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Sustainable hydropower in the Dinaric Arc

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WWF Mediterranean

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Bosnia and Herzegovina
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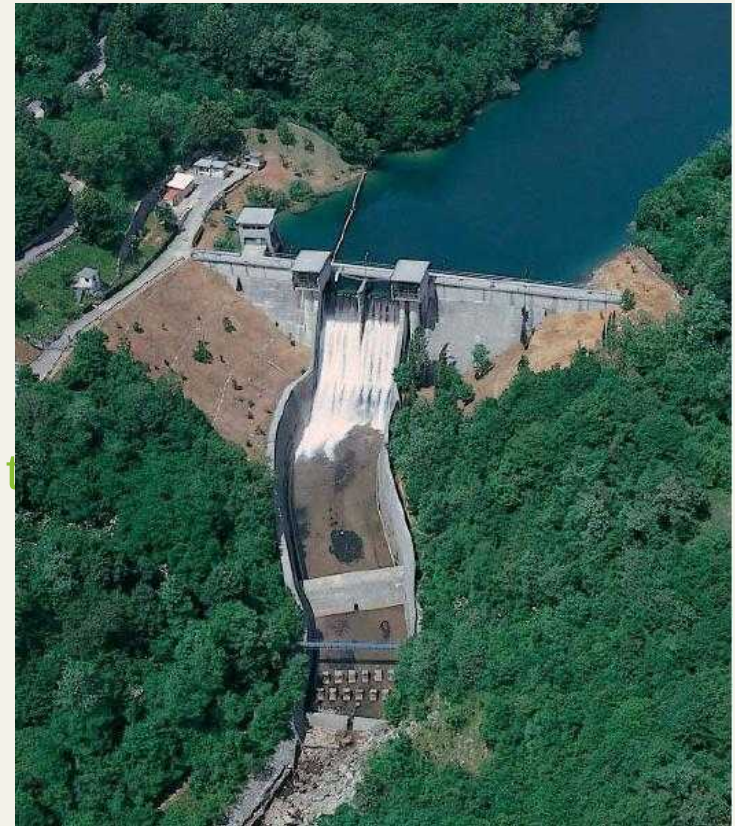


Content

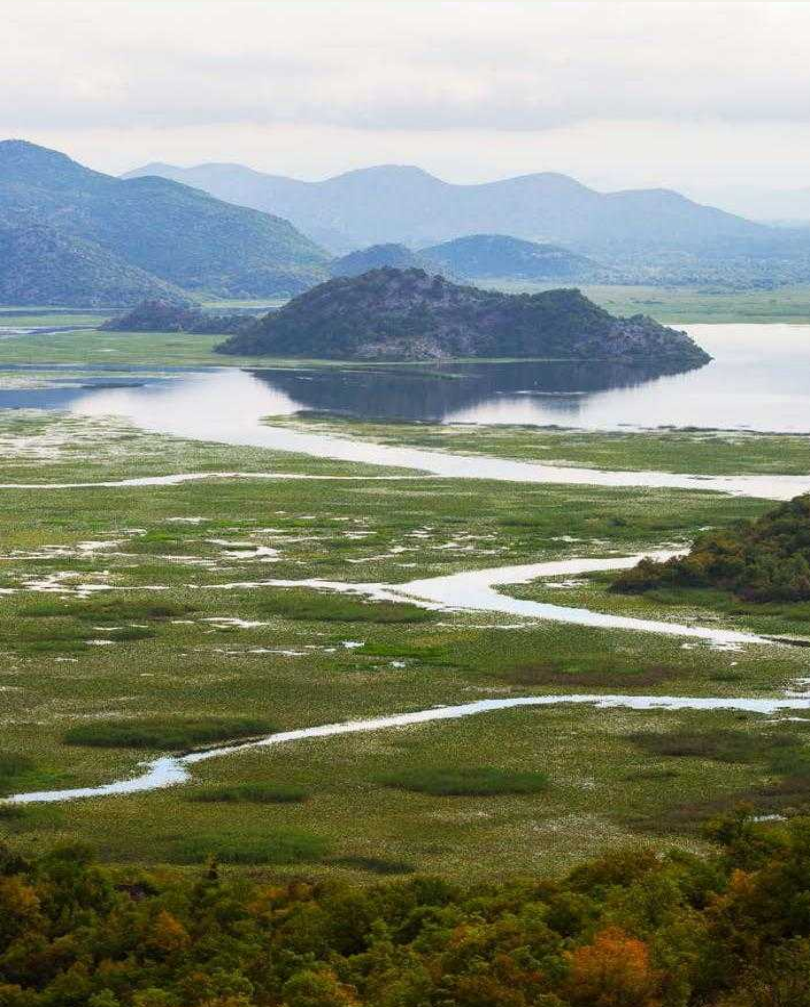
- 1. Click to edit the content
 - 2. Path towards sustainable hydropower
 - 3. Dinaric Arc Sustainable Hydropower Initiative
 - Third Outline Level
 - Fourth Outline Level
 - Fifth Outline Level
 - Sixth Outline Level
- Seventh Outline Level Click to edit Master text styles

Why is hydropower gaining importance?

- Click to edit the outline text format
- Move to renewable energy sources
 - base load
 - Second Outline Level
 - balancing energy
 - Third Outline Level
 - Fourth Outline Level
 - Fifth Outline Level
 - Sixth Outline Level
- Reciprocal relationship of energy production, water security and ecosystem integrity
 - Seventh Outline Level
 - Click to edit Master t
- Hydropower development always includes trade-offs so focus must be on projects where benefits clearly outweigh **all** costs



Why are freshwater ecosystems important?



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Freshwater bodies provide

- provisioning services
- regulating services
- ecosystem supporting functions
- cultural services

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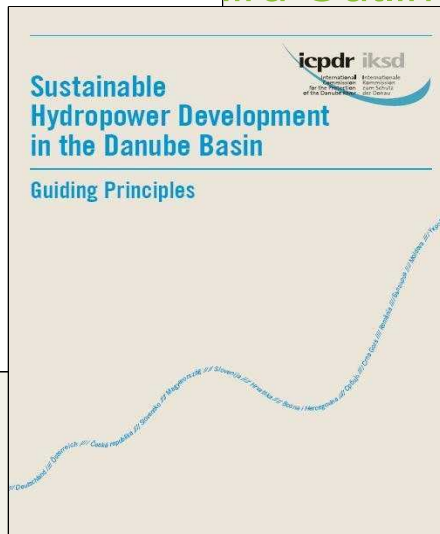
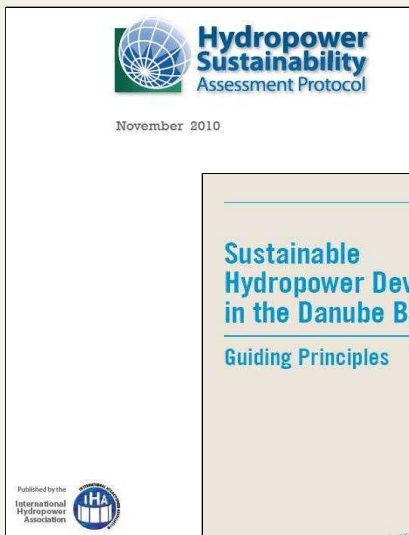
What is sustainable hydropower?

- The right projects developed in the right places, avoiding, minimising and mitigating adverse impacts, sharing benefits and respecting societal and environmental rights and values.
 - Second Outline Level
 - Third Outline Level
 - Fourth Outline Level
 - Fifth Outline Level
 - Sixth Outline Level

Seventh Outline Level Click to edit Master text styles

What tools exist for making hydropower sustainable?

Hydropower Sustainability Assessment Protocol



Sustainable Hydropower Development in the Danube Basin: Guiding Principles

- First Outline Level – uniform, comprehensive and holistic approach to locating and developing hydropower plants
- Second Outline Level – primarily addressed to public bodies and competent authorities, but also relevant for potential investors, financing institutions, NGOs and the interested public
- Third Outline Level – Full implementation – both in planning and developing stages – would ensure sustainable development of hydropower potential



2. Path towards sustainable hydropower

Sustainable hydropower guidelines

- **Increase efficiency** of existing energy infrastructure first
 - **Click to edit the outline text format**
- Develop **sustainable energy policy** which equally balances environmental, economic and social aspects, and is **based on diversified renewable energy mix**
 - **Second Outline Level**
 - **Third Outline Level**
- Plan new hydropower capacities only after technical and ecological **upgrade of existing plants is no longer viable**
 - **Fourth Outline Level**
 - **Fifth Outline Level**
- Select locations of new hydropower plants – large or small – by observing **zones of exclusion for hydropower development** as findings of project specific impact assessed on the river basin scale
 - **Sixth Outline level**
 - **Seventh Outline Level** **Click to edit master text style**
- Implement full scale mitigation measures and especially integration of **environmental flow** regimes and **fish passes** in hydropower plant designs



Exclusion zones

• Exclusion zones are areas not suitable for new hydropower defined and mapped under a basin-wide agreed set of scientifically sound ecological, cultural and social criteria whose protection should be legally binding.

- Second Outline Level
- Third Outline Level
- Fourth Outline Level
- Fifth Outline Level
- Sixth Outline Level

Seventh Outline Level

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2. Path towards sustainable hydropower

Exclusion zones

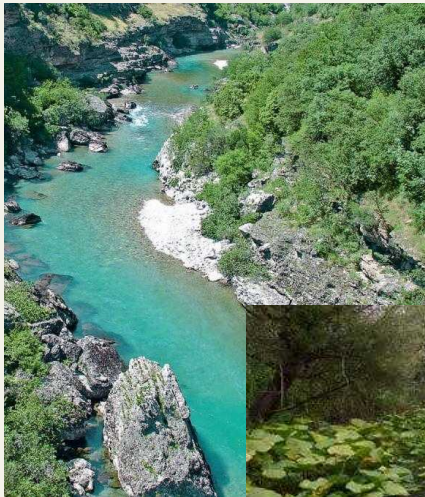
- End result of the basin identification and prioritisation of conservation value areas on basin-wide scale
 - Second Outline Level
 - exclusion → non favorable → less favorable → favorable
 - Third Outline Level
 - Fourth Outline Level
 - Most successful approaches to identification of exclusion zones
 - Fifth Outline Level
 - good balance between scientific work and practical considerations
 - Sixth Outline Level
 - involvement of key stakeholders from the earliest possible stages
 - Seventh Outline Level
 - using river basin as a minimum scale
 - sustained advocacy work at higher political levels



3. Dinaric Arc sustainable hydropower initiative

The Dinaric Arc region is a global biodiversity hub...

Many endemic plant and animal species thrive in rich habitats sustained by ~~directly~~ ~~river~~ ~~in~~ ~~the~~ ~~ext~~ ~~associated~~ wetlands and groundwater



Outline
Outline
Fourth
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... threatened by plans for extensive hydropower development

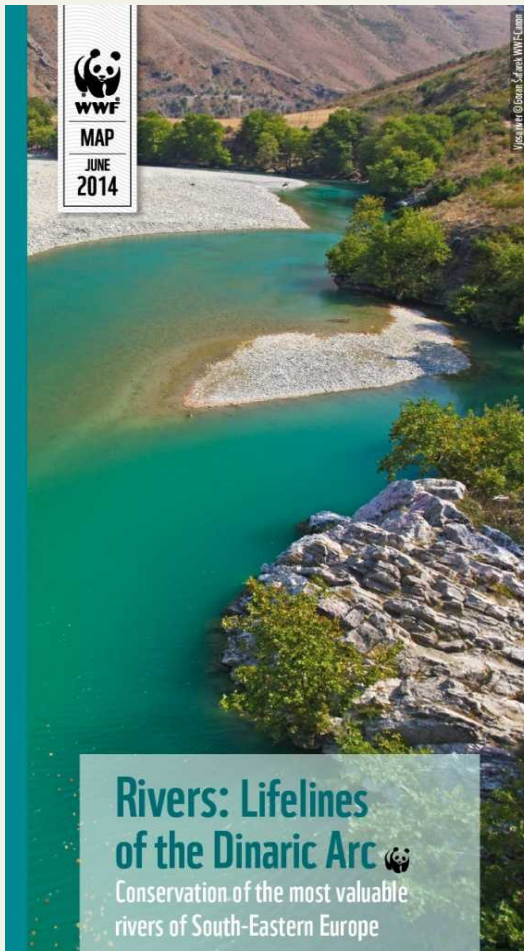


3. Dinaric Arc Sustainable Hydropower Initiative

The Dinaric Arc Sustainable Hydropower Initiative

- Countries of the Dinaric Arc are in a unique position to ensure long-term livelihoods of their people and health of their environment by putting sustainable hydropower to practice.
 - Second Outline Level
 - Third Outline Level
 - WWF Mediterranean Programme works
 - Fourth Outline Level
 - in cooperation with a wide network of stakeholders
 - to influence key decision-makers
 - Fifth Outline Level
 - Sixth Outline Level
 - Seventh Outline Level
- by providing scientific information and capacity building, reminding commitments and legal requirements, allowing discussion and trust building
- to ultimately reach common understanding on sustainable hydropower in the region that works for people and nature

Preliminary identification of exclusion zones



- Scientific analysis conducted in 2014 in cooperation with relevant national environmental institutions
- 296 rivers in Albania, Bosnia and Herzegovina, Croatia and Montenegro
- Analysed length 13.278 km
- Analysed parameters included river condition, total biological importance index, representation and connectivity
- All river reaches with high and good condition considered **outstanding river reaches**

Results of the scientific analysis

- Click to edit the outline
- Integrity of river network – Second Outline very high with 66% of the total river length analysed
- Third Outline – Fourth outstanding
- Fifth
- Sixth
- Seventh Outline Level





Next steps in identification of exclusion zones

- WWF will coordinate the outlining of relevant state institutions to help define exclusion zones and to ensure their full and comprehensive legal protection through legislative acts.
 - Second Outline Level
 - Third Outline Level
 - Fourth Outline Level
 - Fifth Outline Level
 - Sixth Outline Level

Seventh Outline Level Click to edit Master text styles



Thank you

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Questions?

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+100

WWF is in over
100 countries, on
5 continents

1961

WWF was founded
in 1961



+5000

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worldwide

+5M

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