



Lower Danube Exemplar

Challenges and Perspective for freshwater
restoration efforts on the Lower Danube.
WWF's experience and role of OPERAs

WWF Bulgaria

Apostol Dyankov



Outline

- Why do we work on the Danube? What do we want to achieve?
- What does the WWF freshwater restoration programme do?
- How do we apply the ES approach? How does OPERAs help?
- What are our next challenges (which may need you help!)
- Q&A

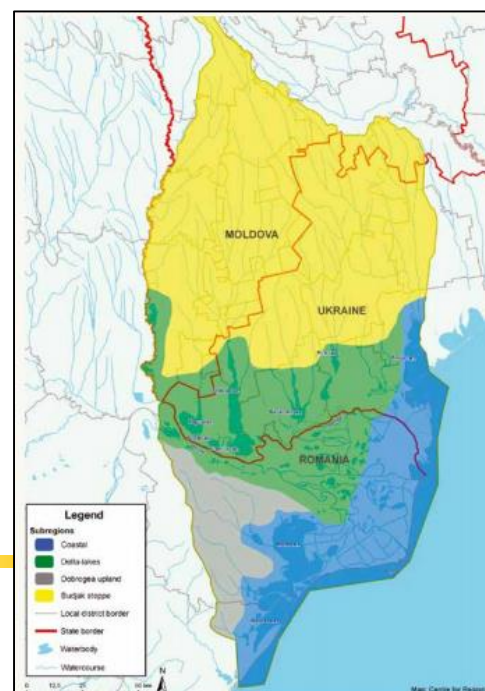
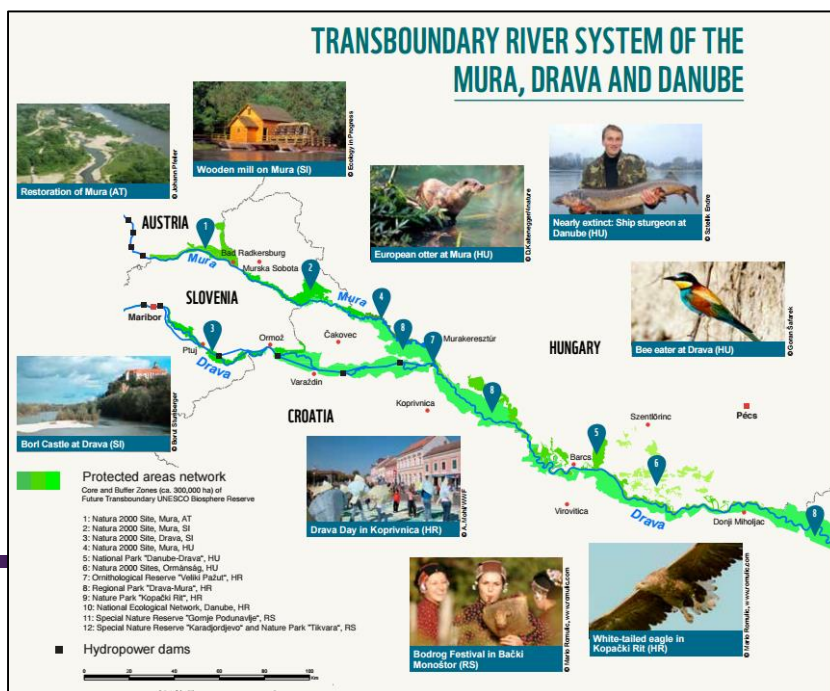
Why work on the Danube. What do we want to achieve?

The Danube is the most international river basin in the world. It provides drinking water for 20 million people and is home to unique species like the ancient sturgeon and white pelican.



International context: Cross-border cooperation on the Danube

- Austria, Slovenia, Hungary, Croatia and Serbia collaborate on Mura-Drava-Danube (potential 5-country UNESCO biosphere reserve – unique initiative in the world)
- Bulgaria, Moldova, Romania and Ukraine participate in the Lower Green Danube Green Corridor, the biggest wetland protection initiative in Europe
- Bulgaria & Romania cooperate on enacting and enforcing bans on fishing of 5 sturgeon species on the Danube (and creating alternative income for fishermen)



The role of the WWF Danube-Carpathian Programme

Achieved over the last decade

- Galvanized Lower Danube countries to conduct research, enact bans and restore habitats for the sturgeon and other fish species (also piloted sturgeon restocking)
- Directly Restored over 11,000 ha of wetlands (re-wetting and reconnecting flood plains, on the Danube and its tributaries in Austria, Hungary, Croatia, Serbia, Romania and Bulgaria (as main implementer of the flagship Living Danube Partnership with Coca-Cola Foundation, and also under EU-funded programmes)
- Tirelessly worked to remove hydropower & navigation project threats and impacts and pilot first-of-their kind green infrastructure solutions, protecting habitats.
- Promoted the significance of international cooperation on the Danube (with ICPDR)

In the pipeline

- By 2020 increase the Danube basin's water retention capacity by 12 million m³ and restore further 5,300 hectares of wetlands.
- Focus flood protection investment into natural water retention solutions
- Introduce comprehensive governance and socio-economic measures to address sturgeon poaching and create alternative livelihoods for fishing communities

Typical WWF cross-border Freshwater Project on the Danube (“Green Borders project”, conducted in Bulgaria and Romania)

3 Ramsar cross-border sites were designated aiming to apply the best management practices in order to conserve species and habitats,

The sites are: Bistret (RO) – Ibisha Island (BG), Iezerul Călarasi (RO) – Srebarna (BG) and Suhaia (RO) – Belene Island Complex (BG)



“Green Borders project”, activities conducted during the project

List of activities (conducted in 2009-2013 as part of “Green Borders”)

- Organized seminars with fishermen to promote extensive management of the fish farms in line with species conservation needs and compensation schemes in Bulgaria Romania
- The fishers worked in groups to find the best solutions for integrated fish farm management including among others reed management in fish farm, fish population per basin during different seasons, water management and birds’ mitigation and conservation measures.
- Facilitated agreements between fishers fish farms have at least one pond that is not used every year or during a season. Depending on the basins’ surface, economic interest and the ability of fishermen such basin can be given and maintained for birds’ use.
- Organized cross border tours in key areas for local authorities and agencies, ecosystem service users (fishermen, hunters, foresters) and members of the public to Rusensky Lom, Persina Nature Parc, Olt-Danube Confluence (Balta Geraiului), Rotunda fishfarm to showcase value of habitats and species, particularly the globally threatened species pygmy cormorant (*Phalacrocorax pygmeus*) and ferruginous duck (*Aythya nyroca*)

“Green Borders project”, activities identified as next steps

- Bilateral monitoring of wetlands used as breeding, nesting and wintering areas, and patrol activities in all Natura 2000 sites, where fishers work together with conservationists (like WWF) and regulatory authorities.
- Undertaking site-specific measures for birds' species (e.g. improving the resting places for cormorants, cutting the reed to form open waters, etc).
- Maintenance of proper water level during the breeding season in all wetlands and/or abandoned fishponds.
- Maintenance of the works needed to assure good quality habitats for bird's species (feeding and breeding on both side of the Danube);
- Restoration of degraded wetlands and their connectivity with the Danube's flood pulse in order to reduce the species dependence on artificial feeding.

Important hint: all of the necessary activities identified on both sides of the Danube revolve around fishers helping to restore ecosystem services!

Where ES approach comes in? Operationalize the ES framework!

Major ways the ES approach can improve WWF's Lower Danube freshwater work

1. Classify ecosystem services provided by freshwater ecosystems on the Lower Danube (e.g. first inventorying using CICES classification for Persina in OPERAs)
2. Use biophysical and monetary valuation methods to obtain a measure of the value of ecosystem services (e.g. CO₂ sequestration & flood protection of riparian forest)
3. Create ES-based KPIs for freshwater conservation project, rather than output or simple restored area metrics (e.g. the water replenishment metrics measured in m³)
4. Use the ES-derived KPIs to inform and influence decision-makers - authorities and stakeholders (including by incorporating them in decision-support tools like mDSS)
5. Design actual ES-based compensation schemes for stakeholders who implement ES-restoration measures (PES schemes and EU/nationally funded finance instruments)
6. Integrate field geo-referenced ES-mapping data, and ES-valuation analysis results into national Mapping and Assessment of Ecosystem Services (MAES) databases.
7. Upscale MAES data to inform conservation programming (e.g. when designing future conservation-oriented EU programmes like LIFE+)

How is OPERAs specifically helping WWF apply the ES approach

For the first time we were able to use CICES/MAES frameworks to obtain comprehensive picture of ecosystem service values in the Lower Danube.

Вид екосистемна услуга	Description and indicators	Timeline						Source of information
		2008	2009	2010	2011	2012	2013	
Physical and emirical interaction (natural assets for tourism)	number of tourists visiting NP Persina							
	revenue from tourism							
	revenue from tourism (Pleven reg	960724	825928	714850	752121	897210	815370	NSI
	revenue from tourism (V. Turnovo	2288866	1622002	1850468	2663355	2932894	3245495	NSI
	revenue from tourist fees for municipalities							municipality
	Nikopol municipality						0	municipality
	Belene municipality						800	municipality

Group: Biomass for materials and energy	Gathered plants/caught animals incl. fish for processing and production of goods; water for non-drinking purposes										
Biomass from water vegetation	Quantity of used reed or area from which reed is obtained	ton						3	88	according to WWF reports for Kaikusha wetland. The reed is not harvested	WWF reporting
	Price of pelletes/bricketes from reed per ton	BGN/ton						430	430	from the business plan for Eco Den and internet search	WWF reporting

How is OPERAs specifically helping WWF apply the ES approach

For the first time we were able to map and categorize stakeholders according to their cultural and economic perspectives and their preferred ES outcomes.

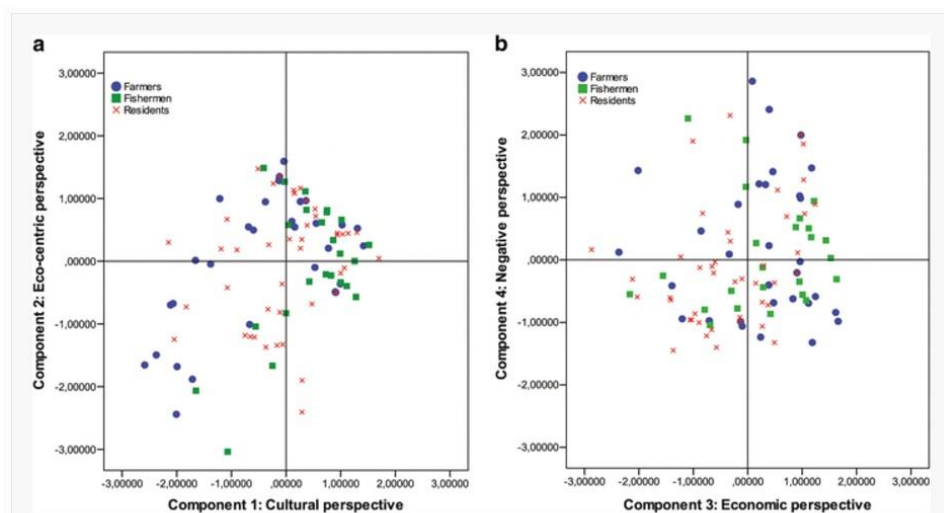
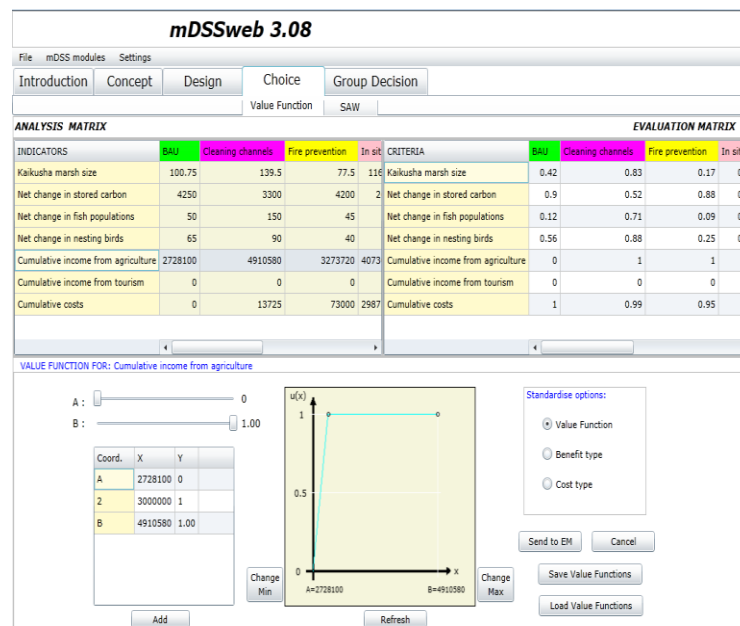


Fig. 5

Scatterplots of PCA scores for each respondent, categorized by the different user groups



How is OPERAs specifically helping WWF apply the ES approach

Within the N4D project in Romania WWF team conducted a national-level policy analysis by:

- ✓ measuring the level of **ecosystem approach** integration into **relevant policies** to identify opportunities for cross-sectoral integrations
- ✓ using **specific criteria**: **OPERAs**, CBD, MAES indicators

POLICY	CONCEPTUAL	OPERATIONAL
National River Basin Management Plan 2015-2021, Water Law		
Marine Strategy Art.11 Monitoring Program		
Forest Code		
National Strategy and Action Plan for Biodiversity Conservation		
Romanian National Strategy on Climate Change 2013-2020		
Operational Program for Fisheries and Maritime Affairs		
National Program for Rural Development		
General Master Plan for Transport 2014-2020		
Energy Strategy for Romania 2007-2020 updated for 2011-2020		
Regional Operational Program 2014-2020		
Romanian Territorial Planning Strategy		

How is OPERAs specifically helping WWF apply the ES approach

LENA (Local Economy and Nature Conservation in the Danube Region) DTP project is another project where the OPERAs specific criteria are used for policy analysis.

The policy analysis will measure the level of nature-based business models and green jobs integration into relevant policies to identify opportunities for sustainable development of the Danube region.

CRITERIA TO ASSESS INTEGRATION OF NATURE CONSERVATION AND NATURE-BASED BUSINESSES & JOB CREATION INTO THE ANALYSED POLICY										
CONTEXT	ENVIRONMENTAL AIM					INSTITUTIONS				INTEGRATION
	GOAL (conceptual integration)	OBJECTIVE (conceptual integration)	STEPS AND/OR REQUIREMENTS (conceptual integration)	INSTRUMENTS (operational integration)	PROGRESS TO DATE (implementation integration)	DECISION MAKING	IMPLEMENTATION	MONITORING	CONTROL	
Describe the type of interdependency and impact of the document analysed on the nature conservation, nature-based businesses & jobs creation.	Is nature conservation & sustainable use as well as the concept of nature based businesses & nature based jobs included as a goal/objective in the policy? How is goal/objective achievement expected to be implemented? What policy instruments are identified (information, decision support, implementation)? What progress has been achieved in implementing the policy (evidence based, successes and failures)?					Which are the competent authorities? A policy-related institutional chart will be developed.				What type of integration of researched concepts has been achieved, conceptual - operational - implementation? What level of integration has been achieved: explicit and comprehensive, explicit but not comprehensive, implicit and incomprehensive, no specific integration?

What are our next challenges (where we might need your help!)

1. Specific focus on creating **nature (ecosystem service)-based jobs** and livelihoods in the Lower Danube region – a new strategic goal for WWF until 2022
2. **ES-based mechanisms and indicators** for scoping and implementation of **green infrastructure projects** (e.g. in EU-funded flood protection natural water retention measures)
3. Create specific **ES-based toolkits** that inform **harmful gray infrastructure** development (e.g. **no go areas** for small hydro projects or linear project, financed by Chinese BRI donors).

Our next challenges – Focus on green job creation

WWF DCPO wants to explore relationships between biodiversity, ecosystem services and **employment**/livelihood creation:

- **directly through management and conservation of protected areas**, and through the **direct provisioning services of ecosystems** (e.g. food, medicine, timber, fiber, bioenergy), supporting primary industries such as fisheries, forestry and agriculture, and
- **indirectly through the regulating ecosystem services** (such as nutrient cycling and water provision).

We hope to use the knowledge and data to be able to actually create hundreds of green jobs/livelihoods on the Lower Danube by optimizing our conservation projects and partners work!

Our next challenges – Focus on greening infrastructure

WWF DCPO wants to demonstrate green infrastructure solutions work on the Lower Danube and harmful subsidies can be avoided:

- **Specific focus on flood protection** – demonstrating that restored river courses, floodplains and wetlands (e.g. “giving space to rivers”) **can have real tangible protection benefits.**
- **Mitigate harmful gray and linear infrastructure** – use MAES data and ES knowledge to better site and scope gray projects.

Countries like Bulgaria and Romania receive annually hundreds of millions of EUR under EU-funded programmes (Cohesion, Juncker plan etc.), with millions more added by multilateral donors (EIB, EBRD, new Chinese BRI donors). Greening/shifting those streams using nature capital-based tools will be absolutely essential.

