Ecosystem Services Assessment of Wetlands in Croatia-Serbia cross border region

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Project Ecosystem Services Assessment of Wetlands in Croatia-Serbia cross border region

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- Partners:
 - from Serbia: Nature Conservation Movement Sremska Mitrovica, Provincial Institute for Nature Conservation,
 - from Croatia: Public institution for management of protected areas in Osjecko baranjska county, The Ecologic Association Green Osijek





Purpose of EcoWet is to contribute to the protection and sustainable use of wetland ecosystems in Danube floodplain in Croatia - Serbia cross border region by introducing and testing methodology for ecosystems services (ES)

To improve effectiveness of protected areas management based on assessed ES

Purpose of this presentation is to process of ES assessment in project area



6 protected areas where ES assessment is taking place



- We used TESSA Methodology whish was most appropriate for participatory ES assessment in protected areas
 - TESSA Toolkit for Ecosystem Service Site-based Assessment has been developed through a collaboration of following institutions:











Process of ES assessment

Process of ES assessment took place in 3 phases:

- Identification of ecosystems in pilot areas and services associated with each identified ecosystems
- Identification of stakeholders and stakeholder analysis
- Assessment of selected ES services

- Each phase was accompanied with training for
 - manager of pilot protected areas,
 - local decision makers and
 - resources users (tourist organizations, farmer and fishermen societies, PU companies for waters and forest management...)







ES selected for full assessment

- Water related service flood protection services
- Harvested wild goods
 - include plants for food and medicine; animals hunted for food (including fish); fibers such as timber, reed; wild fruits; mushrooms and fungi

Cultivated goods

- food crops, livestock, products from aquaculture or plantation forestry, and biofuels; timber from cultivated species (eg. *Populus x canadensis*)
- Nature-based recreation and tourism
 - The key needed information is the annual total number of visits.
- Cultural ecosystem services (culturl heritage, cultural practice hunting fishing, ceremonies ...)

Data collection methods:

- Use of existing data
- Questionnaire survey
- Stakeholder workshops

Alternative state?

ES selected for full assessment

Flood protection services

- Collecting hydrological data, e.g. water level data for wetland
- If you don't have access to hydrological data, rapid assessment of the potential and actual ability of the site to store water can be made remotely

(i) Using maps and previous reports



The flood storage capacity of a wetland is the difference between the potential maximum volume of water stored in the wetland and the average low water levels.

The flood storage capacity is the difference in the volume of water between these two states.

Flood protection services

(ii) Using remote sensing approach

- Google Earth can provide rapid assessment of the flood storage capacity of a wetland if images are available from wet and dry seasons.
- Satellite images from other sources can also give this information



Flood protection services

(iii) Field observation

- If water level data and remote sensing images are not available than visit the site - map shorelines - organic and other debris left by a receding flood
 - This will tell you rapidly if the wetland has high and low water states
- Vegetation patterns can also indicate something about the hydrological dynamics of a site. Sites with marked flooding regimes and high dynamism often have a high proportion of pioneer vegetation species on the newly deposited sediment areas.



Flood protection services

Obtaining information on flooding from stakeholder meetings

- The categories of people that you have to invite to workshop:
- People with technical expertise and /or official responsibilities relating to water-related services
 - water resource management agencies, water companies, relevant NGOs, engineering companies involved in developments that might affect the site, resources users (fishermen, farmers, ..)

Assessing ES in alternative state

- Simple assessments of the value of ES services at an assessment site are a first step in understanding the importance of the site for delivering benefits to people.
- However, protected areas maanger, decision makers or CSOs would be interested to kow capacity of ecosystems to deliver ES would change if habitats are converted (e.g. to agriculture), ore restored (eg. agriculture land to wetland)
- Compering assessed ES services in current and alternative state will help managers of protected areas to improve management plans which will secure long term sustainability of the site

Possible alternative state for ES nature based tourism and recreation

"The alternative state would have 50% less forest cover and there would be no visitor facilities such as cafés, toilets or picnic sites".

Constructed wetland for water putification

- To demonstrate the benefit of water related ES services constructed wetland for waste water purification will be installed at visitor centre od SNR Zasavica.
- Constructed wetland will have double finction
 - Awareness raising on benefits of using green infrastructure for waste water treatment
 - Water purification

Designe of constructed wetland in SNR Zasavica

Thank you for your attention!

