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Rehabilitation of ecosystem functions as a tool for local development – lessons learnt from community-based demonstration projects in Tisa River Basin

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Abstract (up to 4,000 characters with references).

The main and key objective of a functional, long term sustainable landscape management strategy should be to devise, set up, fit into and operate human made systems in line with the complex operational and functional systems of nature.(1) Supporting sustainable land management is required both by Water Framework Directive (6) and Floods Directive (5) by recognizing the flood water retention potential and purifying capacity of natural wetlands.

Projects implemented by UNDP (2,3,4) are in line with the above mentioned principles of sustainable landscape management and demonstrate the opportunities and the potential for implementation of such measures on the local level. The project strategies are based on integration of within and between different sectors – maintenance, improvement or restoration of ecosystems and their functions, connected with diversification of economic activities (including agriculture) and well targeted support to rural development.

At the same time, UNDP identified barriers in the legal and institutional framework, as well as in agricultural and regional development support schemes. Most of the barriers arise from the lack of cooperation between the sectors, or even lack of cooperation between institutions within the same sector. Lack of capacities and awareness on all levels (national, regional and local) requires to pay sufficient attention not only to the technical implementation of the measures, but also to the participatory planning and preparation, coaching and close cooperation with the stakeholders.

The tools used in the projects implemented by UNDP include mainly:

- The good awareness of the local community on natural resources,
- Connections to the region and local traditions,
- Partnerships within and between different sectors,
- Coaching in development and implementation of integrated local development strategy
- Participatory planning and preparation of measures on restoration and reconnection of floodplains,
- Support to production, processing and sale of traditional floodplain products
- Channeling lessons learned into national policy and planning to remove the barriers that impede the practical implementation of integrated landscape management

Text:

1. BACKGROUND AND STRATEGY

The presented paper showcases practical experience of 3 projects funded by the Global Environment Facility (GEF) and implemented by UNDP during 2007-2012 in the Tisa River Basin countries (Ukraine, Slovakia, Hungary, Romania, Serbia).

- **Integration of Ecosystem Management Principles and Practices into Land and Water Management of Laborec-Uh Region (Eastern Slovakian Lowlands)**, UNDP-GEF Medium-Size Project, 2007-2012
- **Conservation and Restoration of the Globally Significant Biodiversity of the Tisza River Floodplain Through Integrated Floodplain Management – (Tisza-biodiversity project)**, UNDP-GEF Medium-Size Project, 2005-2009
- **Integrating multiple benefits of wetlands and floodplains into improved transboundary management for the Tisza River Basin**, UNDP-GEF Medium-Size Project, 2008-2011,

The main objective of all projects is improved environmental governance pertaining to improvement and enhanced use of wetlands and floodplains. The key action in this concept is the controlled discharge and return of river water from and to the main – regulated – river bed. To allow for and sustain the change, a different, more self-reliant economy in the riverine landscape should take place, representing a shift from industrial agriculture to small-scale production with high quality products.

The main results of the projects include:

- Local communities empowered to in managing their own development process and integrating ecological considerations including biodiversity, into their approach.
- Piloted measures of alternative approach to floodplain management that integrates flood control, agriculture, biodiversity conservation and social development – e.g. wetland restoration and utilization of the restored area (traditional livestock, fishponds, tourism)
- Adoption of policies supporting the practical implementation of integrated landscape management

There is a mix of tools applied in the projects that depends on the local baseline situation and local needs. The tools include mainly:

- Building awareness of the local community on natural resources,
- Strengthening connections to the region and local traditions,
- Building partnerships within and between different sectors,
- Coaching in development and implementation of integrated local development strategy
- Participatory planning and preparation of measures on restoration and reconnection of floodplains, bringing in also external technical assistance
- Support to production, processing and sale of traditional floodplain products
- Channeling lessons learned into national policy and planning to remove the barriers that impede the practical implementation of integrated landscape management

The projects strategy is based on the integrated landscape management (land and water) and community driven action. This is based on the definition proposed in one of the produced project technical papers: *“The main and key objective of a functional, long term sustainable landscape management strategy should be to devise, set up, fit into and operate human made systems in line with the complex operational and functional systems of nature”*.(1)

In practical terms and in the case of a living landscape, the implementation of such principles would mean local population recognizing and representing their own interest in maintaining the original functional dynamics of the land they live on. The integrated landscape management utilizes local natural conditions and leads to decreased dependency of the landscape and local community from external resources and inputs. The integrated landscape management results in improved livelihood in rural regions, in ecological, economic and social areas. (1)

Current water and land use practices in the Tisza valley originate from the modern river regulation activities intended to create more land for human agricultural use. The flawed starting point of these projects was that there was too much water on the land in the plains and therefore, the agricultural production potential of a fertile land (e.g. growing grain for export) was diminished by natural factors such as dangerous floods and permanent wetlands. Due to the regulations of the Tisza and its tributaries wetlands with shallow water were reduced significantly, and water dependent wild ecosystem vanished. Nowadays the Tisza valley is considered to be an economically backward area characterized by high unemployment rates and low income levels, prone to flood risk, habitual waterlogging and systematic drought at the same time. (1)

However, the region still has outstanding natural ecological values such as unique freshwater wetland ecosystems of 167 larger oxbow-lakes and more than 300 riparian wetlands. In the Tisza countries, there is a large potential for restoration of former floodplains and individual efforts are undergoing.

The basis for broader introduction of the integrated landscape management approach, taking into account the services of natural ecosystems, can be seen in EU water management policy (Water Framework Directive and Floods Directive) that recognize the flood water retention potential and purifying capacity of natural wetlands and promote sustainable land use practices. As land management is intimately linked to environmental protection, it is an issue of concern how the new EU Common Agricultural Policy (CAP) will be adapted to achieve the objectives of the EU water management policy. From the point of view of integrated management approach there is a clear link also to the Rural Development Programmes.

2. PROJECTS RESULTS

One of the most prominent achievements of the project “*Conservation and restoration of the globally significant biodiversity of the Tisza river floodplain through integrated floodplain management*” is the network of Tisza river stakeholders, Alliance for the Living Tisza (ALT). The ALT office was established in Nagyörű (near Szolnok), with office space provided by the municipality. There are currently one full time and two half-time ALT staff. The ALT coordinates communication among stakeholders, and helped to develop an integrated policy planning framework for the floodplain. Methodologies and guidelines supporting the biodiversity-friendly integrated holistic floodplain management practices in the upper Tisza floodplain were essential for the practical work on habitat restoration and maintenance, as well as control over invasive species. The MicroGrant Fund for Biodiversity of the Project directly helped to change 44,500 hectares to biodiversity friendly land use, but the change affected the territory of municipalities of 1,115 km² where positive effects can be monitored. The Project Team has exerted an extensive lobby work for the change of governmental rural development and flood control programs into a BD-friendly way.

Importantly, the ALT found a niche in supporting local market-based initiatives for direct sales of environmentally friendly products. Small-scale producers of local products face market barriers from national agriculture and consumer protection policies that favor large-scale producers. The project designed a proposal to the Government with amendments of agricultural policies to benefit small-scale farmers. In support of this legislative initiative, the project established a regional trademark for environmentally friendly produced products – the “Élő Tisza” (“Living Tisza”) trademark. The trademark follows in the line of other regional trademarks developed throughout Europe to strengthen local economies and improve marketing of local products. Currently 47 producers are registered to use the Living Tisza trademark, and many producers have more than one product marketed with the trademark, with about 100 products certified. The trademarked products are all floodplain related and produced in an environmentally friendly way: fruit derived products such as juice, jam and marmalade, farm-based products such as cheese, handcraft etc.. Services, such as tourist accommodations and sightseeing, are also certified and marketed. The trade mark may open new markets for farmers and local processors, service providers, giving an economic incentive for land use change into a biodiversity friendly direction.

The project was developed based on two assumptions related to the national policy documents and priorities.

The first was that the Improved Vasarhelyi Plan (VTT) as a government development scheme for the Tisa region, aiming to reduce the extreme flood levels, will remain an integrated, holistic development approach where water management (flood control), spatial development, rural development, nature conservation and economic development aspects have equal weight, and would have an appropriate institutional framework to manage the implementation of the concept – as it was the original intention. The original concept was based also on *“the flood reduction and mitigation system consisting of engineering structures and polders dedicated to the controlled discharge and eventual return of floods into the river as necessary (or transferring excess water onto areas in shortage of water) should be established and operated in a manner which will allow for the implementation of the objectives anticipated in the agro-environmental management, climate change control and Tisza Valley development programmes and the maintenance and promotion of natural habitats beside ensuring appropriate flood control functions even in case of flood pulses below the design flood levels. Within the reservoirs and on the landscape management pilot areas systematic annual flooding and inundation should be ensured when water flows allow”*(3). This approach was very similar to the traditional husbandry methods of the region before the Ottoman war where locals used a system called “fok” (a notch, an incision on the river bank) to let excess flood water out onto the fields where it was left, spread out, on a very large surface, thus never threatening human or animal life and preventing damage to property.

The second document was the National Agri-environmental Programme (NAEP) incorporated into the New Hungary Rural development Plan for 2007-2013, financed from the European Agricultural Fund for Rural Development /Regulation No. 1698/2005/EC). The NAEP is best suited to provide targeted support to land use change in the Tisa valley, where the current intensive agricultural production is unsustainable due to periodic flooding. The project assumed that the NAEP would be a main source of income for farmers implementing landscape management and trying to establish the practical experiences necessary for supporting integrated holistic floodplain management as a dominant land use pattern throughout the Tisza Valley.

Severe and unwelcome shift in Hungarian governance changing government development priorities ruined many of the project assumptions. Shifted priorities reflected in budget cuts for rural development, sustainable agricultural practices, and alternative water management methods. Just before project start, in 2007, the VTT was reviewed. With view to the financial situation in Hungary, the resources were reduced, implementation loosened and the emphasis was shifted to conventional flood control measures. No funds were set aside for a transition towards integrated holistic floodplain management in the affected areas. In the NAEP in the approved programmes, there were no suitable wetland measures available, no farm-level planning existed.

The outage of national level financing was compensated partially by the project Micro-Grant Fund, which supported the implementation of BD-friendly management at least on the part of originally planned area.

The project built and drew upon locally-driven initiatives, with external technical support. The initiatives existed in the region before the start of the project, and they have been enhanced and coordinated by the project through the establishment of ALT. Until now ALT continues lobbying and provides inputs and amendment proposals to the government.

The project „*Integration of Ecosystem Management Principles and Practices into Land and Water Management of Laborec-Uh Region (Eastern Slovakian Lowlands)*” demonstrates ecosystem management at a pilot site in north-eastern part of the Eastern Slovakia Lowland on Latorica River. The area is represented by 29,536 ha of mainly arable soil actively used in agriculture, 28 municipalities with 11,589 inhabitants. The lowest part of the pilot area proved impracticable to drain, so fish ponds (covering about 425 ha) were created around which oxbow lakes, wet meadows and some floodplain forests survived, and which maintained species-rich communities of plants and animals. The area is designated as a National Nature Reserve, Ramsar site and a bird protection area under Natura 2000.

The obligation of EU member states to develop the National River Basin Management Plan according to the EU Water Framework Directive is seen as an opportunity to channel ecosystem-based water management practices into strategic documents, thus starting up the integration process. The project has developed a River Sub-Basin Management Plan for Čierna voda, which is a river flowing in the middle of the project area. The Čierna voda RBMP has been prepared in participatory process, in close cooperation of Slovak Water Management Enterprise, which is responsible for river basins management, municipalities, NGOs and local stakeholders, mainly farmers. The Čierna voda RBMP has been harmonized with the floodplain restoration plan assessing revitalization potential from the point of view of biodiversity and hydrological conditions. As a result, 9 sites proposed for restoration in the Čierna voda RBMP as an alternative to technical measures. One of the proposed measures - reconstruction of the gate at Ziarovnica channel and cleaning up the channel near Bunkovce took place during winter 2009/2010. The aim of reconstruction was water supply for wetlands restoration and also resulted in reduced flood wave during floods in summer 2010. By this reconstruction, 900 ha of floodplain habitats have been improved (National Nature reserve Senianske fish ponds 424 ha and area around farming fish ponds 480 ha). To support the implementation of further proposed sites, the project team continues consultations with the land users.

In order to ensure bottom up approach in formulation of Integrated Local Development Strategy (ILDS), the project team introduced strategy for stakeholder mobilization (launch of microgrant scheme in project area, organization of study tours to provide participants with examples of socio-economic development in other regions, etc). The original intention to apply for funding

under the EU Leader Programme has been adjusted. Local stakeholders were not interested in establishing the Local Action Group and to participate in the LEADER programme. This was partially also due to limited budget of the LEADER Programme. Public-private partnership was created in form of Civic Association, which has wider possibilities for mobilizing resources than under the LEADER Programme. The Civic Association (CA) “Among the rivers” was established in October 2009. The role of the CA is to mobilize functional public-private partnership and search for active young people who can help in formulation of ILDS. The CA also pilots and mobilizes resources for local initiatives supporting sustainable local development. CA “Among the rivers” has 12 members and already received funding for the project "Region where people like to live“, focusing on promotion of the project area, work with school children, establishment of fishponds and restoration of public places in 5 villages together with local habitants. This entire work is aimed at increasing interest of local habitants in their livelihoods and increasing attractivity of the project area for tourism development.

To establish environmental businesses in the area, project team identified following business activities which are relevant within the project area: hemp production, growing of mangalica pigs, amaranthus, goats and fish (in relation to establishment of new fishponds within the project area). The project team developed list of potential candidates for the preparation of business plans. The list currently contains 10 interested farmers and project documentation for establishment of fishponds in 5 villages is under preparation.

Similarly as for the project in Hungary, during the preparation of the project it was assumed that a financial and policy support would be available through government programs. In particular, the project expected to leverage the EU-funded LEADER program promoting regional rural sustainable development strategies, and agri-environmental schemes funded through the Slovak Rural Development Programme with EU support. These assumptions did not hold true, following the election of a new Slovak government in 2006 - just at the point between project design and implementation. The 2006-2010 period was particularly challenging for environmental conservation efforts in Slovakia. The project design relied heavily on government funded financial incentives to motivate local stakeholders, without which achievement of the project objectives became more difficult. There was no Micro-Grant Fund set-up to compensate at least partially the outage of national level financing.

Unlike the project in Hungary, in the project area of the Slovak projects there were no local initiatives active before the project start. The regional stakeholder coalition with sufficient motivation and engagement was not coalesced to the degree necessary to generate a regional development strategy. Therefore the project strategy was adapted and effort focused to stakeholder mobilisation. Funds (15,000 USD) were reserved from the project budget for a micro-grant scheme supporting small actions based on partnerships and engagement of local stakeholders.

The strategy for wetland restoration was to leverage the agri-environmental measures to incentivize farmers to work with the project team to restore land currently used for intensive agricultural production back to floodplain grassland habitat. The initial site-selection criteria framework allowed the identification / pre-selection of nine possible sites for restoration measures. The changed assumptions about the agri-environmental schemes resulted in low interest among farmers currently using potential restoration sites. Therefore the selection of sites for restoration was focused on state-owned land and abandoned grassland.

In the project area, there are not available examples of farming practices and businesses based on typical traditional floodplain products and services, which are in accordance with the principles of integrated land and water management in the riverine landscape. The commodities need to be reintroduced; the local knowledge on the cultivation resp. breeding methods is lost. The production chain for these alternative commodities is very weak and additional support to production and processing is needed, which is not part of the project.

The project “*Integrating multiple benefits of wetlands and floodplains into improved transboundary management for the Tisa River Basin*” focused on developing the environmental benefits of wetlands to mitigate impacts of floods and droughts and help to reduce nutrient pollution in the Tisa River Basin. The project developed a river basin management plan integrating water quality, water quantity, land use and biodiversity objectives under the legal umbrella of the EU and International Committee for the Protection of the Danube River (ICPDR). The project also tested the new approaches on wetland and floodplain management through three community-based demonstration projects. The project scaled down the activities of the ICPDR in the Danube Region to the Tisa Sub-basin in order to ensure that the plan will be developed from both a ‘top-down’ and a ‘bottom-up’ perspective.

The developed policy document, the Integrated Tisa River Basin Management Plan is a major step toward meeting the requirements of the EU Water Framework Directive. Its aim is to ultimately introduce balance to the Tisa River Basin: a balance between the needs of the river and the needs of the people living with it.

According to the 2007 Tisa Analysis, the basin is threatened by several significant water management issues such as organic pollution, hazardous substances, nutrient pollution and changes due to river engineering. While these four problems were identified as significant water management issues for the entire Danube River Basin, the Tisa Analysis showed that water quantity issues can also play an important role in reaching good water status. Therefore the integration of water quality and water quantity aspects is crucial for the Tisa River Basin.

The ICPDR Tisa Group and the project experts identified an additional six issues related to the integration of water quantity and water quality, specific to the Tisa River Basin. The six issues include problems from floods and droughts, the impacts of climate change, demands on groundwater and surface water, solid waste in the river, accidental pollution due to flooding and loss of wetlands.

The Integrated Tisa River Basin Management Plan includes an updated analysis detailing the pressures, gives an overview of the status of the waters of the Tisza River Basin, and identifies the measures needed to be implemented to reach good status of waters by 2015 as set out in the objectives of the EU Water Framework Directive. To express their commitment to the Integrated Tisa River Basin Management Plan and achieving its goals, Ministers of the five Tisza countries met in Ukraine in April 2011 and signed the Memorandum of Understanding that commits the five countries to further cooperation in their efforts to protect the valuable environment of the basin.

The work done within the project, and beyond by the ICPDR Tisa Group, toward the plan for the Tisza River Basin serves as a pilot programme for other European sub-basins and beyond. With the Integrated Tisza River Basin Management Plan, the ground has been set for all countries in the basin to work together to manage their land and water operations for the benefit of the environment and the people living in the region.

The previously mentioned projects in Slovakia and Hungary were designed and implemented with focus on local action and local results. It was learned that this local experience can not be easily migrated to national level policy.

In the regional Tisa project the ICPDR Tisa Group was the main project partner. In the Tisa Group the water management authorities on national level are represented. The project allowed the representatives of the 3 local-level demonstration projects to participate in the work of the Tisa Group, to bring-in directly their experience and represent their needs.

Beside already mentioned problems with agricultural and regional development support schemes, the demonstrations projects also identified barriers in the legal and institutional framework. Most of the barriers arise from the lack of cooperation between the sectors, or even lack of cooperation between institutions within the same sector.

The institutional setup of the state administration and other official bodies reflects the century old view of water management as a technical issue which is to be regulated in compartments and each of these compartments have very little to do with each other. In the Tisa River Basin countries in particular this institutional fragmentation is best seen in the structure of the government agencies dealing separately with water, land, rural development and local community issues.

3. LESSONS LEARNED

- Current legislative framework and support schemes are not supportive to implementing measures of integrated landscape management therefore balance of local focus and ownership of national level policy makers is needed, the best if can be part of the same project and both level stakeholders are project partners directly involved in the implementation.
- Effective BD-protection and enrichment can only be expected, if local communities are provided with the necessary knowledge and financial incentives to carry out economic activities that support sustainable use of natural resources
- Integrated landscape management initiatives are to include also support to small-scale producers in production and sale of traditional products
- The micro-grant scheme is an important tool to demonstrate success and allow for replication;
 - o requirement for partnership needs to be incorporated to improve sustainability and replication;
 - o 2-phase call (project ideas and full project proposal), coaching during project proposal development is recommended
 - o Simple application procedure and simple application form is needed to make the funding accessible for local stakeholders

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