad scale WS for IWRM DBP - BiH (FBiH + RS)	1	Month 12
5	Tasks 2-5	Broad scale WS for IWRM DBP - Serbia	1	Month 12
6	Tasks 2-5	Broad scale WS for IWRM DBP - MNE	1	Month 12
7	Tasks 2-5	Finalise IWRM FBP – at Basin Level	1.5	Month 17
8	Tasks 6-8	WS for DIPF for BiH (FBiH + RS), Serbia + MNE	3	Month 19
9	Tasks 6-8	Broad scale WS for DIPF - BiH (FBiH + RS)	1	Month 22
10	Tasks 6-8	Broad scale WS for DIPF - Serbia	1	Month 21
11	Tasks 6-8	Broad scale WS for DIPF - MNE	1	Month 21
12	Tasks 6-8	Finalise DIPF – at Basin Level	1.5	Month 23
13	Task 9	Training workshop for Modelling	1	Month 24
14	Task 9	Training workshop for Economic evaluation/risk	1	Month 24



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Task Ref #	Title of Deliverable	Month Due
Task 6	Scope of Work for Additional Investigations	Month 22
Task 7	Multi Criteria Analysis Model	Month 14
Task 8	Updated Data Records for Drina River Basin	Month 24
Task 9	Training Manual for Hydrological Model	Month 24
Task 9	Hydrologic Model	Month 19
Task 9	Training Materials for Modelling	Month 22
Task 9	Training Materials for Economic Evaluation and Risk Assessment	Month 22



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CURRENT STATUS



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Tasks Status

Task 0 – Ongoing throughout Project

Task 1 - Inception - Completed

Task 2 – River Basin Assessment - under process for two countries

Task 3 – Institutional and Legal Assessment under process

Task 4 - Modelling – In process - WEAP Model licence has been purchased

Task 5 – Scenario Development – not yet started

Task 6-9 – Not yet started

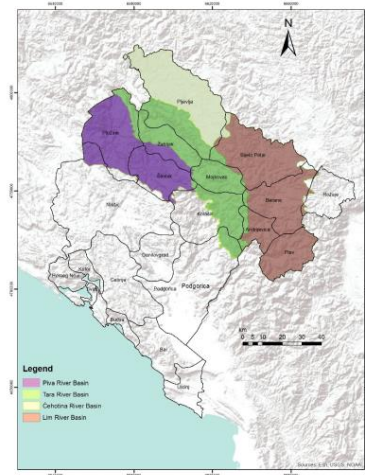
Task 10 – Ongoing throughout Project



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Water Management Regions



- How to delineate and to quantify?
- Four Water Management Regions can be discerned:
 - Region I - Piva
 - Region II - Tara
 - Region III - Čehotina
 - Region IV – Lim
- Surface water and groundwater bodies delineation

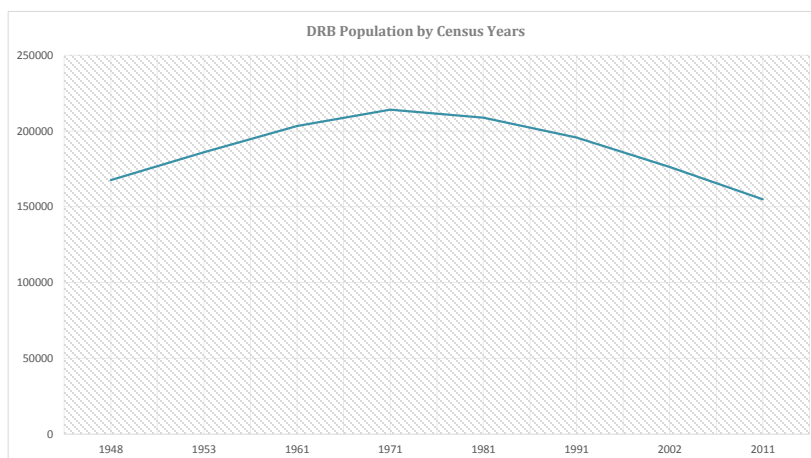
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Domestic Water Demands

- MONSTAT has no reliable records of domestic water consumption at DRB/Municipal level.
- Therefore used UNECE sources of information. (2014 Draft Environmental Performance Review)
- UNECE average for domestic consumption is 229 litres/capita/day – this has been adopted
- Comparing with EU countries these are extremely high values and reveal that water losses are a major issue (around 60%).
- In many European countries, the norm is 10-25% and in Germany, they are as low as 7%.

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Population rates are negative



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Water Demand in the Basin using 2011 population census

WM Region	River System	Surface area in Sub Basin in km ²	Estimated Total Population in DRB	Domestic Use (Mm ³ /yr)	Industrial Use (Mm ³ /yr)*	Irrigation Use (Mm ³ /yr)	Total Use (Mm ³ /yr)
I	Piva	1,456.16	5,704	0.56	0.05	0.00	0.61
II	Tara	1,721.40	28,954	2.42	0.48	0.18	3.08
III	Cehotina	1,024.44	24,713	2.07	0.93	0.13	3.12
IV	Lim	2,232.06	92,766	7.75	0.44	4.15	12.34
	Total	6,434.06	152,138	12.80	1.91	4.46	19.16

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Water Demands – Water Management Regions

- Region IV - Lim is the most stressed region
- Piva Region I is the least stressed region



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Future Water Demand

- Trends in domestic consumption would suggest flat or declining water demand in 30 years and 50 years from now.
- Industrial demand appears to be flat
- Irrigation demand may increase but there is no data within the Drina Basin municipalities to substantiate this.
- Perhaps increased demand from tourism?
- Hydropower also could influence demand – depends on the HPPs that are developed



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Key Drivers for IWRM

In general therefore, the key drivers are:

- water supply for the population,
- flood security for the population
- water supply for agriculture (irrigation)
- water supply for industry
- hydropower production
- environmental conservation
- recreation and tourism
- fisheries



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CONSTRAINTS



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- Poor responses from Stakeholders
- Lack of data
- Not enough coordination between stakeholders
- Riparian countries are not aligned to RBMP at Drina Basin Level
 - RBMP being prepared for Sava in BiH – EU IPA project
 - Serbia follows the Danube RBMP and the most recent Sava RBMP



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RECOMMENDATIONS



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- ISRBC needs to be more proactively involved to drive the project forward
- Important for the Drina Project to regularly liaise with ECRAN
- The forthcoming GEF project needs strong liaison with ECRAN to avoid overlaps and to promote synergies



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Thank You

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