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# FINAL REPORT

INTEGRATED LAND DEVELOPMENT (ILD) PROGRAM TO  
IMPROVE LAND USE AND WATER MANAGEMENT  
EFFICIENCY IN THE TISZA BASIN

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A component of the UNDP/GEF Tisza MSP entitled  
Integrating multiple benefits of wetlands and floodplains into improved transboundary  
management for the Tisza River Basin

PROJECT PERIOD:  
**25 March 2009 – 28 February 2011**

**Lead Partner:**  
**Alliance for Living Tisza (ALT - SZÖVET)**

Service Contract No IC/WD/384-HU in the frame of the UNDP/GEF Tisza MSP

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# TECHNICAL PART

## 2 Abbreviations / acronyms

BME	Budapest Technical University
CAP	Common Agricultural Policy
CSA	community supported agriculture
DFL (MÁSZ)	Design flood level
EU	European Union
GEF	Global Environmental Facility
GIS	geographical information system
HU	Hungary
ICPDR	International Commission for the Protection of the Danube River
ILD	Integrated land development
KÖTIVIZIG	Middle Tisza Water Management Directorate
LFA	Least favoured areas
LNV	Highest water stage
LU	land use
LUC	land use change
MARD	Ministry of Agriculture and Rural Development (-2010)
mB	metres above Baltic Sea level
MRD	Ministry of Rural Development (2010-)
MTA	Hungarian Academy of Sciences
NAEP	National Agro-Environmental Programme
NDM	National Development Ministry
NGO	Non-governmental organization
NPHMOS	National Public Health and Medical Officer Service
RISSAC	Research Institute for Soil Science and Agricultural Chemistry (MTA TAKI)
Ro	Romania
RS	Serbia
SH	stakeholder
SZÖVET	The Alliance for the Living Tisza Association (ALT)
TEEB	The Economic of Ecosystem and Biodiversity
TÉSZ	Production and Trading Organisation
TRB	Tisza River Basin
UNDP	United Nations Development Programme
VKKI	Water Management and Environmental Central Directorate
VTT	New Vásárhelyi Plan for integrated flood, rural development and nature development in Hungary

### 3 Summary

The ILD project was conceived to complement the integrated river management efforts on the Tisza coordinated by the Tisza group of the ICPDR. The project completed a number of objectives over a lifespan of almost two years. Activities started on 25 March 2009 and were completed on 28 February 2011. All the project objectives were associated with a number of specific outputs and an outcome.

Objective 1 aimed at the detailed description of the ILD methodology and a comprehensive assessment of the legal, administrative, political, economic, social and financial background of implementation for such a methodology on the large scale in each of the riparian countries along the Tisza. The key outcome of the first objective was a report entitled the ILD manual.

The ILD manual, completed by 30 September 2010 through the extensive efforts of all members of the project staff, is a practical guide to the integrated land development and management methods which are in the focus of the project as a whole. It also covered lessons learnt from the project. First it provided an overview of the system theoretical considerations which outlined the background to the ILD concept and described shortly the project history as well as the history of Tisza management from the ILD perspective. The reasons and consequences of the current problems with water management, flood control, water shortage, drought and water stagnation on agricultural land caused by excess surface water were all discussed in details. The study also dealt with the legal, institutional and social-economic factors which surround the activities related to the river and its wider plain. Additionally, it also covered some of the external drivers beyond the reasonable control of planners such as extreme weather patterns caused by global climate change, erratic events like the volcano eruption in Iceland or some of the global problems human society is facing such as fossil fuel depletion and energy crisis or the collapse of monetary markets.

The ILD concept is originated from the historical water management methods of the peoples living in the Tisza valley. A historical insight is provided to these conditions which prevailed during the Medieval and also the causes which led to the waterlogging of the Great Plain by the end of the 18th century. In the second part the manual deals with the natural features and the legal, institutional potentials which still allow for the large scale implementation of the ILD concept. It argues for an extensive land use change model supplemented with an adaptive water management model. The first attempt of this model is represented by the current official Hungarian approach to the complex management of the region, the further improvement of the Vásárhelyi Plan, the original river regulation concept of the 19<sup>th</sup> century. The current concept is referred to in shorthand as VTT. This methodology is followed by the description of the ILD concept, the method the project promotes. The ideal case scenario is followed by the condition precedents of such an approach in the fields of legal regulation and institutional setup as well as policy making and economic organisation. Finally, case studies are described which reflect both the potential and the current possibilities of the ILD implementation, and the adverse effects and misconceived design features of the VTT.

One of the main concerns of the project was how to transfer the theoretical concept into practical terms, how to do something on the ground which can be used as an exemplary achievement demonstrating the viability of the theory. A specific pilot demonstration site seen

most suitable for the practical implementation of the ILD approach in the Nagykörű area, Hungary was selected with a possible extension to additional spin-off projects in two other riparian countries where partner organisations are active: Serbia and Romania.

The key outcome of the second objective was assumed to be a small site in the Nagykörű polder where the ILD is physically tested and two feasibility studies from Senta Municipality in Serbia and Agora, an NGO in County Udvarhely in Romania describing the potential of technology transfer to their respective sites. Unfortunately, the pilot site activities could only be carried out incompletely, four of the proposed seven step operation could be finished due to stakeholder resistance and legal, institutional barriers.

The information gathered, the experiences gained and the results obtained during the almost two years long project were disseminated to benefit the Tisza basin as a whole and the international organisations UNDP, ICPDR and the EU. The multiple outcomes of this activity were presentations, media coverage, training materials, workshops, a comprehensive project summary and a website.

## **4 Summary of work planned**

### **PROJECT OBJECTIVES AND OUTPUTS**

The lessons learned from UNDP GEF Tisza Biodiversity (2005-2008) project highlighted the need for integrated land management – landscape planning, utilization programming, land consolidation, property exchange. These are needed to support high level policy objectives (flood reduction, carbon sequestration, river basins management) and to harmonize it with local stakeholder's goals requires new approaches at different scales (EU, national, regional, village, farm and parcel level), taking into account the transboundary effects as well (nation to nation, region to region).

In the project the objectives and outputs were three folded:

1. to elaborate the legal situation related to ILD and provide useful recommendation on base of 5 Tisza country survey (based on the knowledge gained in Hungary involving legal experts a detailed, structured questionnaire/survey is going to be implemented at all demo partners);
2. to implement the ILD at one pilot, to develop further pilots at our partners
3. to disseminate the experience and the lessons of the implementation at our partners in Serbia and in Romania to establish better cooperation, understandings of different circumstances and prepare further projects. Training materials will be available for all countries in the Tisza basin; local 'ILD mediators' to support bottom up land development processes are going to be trained (training of trainers), based on the applications at the pilot sites in the Tisza region.

The ILD has the following steps:

1. To summarise foundational works on LUC in pilot sites (digesting and complementing data, introducing results)
  - a. evaluating recent land use
  - b. demonstrating alternative land use (ILD – necessities and potentialities)
  - c. participatory planning with land users to involve them
  - d. scheduling works for LUC (for implementation of ILD)

- e. managing the implementation (setting lessons, arranging dissemination)
- 2. To complete LUC in selected pilot sites (arranging administration, setting parcels, improving conditions for pasturage – eg. removing unproper vegetation, confining adventive species, fencing)
  - a. arable land ∞ grazing forest
  - b. arable land ∞ floodplain lake
- 3. To adapt selected canals to serve ILD at sites
  - a. „soft” improvement: adapting working method of canals for water allocation
  - b. „hard” improvement:
    - i. adapting morfological characteristics of canals to natural channels (slope and course correction - as far as possible)
    - ii. building lateral outlets to let out the water and collect the surplus volume (steering by sluices)
- 4. To change the land use on selected sites, adapting vegetation to elevation (arable land ∞ wetland in former riverbeds)
  - a. „soft” improvement: administration of LUC, fitting parcels to elevation
  - b. „hard” improvement: morphological and biological implementation
    - i. some physical works to accentuate and actuate different elevations (improving inland-water steering)
    - ii. improving flora fit to elevations to promote evolution of the natural pattern (implementing green corridors)
- 5. To put improved ILD protocol into practice at other pilots (further project development)
  - a. evaluating the local land and circumstances (identifying possible sites for case studies)
  - b. defining the locally adaptive ILD for establishing LUC
  - c. informing the stakeholders about lessons learned, getting a local initiative under way

## 5 Changes (and reasons) to work planned

The most significant and substantial changes to the workplan were connected to objective and outcome 2, the practical implementation efforts of the pilot demonstration sites. During the first year of the project it was revealed that there are too many legal and institutional barriers in the way of ILD implementation to overcome which prevent successful execution even when stakeholder agreement is achieved. The second leasson learnt was that stakeholders, mainly land owners and user are not at all interested in changing their cultivation methods because of the financial interests attached to the current ploughland. Therefore, activities had to be rescheduled several times and finally abandoned halfway. The process, the reasons and the various attempts to overcome the situation are described in details in both the ILD manual and the project summary.

Training of the trainers, an education activity had to be skipped due to lack of resources and shortness of time. All the other works have been completed.

## 6 Description of work undertaken

Based on the logical framework matrix submitted as part of the original project proposal, the project team developed the project flowchart of processes which served as a guiding document throughout the rest of the project period. A graphic representation was drawn up for the project processes showing inputs, procedures, activities and outputs in the form of a comprehensive flowchart. The flowchart was subject to minor changes as the project developed in practical terms but can be used as a guideline for planning and scheduling. It is now available both in Hungarian and English and is attached to this report.

**Legal review:** The first part of the legal review document assessing the laws and regulations constituting the background (such as current water management legislation, land consolidation procedures, agricultural administration, EU related and top up schemes for agricultural subsidies and also some of the current issues like legal constraints and possibilities for land use change, forest plantation and the like) against which the proposed procedures linked to ILD are to be implemented has been completed by May 2010. This mainly consists of the legal considerations to be taken into account for land consolidation purposes in Hungary. The document is entitled Barriers and opportunities and is attached under the copies of reports annex. The document was presented at the third workshop in Nagykörű, which served as the dissemination event for the legal review. Project partners and participants from Romania and Serbia were present and following the seminar delivered similar materials of their respective countries by December. From Slovakia and Ukraine a similar set of materials was collected with the help of a questionnaire. These materials were consolidated in the form of a comprehensive legal review covering all the five riparian countries by the end of the project term.

The ILD manual, completed by 30 September 2010 through the extensive efforts of all members of the project staff, is a practical guide to the integrated land development and management methods which are in the focus of the project as a whole. It also covered lessons learnt from the project. First it provided an overview of the system theoretical considerations which outlined the background to the ILD concept and described shortly the project history as well as the history of Tisza management from the ILD perspective. The reasons and consequences of the current problems with water management, flood control, water shortage, drought and water stagnation on agricultural land caused by excess surface water were all discussed in details. The study also dealt with the legal, institutional and social-economic factors which surround the activities related to the river and its wider plain. Additionally, it also covered some of the external drivers beyond the reasonable control of planners such as extreme weather patterns caused by global climate change, erratic events like the volcano eruption in Iceland or some of the global problems human society is facing such as fossil fuel depletion and energy crisis or the collapse of monetary markets.

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Hungarian approach to the complex management of the region, the further improvement of the Vásárhelyi Plan, the original river regulation concept of the 19<sup>th</sup> century. The current concept is referred to in shorthand as VTT. This methodology is followed by the description of the ILD concept, the method the project promotes. The ideal case scenario is followed by the condition precedents of such an approach in the fields of legal regulation and institutional setup as well as policy making and economic organisation. Finally, case studies are described which reflect both the potential and the current possibilities of the ILD implementation, and the adverse effects and misconceived design features of the VTT.

### Practical implementation

- **Landscape Strategy.** A strategic paper was compiled using some of the materials developed and experiences gathered during the earlier phases of the project. This paper provides a comprehensive outlook onto the theoretical foundations on which any practical implementation scheme of the ILD activities must rest. The approach taken focused mainly on the geographic and hydromorphological as well as dynamic features of the landscape along the middle and lower lowland reach of the river. The document is attached hereto in the copies of reports annex.
- The socio-economic sustainability of the approach is very important, that's why the livelihood (or income) opportunities are in focus as well during the project implementation. As a first step, the market opportunities for local farmers' products investigation started, with special focus on collaborative approaches. The role of informal networks has importance in water management as well. That's why the combination of production and trading schemes and ILD seems for us a good approach, which needs to be tested later on. This part of the project was mainly conducted by SZÖVET member Andrea Szabadkai and related presentations are included in the copies of presentations annex.
- Measuring the attitude of farmers to the landscape they live in is very important for participatory planning of ILD. The original project aimed to survey (with the help of a questionnaire) such attitudes both locally and abroad. The questionnaire has been developed and tested, but with disastrous results: in fact, nobody seemed to be interested in filling them in. Therefore, another approach was taken and interviews were made with farmers, water officials and other stakeholders in relation to their perception of land and water and their feelings about a possible land use change or integrated approach to land and water management. The findings of these interviews were incorporated in the ILD manual.
- Consultations were held with representatives of the water administration and the ministry in charge of agriculturally productive land. The project manager kept in touch with KÖTIVIZIG, the regionally competent water authority throughout the project term and conducted negotiations on cooperation possibilities. Also, synergies were felt from the water administration side, as the water engineers also feel the problem. Somewhat less successful was the relationship with land users and land owners, which is a difficult group of stakeholders and the related administration (Ministry of Agriculture and Rural Development at the time) did not show any interest whatsoever during the first one year of the project. It was only after the elections and the setting up of the new Ministry of Rural Development that cooperation with the ministry was put to a promising start.

A demonstration site was identified and negotiations with owners and users were afloat to implement a small scale structure capable of regulating water cover on that site. A seven step process was developed to obtain the desired goal:

- Step 1: Description of the area, schematic diagram
- Step 2: Identification of the owners
- Step 3: Information dissemination and negotiations
- Step 4: Surveying and administration
- Step 5: Changing the type of cultivation
- Step 6: Design, licensing and construction of the water steering structure
- Step 7: Operation and maintenance

- The background research concerning the scientific foundations of the proposed activities at the pilot sites was summarised in a Hungarian position paper on the possibilities of ILD implementation in the Nagykörű polder and providing some recommendations as to the operation of the Nagykörű reservoir. The work focused mainly on the geographic and topographic conditions of the area.
- Data collection for the selected sites in the Nagykörű polder area was completed. A total of four sites have been identified for potential flooding from the excess inland water drainage canals within the polder, next to each other where a canal provides the physical opportunity to retain the water. Of these four sites, most of the relevant data were gathered and the practical implementation of the project started. All the necessary maps, photographs and GIS based various layers are available. The work was covered from the project funding under the Service Contract concluded with project partner RISSAC. A very complex ownership structure was revealed against the proposed flooding sites which gave rise to a lot of tasks to be completed.
- Personal discussions started with the owners and land users. Soon a number of seemingly insurmountable difficulties emerged such as legal barriers, attitudes and economic interests, all going against the ILD efforts. The project was described and explained to each of the owners/users/stakeholders.
- Farmer's forums were held for those owners who are affected by any of the four sites. Unfortunately, this meant almost a hundred different owners. At Site I in a single parcel there are 62 different owners registered in the cognisant regional land registry office. It is quite clear that these are absentee owners leasing their land to one or two farmers or agribusinesses. Nevertheless, a short information leaflet was developed targeted to local owners of the ILD sites.
- Since the farmer's forum revealed the insurmountable difficulties faced with three of the proposed four sites in terms of land consolidation, the project management decided to give a push to Site 4 implementation which is currently partly owned by project participants and there are only four other owners to deal with. They were approached for obtaining endorsement from them to allow surveying and land use change, the negotiations still underway. The necessary authorisations, task lists etc. were also developed. The land consolidation schedule for the Anyita site (the demonstration project in the Nagykörű floodway) was defined.
- In the meantime design activities have started by contacting four different designers calling upon them to submit bids for a small water management structure (a sluice in fact) which would be used to retain water when deemed necessary but also to drain the field in times of unwanted excess water. At the end of the process the selected

designer concluded that he could design the scheme without the need for any artificial structure. Also, a surveyor was selected to peg out and divide up the selected parcel.

- This was the point when project management felt the need to involve professional landscape designers into the scheme. In order to be able to visualise the various options raised during the negotiations, a landscape architecture firm was commissioned to prepare four different versions of land use patterns in terms of a layout diagram and the bird's view illustration thereof. Such visions are described in the ILD manual extensively.
- Of the seven steps, only the four first could be completed due to stakeholder resistance. In order to facilitate the negotiation process, the project designed four versions of land use change with the involvement of landscape architects. The four versions were, respectively:
  1. Current pattern with the intensive cropping of all the fields, except the failed plum orchard in the middle.
  2. Grassland and pasture, where most of the lower lying land was converted into grass as the cultivation type and covered by water seasonally.
  3. Semi-natural land use patterns, where various different uses comprise a mosaic like diverse structure including different types of cultivation with woodlots, wetland areas and grassland, leaving some of the cropland intact on the higher elevations.
  4. Intensive use adapted to the geomorphologic conditions. In fact, this version contains a state-of-the-art fish pond.
- A land surveyor was called in to mark out the proposed subparcels in each of five and four parcels, respectively (an alternative for the physical boundaries was left due to uncertainties seen in owner attitudes).
- Owners and users could not arrive at an agreement on the adoption of any of the versions outlined by the end of the project, although the surveying of the new subparcels was completed and thus the conversion of the registered type of land use can be done any time when the owners feel like it. Therefore, the process had to be stopped at this point.

Therefore, the main conclusion is that without substantial changes in the institutional setup, the political interests and the legal framework any large scale implementation of the ILD concept is illusory.

The activities proposed by the partner organisations were evaluated in a case study. Senta municipality mapped their respective community with a view to implement the ILD concept there and suggested an area called Csésztó on the a local catchment area of the Becke. With their feasibility study they wanted to call the attention of the decision makers in the national and local governments, politics and the economic sector on the importance of the water and land management methods and perspectives in their respective Tisza section. However, they ran into the same difficulties as the Hungarian project because the current legislation on water management does not recognise wetland areas. The complete re-arrangement of the related legislation and organisation structure would be needed in order to implement the concept. Changes in the water administration including its legal framework are currently underway.

A completely different approach was taken by the other partner, AGORA. This team lives in the upper catchment of the river and therefore they are facing the challenges of a rapid and unbridled water course, a tributary called Nyikó. In 2005 a death toll of nearly 20 people

marked the significance of the unpredictable and fierce floods of the area. The solution proposed was to retain water in small reservoirs built at several locations within the tributary area so that less water could get into the main river during high floods and water could be stored for the dry Summer season. Although the local initiative was successful in retaining the water, it filled up within a year. Therefore a silt trap was proposed upstream to relieve the main dam from the pressure. At any rate, the Romanian team did not have to struggle with the legal obstacles.

#### MARD proposal

Having regard to the aforementioned several and severe obstacles in the legal and institutional environment which prevent the successful implementation of the ILD concept, the project management initiated a cooperation with the new government after the general elections in 2010. In a letter the project team presented the project concept and results in a nutshell and offered their assistance in the policy making efforts of the administration. The response of Parliamentary State Secretary of the freshly formed combined Ministry of Rural Development was very supportive. Dr. Ángyán shared the view of the ILD team members with regard to the importance of an integrated land and landscape utilisation scheme adapted to the natural endowments of the landscape and invited the project team to present their materials to the staff of the Ministry and to participate in a task force dealing with the complex rural development concept of the Tisza region.

#### Dissemination of the results

Right from the very beginning, the dissemination and transfer of project results was in the focus of the management. Several members of the team held presentations at various meetings on the specific stages the project found itself over time, including internal workshops for the foreign project partners, international conferences and ICPDR Tisza group meetings. The idea was also promoted on the national and local level by holding presentations at various conferences and organising information meetings for stakeholders such as farmers, mayors, water management specialists and agricultural extension workers.

Serious efforts were made to appear in the press and in a number of other media, including the Hungarian television which aired an interview in prime time with Project Manager Mr. Péter Balogh on two occasions. The widest circulation and most influential weekly economic magazine, *Heti Világgazdaság* (HVG) ran a full feature article on the ILD concept in Summer 2010 where several project team members could share their views with the public.

#### ILD toolkit: a training material

Project management considered that the accumulated knowledge and the lessons learnt over the – including the applicable extensions – almost two years' long research and the struggle for practical implementation can be best capitalised on by the compilation of a comprehensive training material which is called the "ILD toolkit". This material, available upon request on CD-ROM in Hungarian is aimed at decision makers, public administration officials, authorities, designers and basically any of the stakeholders in the complex ILD scheme. It contains a methodological section and four additional units concerning the Tisza basin management issues: one on the concept of sustainability and the various interpretations of the notion, a second on the geography of the Tisza with a view to sustainability connections. The

third unit deals with the relationship of man and the river, including the impact and consequences of the river regulations both in terms of the natural and the social environment. The fourth unit discusses the emerging solutions, the one proposed by the water management sector, the further development of the so-called Vásárhelyi plan and the other, promoted by the expert team behind the ILD project, the approach based on the natural characteristics of the river.

#### Website

Dissemination of the project results was facilitated to a great extent by the setting up and running of a specific project web site managed by Project Manager Péter Balogh and containing information in both Hungarian and English. For getting access to project documents, interviews and other materials please visit <http://www.ild.eoldal.hu/oldal/english>.

The project awaits continuation. As long as the legal and institutional framework including the financial and organisational consequences is not set up to accommodate the special needs of an ILD approach, there is not much hope to implement controlled discharge of high waters onto the native floodplain of the Tisza and thus to restore the former balance of the water regime. It is up to political decision makers and policy makers to adopt the ILD philosophy and up to water management specialists, agricultural extension workers and government bodies to organise a social system able and willing to accept a radically different approach from that deeply embedded in the public mind so far.

## **7 Achievements of the project and how these benefit Tisza Countries**

The ILD demonstration project in Nagykorú provides a comprehensive, system oriented and holistic approach to simultaneously tackle the priority pressures of extreme floods, sustained drought and occasional excess water within the Tisza floodplain. Hydromorphological alterations of the last two or three hundred years prevented the river from building and eroding its own environment in a dynamic equilibrium which allows for ecosystem services to be taken advantage of. Integrated land management and development would offer an alternative water steering regime where the original – and sometimes still functional – morphological features of the now disconnected, inactive (“protected”) floodplain could be used to skim floods, mitigate drought and manage stagnating excess surface water within large areas of the Holocene meander belt. Such an alternative, fragmented and diverse land use pattern would offer possibilities to a more resilient agriculture and husbandry scheme including the growing of industrial plants such as reed, hemp or biofuel plantations, boost extensive, free ranging livestock production or woodlots for timber and firewood. Also, the system is expected to adapt more readily to much of the expected climate change scenarios. With appropriate changes, the approach can be used at different stages and under various geographical conditions of the Tisza river basin, as demonstrated by the international partners in the upper catchment section in Romania and in the river flats in Serbia.

Actual achievements of the project include a comprehensive 167 pages manual on the theoretical background, barriers and opportunities and practical implementation projects, lessons learnt and case studies on or related to the integrated land development concept, a legal review of the five riparian countries with a view to their respective ILD potential in terms of legislation, the surveying and preparation for the proposed land use change of a pilot

site on the inactive floodplain in the outskirts of Nagykörű, a landscape design for this site and feasibility studies of the partner organisations. Dissemination of project results was effectuated with the help of the media, training sessions, a website and the development of an ILD toolkit. The toolkit's contents is presented hereby in the form of a table of contents attached to the copies of reports annex, the toolkit itself is available in Hungarian on a CD and shall be mailed under separate cover.

## **8 Experiences and examples of Integration**

Integration of water quantity and water quality related issues is only the very first step of a really comprehensive and complex River Basin Management Plan and reflects the concerns of a single sector. A more interdisciplinary integration of issues is required where the concerns and development potentials of all the main sectors is taken into account. That is, beside water management issues in the strict sense issues related to land use, land management, agriculture, agrarian market, forestry, infrastructure and rural development must be organically woven into the management plan. For instance, in terms of labour, long term labour intensive employment is necessary, as opposed to transient jobs created by heavy industrial investment projects and large scale construction works. Also, a complex, integrated and adaptive social and economic development should be outlined taking advantage of nature's services including ecosystem services specific to the river and its valley. The ILD concept and the experiences gained throughout the project both in terms of data collection, research and practical execution efforts can be used to adapt integrated management plans more to the specific conditions of the Tisza.



## 9 Logframe Indicators and results

### Goal: Integrated land development (ILD) program to improve land use and water management efficiency in the Tisza basin

Project Strategy	Objectively verifiable indicators			Sources of Verification	Results
	Indicator	Baseline value	Target (EOP) Value		
<p><b>Project Objective:</b></p> <p>To develop integrated land and water management protocol through case studies to support efficient water and land management at areas with high risk (drought, stagnating water, flood, biodiversity loss)</p>	<ul style="list-style-type: none"> <li>• ILD Protocol based on Tisza catchments countries legislation and governance</li> <li>• At selected pilots sites ILD implemented</li> <li>• Water management measures to support water retention capacity development and lowering risk at low and medium elevations - plan and implementation for Nagykőrű basin</li> </ul>	<ul style="list-style-type: none"> <li>• Zero</li> <li>• Some initiative can be used as input for development (eg. Jand), but comprehensive approach did not take place so fare.</li> <li>• Zero. Water infrastructure (drainage, pumping stations, irrigation) are for drainage and not supporting multifunctional purposes</li> </ul>	<ul style="list-style-type: none"> <li>a) one protocol specified for min. 2 other countries</li> <li>b) HU - 1 pilot implementation, 1 massive training, Ro-RS pilots are developed - feasibility, project proposal prepared</li> <li>c) Affected parcels channels will be modified to support multipurpose goals</li> </ul>	<p>Project documentation and approval of the Advisory Board Pilot maps and reports Plan and report of implementation</p>	<ul style="list-style-type: none"> <li>• ILD manual completed</li> <li>• Implementation at selected sites partly completed</li> <li>• Physical execution of the proposed changes failed due to stakeholder resistance and legal barriers</li> </ul>
<b>Outcome 1:</b>	ILD Protocol based on Tisza catchments countries legislation and governance, decision making framework	zero	1	Report of the project	ILD Manual for Hungary completed
Output 1.1	Legal overview of the 3 participating countries, general comparison for all Tisza countries by questionnaire	zero	1	Assessment report based on all Tisza countries contributions	Legal review for all five riparian countries completed
Output 1.2	Analysis of legal constrains through the implementation of the pilot sites	Undivided joined property and LU change are identified problems - proper efficient tools are not available in HU	New legislation draft harmonized with existing ones	Approval of the Land Use Change at pilot site Lessons for national level	Cooperation with water authorities and participation in the policy making work of the Ministry of Rural Development. Land use change failed.
Output 1.3	Recommendation on good governance for sub-catchments, small landscapes in light of the proposed changes for water retention areas in the Tisza basin	Not existing	Proposal for governance	Common report for all participating countries ILD documentation toolkit	ILD summary for Tisza wide distribution in Hungarian and English completed



<b>Outcome 2:</b>	ILD at selected sites implemented	zero	2 minimum	Local maps, land registry	Four steps of the seven necessary actions completed.
Output 2.1.	Data and information system locally to support the ILD process, including economic data on local business and ecological services	Based on existing data - land categories, agriculture figures- need for integration and further data collection on ecosystem services and benefits from LUC	1 system prototype	Project reporting	Data gathering and processing completed for the selected site
Output 2.2.	Elaboration of different LUC alternatives by participative processes on LD alternatives for the selected sites - based on DTM, water balance	zero	Selection of potential sites, parcels for implementation	Agreement at pilot sites for combination of solutions	Selection procedures of four possible sites completed. Four alternatives for the selected site developed
Output 2.3.	Water management measures planned and verified by waterboard (WB) and water directorate (WD) at selected sub-basins/sites Implemented ILD at selected sites, including measures for water steering improvement where it is appropriate	Base: present management and plans	Approved version of management plans for 4 sites 1 site implementation in HU	Water board management plan ILD documentation (agreements, land registry changes, etc.)	Water management plans started but not completed due to stakeholder resistance
Outcome 3.	Dissemination of ILD concept and the results in the Tisza basin and at UNDP- ICPDR level	Zero (basic ideas from FARLAND and FAO projects are available)	Outreach in the participating communities and in the Tisza basin	ICPDR reports	Outreach through participation in Tisza Group meetings and presentations achieved
Output 3.1	Trainings at location of implementation and at the partners locations (SR, Ro)	zero	At 2 HU pilots and in the participating countries (Ro, SRG)	Training material and WS reports	Training workshop at partners locations and at Nagykörű completed
Output 3.2	ILD toolkit book + CD	zero	1	Publication	ILD toolkit completed
Output 3.3.	Final Stakeholder Workshop to evaluate the process and to approve the recommendations	zero	1 final SH workshop	WS report	Scheduled for 11-12 April 2011

## 10 Reports prepared

During the project lifetime, the following reports were prepared for ICPDR:

- Quarterly\_progress\_report\_for\_ild\_-\_09\_apr-jun\_fzs.doc
- Landscape strategy
- Barriers and opportunities
- Workshop report Nagykörű 14-15 June 2010.doc
- AGORA Nyiko mente.pdf (project report from Romania)
- Zenta projekt 22 (project report from Senta Municipality, Serbia)
- ILD Manual
- Making It Whole Again. Reconnection of land and water under the integrated land development (ILD) programme (Article for inclusion in the Summary report of the RBM plan) (TRBMP.pdf)
- Short statement of the benefits of the work to the RBM plan (Box.doc)
- Linking water management and land use in a comprehensive planning scheme within the Tisza river basin Presentation at the Tisza Group Meeting, 30 September 2010, ICPDR Vienna (presentation, ILD ITRBM.pdf)
- Pagony technical report (landscape architect) (Pagony ILD mintaterület tájhasznosítása.pdf)
- Interim technical and financial report on 15 December 2010 (Technical Report ILD.doc, TISZA\_ILD\_Financial\_Report\_DemoProject\_HU\_1stinstallment\_13.xls)
- Reports on the work of consultants (Report.doc, Report2.doc)
- Legal review checklist and questionnaire (Hungarian and English)
- ILD comparative legal assessment (in Hungarian)
- ILD Legal review (English)
- List of ILD pilot site land survey documents (Land survey deliverables.doc)
- ILD Toolkit contents (ILD toolkit konc4 BB-BP vég.doc)
- ILD Summary in English and in Hungarian
- This report

### List of publications:

Gergő G. Nagy - Zsuzsanna Flachner: Ecosystem services. Greenfo online Magazine, 2009 (in Hungarian)

Gergő G. Nagy - Zsuzsanna Flachner: Land consolidation experiences in the Nagykörű ILD project, National Rural Development Seminar 2010. (in Hungarian)

Gergő G. Nagy – Zsuzsanna Flachner: Kettős szerepben a Tiszaroffi árapasztó tározó (Greenfo) 2010 (in Hungarian)

Gergő G. Nagy - Zsófia Bakacsi - Zsuzsanna Flachner: Integrated land development in the Tisza valley - Ecosystem approach based methods and approaches to support landscape protection Poster and presentation at the Conference “Conservation of Wetlands in the Carpathians” organised by the programme entitled „Conservation, Restoration and Wise

Use of Rich Fens in the Slovak Republic” of Carpathian Wetland Initiative (CWI) és a UNDP/GEF, 16-19 November 2009 Tatranská Štrba, Slovakia

*Flachner, Zs. – Pásztor, L. – Bakacsi, Zs. – Nagy, G. – Balogh, P. (2010):* The role of 'green water' in floodplain water and landscape management. Poster, Conference „European Geosciences Union General Assembly”, 02-07 May 2010, Vienna, Austria.

*Flachner, Zs. – Nagy, G. G. – Balogh, P. – Borsos, B. (2010):* Integrated land development in the Tisza valley. Poster, Workshop „Integrating land and water management to reduce impacts of floods and droughts on water status in the Tisza River Basin District”, 26-27 April 2010, Szolnok, Hungary.

Flachner Zsuzsa – Nagy Gergő (2010): Tájhasználati váltás lehetőségei a természeti szolgáltatások növeléséért. Az Élhető Vidékért 2010 Környezetgazdálkodási Konferencia (in press)

Nagy Gergő – Lóránt Fehér - Zsuzsa Flachner (2010): Birtokrendezési tapasztalatok egy nagykorúú esettanulmány alapján. Birtokpolitika-földkérdés-vidékfejlesztés országos szeminárium. Poster and Article, in press

Borsos, Béla: Érdekek és érdektelenség a Tisza mentén. Esettanulmány a Vásárhelyi Terv Továbbfejlesztéséről (2010). in: Lányi, András and Farkas Gabriella: Miért fenntarthatatlan ami fenntartható? L'Harmattan, Budapest

## 11 Meetings attended

There were several events directly related to the project, they are listed as follows:

- Project kick-off meeting 27-28 March 2009
- Tisza Group meeting in Budapest, April 2009
- Workshop 1: Senta 15-16 June 2009
- Workshop 2: Székelyudvarhely 21-22 October 2009
- Joint 1st UNDP/GEF Tisza MSP Stakeholder workshop in Kosice, Slovakia on 13<sup>th</sup> November, 2009
- Nagykörú Farmer Forum 27 February 2010
- Nagykörú Farmer Forum 30 March 2010
- Szolnok Tisza Group Meeting 27-28 April, 2010
- Workshop 3: Nagykörú, 13-15 June
- Nagykörú Farmer Forum 15 September 2010
- Tisza Group meeting Vienna 29-30 September 2010
- Project staff meeting on budget revision and modification of activities 8 December 2010 Vienna

Attendance lists of the meetings organised by and from the project funds, the list of participants, dates and venues were attached in the form of Events under the Supporting documents directory of the Interim report submitted on 15.12.2010.

### Staff meetings

Regular weekly project meetings were held at the ELTE University of Sciences or in the office premises of Dr. Béla Borsos UNDP consultant for staff members to discuss ongoing project tasks.

Discussion of Ms. Diana Hellman of ICPDR Vienna and Dr. Béla Borsos on possible cooperation and project management issues on 12<sup>th</sup> March, 2010 in Budapest.

Participation at the Millér inland water drainage canal rehabilitation project inauguration ceremony organised by the regional water management directorate (KÖTIVIZIG) on 30<sup>th</sup> March, 2010 at the old pumping engineering room of the Millér transfer station.

Presentation by technical water management specialists of the regional water management directorate (KÖTIVIZIG) on their prospective plans to design an excess inland water reservoir system using the existing drainage canal network and water steering structures on 30<sup>th</sup> March, 2010 at the Directorate's Headquarters in Szolnok.

### Conferences, workshops and seminars:

Conference "Conservation of Wetlands in the Carpathians" organised by the programme entitled „Conservation, Restoration and Wise Use of Rich Fens in the Slovak Republic" of Carpathian Wetland Initiative (CWI) és a UNDP/GEF, 16-19 November 2009 Tatranská Štrba, Slovakia

The Scientific Scope to find Mutual Solutions in Large River Management and Restoration. Workshop. University of Vienna, Vienna Ecology Centre, Vienna, Austria, 2009. September 7-10

(The future of Tisza water resources. Hungarian Academy of Sciences Budapest, 7 September 2010) in Hungarian

Changes and Relationships. Eisenhower Day of Fellowship in Budapest, 6 October 2010 Obuda University, Budapest. <http://www.uni-obuda.hu>

Ecological service of the River Danube. Workshop conference at the Office of Parliamentary Commissioners 20 October, Wednesday (in Hungarian)

(Why is it unsustainable what is sustainable? Scientific discussions in the Office of the Parliamentary Commissioner for the Future Generations, organised by the Common Heritage Research Workshop at the Faculty of Social Sciences of the ELTE University) in Hungarian 29 October, 2010 Budapest

Do it! Local varieties in local food supply. Workshop on the diversity of cultivated plants and their role in local food systems. Szeged, Hungary 25 February, 2011.

### To be attended:

International Conference for the Tisza Catchment Area Development (TICAD) under the South-East Europe Transnational Cooperation Programme in Szeged, Hungary, 25<sup>th</sup> March, 2011

## 12 Summary of PR activities

Ongoing promotion of ILD and related matters in the local Nagykörű Newsletter and the SZÖVET Newsletter was a continuous effort throughout the project lifetime. Also, the freshly established connections with government and parliamentary officials was followed up on. The public relation efforts of Szövet and the project team focused on both local, national and international level. Farmers' forums were held to promote the ILD idea, press releases and feature articles made in order to inform people on the potential of an alternative approach to flood control and surface water management. National television coverage was produced for the idea in prime time on MTV. The project set up and runs an independent website with ILD related content. International dissemination is being provided by Panorama Magazine of DG REGIO, which runs an article on ILD on Page 37 in the current issue, in press. A list of the publications, website ads and other media and press materials produced during the project is attached under the copies of press releases annex, including some of the key documents published.

## 13 Lessons learnt

Over the project activities, a number of conclusions could be drawn and lessons learnt for future use. These included the following:

- the human factor (and in particular that of land owners and land users) need to be taken into account and various alternatives developed for tackling it:
  - convey a clear and concise, but simple message as to what the project wants
  - raise their interest by making them holding a stage
  - offer multiple choices in benefits:
    - use their land in return of a proper lease
    - buy it
    - provide some off-set (another operation at some other place)
- the water management should have more integrative (multidisciplinary or even transdisciplinary) approach, while the short term expectations are pushing their activities to be more narrow minded (see WFD meetings reports.) These conflicts need to be elaborated, solutions found.
- key lessons of WFD RBMP participation process need to be discussed at ITRBM level on a very honest way, without hurts, but highlighting the minimum time and methodological requirements of effective participation
- Central political will is necessary to remodel a number of legal provisions in order to create the path towards ILD

- Achievement of any of the former goals can not be accomplished without intensive and substantial education of all stakeholders ranging from the political decision makers to local farmers and inhabitants.

The lessons learnt were used for refurbishing the project and to revise the budget according to the actual spending needs. The message was that practical implementation on any larger scale is absolutely impossible unless the aforementioned condition precedents are met.

#### **14 Sustainability of project activities and achievements**

Sustainability of the project activities is mostly ensured by the ongoing lobbying, professional work and networking of both Szövet and the associated experts within the international and national arena. The pilot site can be converted to an ILD demonstration site any time when the owners/users agree to do so. The toolkit can be used in further projects like the ENPI proposal to educate stakeholders, project reports such as Landscape strategy, Barriers and opportunities or the comprehensive Manual can be references in similar work and the promising cooperation with the Ministry of Rural Development may mark the dawn of a new era. Project results dissemination is an ongoing process, for instance after project closure, on 25<sup>th</sup> March 2011 UNDP technical advisor Dr. Béla Borsos will present the achievement of the ILD project at the International Conference for the Tisza Catchment Area Development (TICAD) under the South-East Europe Transnational Cooperation Programme in Szeged, Hungary.

#### **15 Potential for replication in Tisza (and wider Danube) region**

ENPI project: Some of the project participants contributed to the project proposal submitted by UNDP Bratislava under the EU ENPI project funding scheme with the intention to further disseminate the project in Slovakia and Ukraine, the two riparian countries not included in the current project.

STIRD project: Discussion with Dr. Mi-Yong Lee-Peuker from the Helmholtz Centre for Environmental Research – UFZ Economics Department about the possible participation of the ILD project team in the STIRD (South Tisza Inter-Region Development Project)

As for the wider Danube region, further research is needed whether or not and where in the region physical geography concurs with that of the lower Tisza valley. Albeit the ILD principle can be applied anywhere, the actual concept and methodology needs a river plain with alluvial sediment and not too heavily modified river structure which is not always the case with rivers within the Danube River Basin.

#### **16 Annexes**

### **16.1 Final Project proposal**

See attached in a separate file entitled ILD\_project.pdf.

### **16.2 Copies of all reports prepared**

Copies of reports submitted throughout the project are attached under separate cover. The list of reports is included herein under Section 10 Reports prepared.

### **16.3 Copies of all presentations**

Copies of the presentations throughout the project are attached under separate cover. The list of the meetings related to such presentations is included herein under Section 11 Meetings attended.

### **16.4 Copies of press releases etc**

Copies of the press releases, publications and other media coverage achieved throughout the project are attached under separate cover.

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# FINANCIAL PART

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## 1 Explanation of cost items in the financial report

Costs accounted for in the financial report submitted on 15 December 2010 reflect the expenditures incurred at the expense of the 1<sup>st</sup> instalment, received at the beginning of the project activities and a part of those of the 2<sup>nd</sup> instalment, which have been advanced by Szövet's own resources up to the receipt of the 2<sup>nd</sup> instalment. Justification of the items included therein was provided in the Technical part of the 15 December 2010 submission. Such costs have been approved by the ICPDR project management and financial department with the reservation that two items (Staff cost variations and accounting of Service Contracts related costs) shall be verified by the final audit of the project finances.

The current final report contains a consolidated financial report completed with the 3<sup>rd</sup> instalment, i.e. the cost items incurred since the submission of the December 2010 report. The following explanations concern items in the 3<sup>rd</sup> instalment worksheet of the finances Excel table. The cost items are based on the contract addendum signed by ICPDR and Szövet on 15 December 2010.

### Project staff:

Costs related to staff members of Mr. Péter Balogh Project Coordinator and Lead Expert and Andrea Szabadkai, staff member from 1<sup>st</sup> November, 2010 to 28 February, 2011 are reflected under this heading. As Andrea Szabadkai was on holiday in November and December, her salary is accounted for only in January and February. The wage related expenditures have changed repeatedly, as the rules of Hungarian accounting and the rates of wage related contributions (social welfare system, health insurance, etc.) varied again.

### Travel and workshop costs

Travel costs mostly relate to project organisation and dissemination. For practical reasons, most project meetings were scheduled in Budapest, as most project contributors have their permanent residence in this city. Mr. Balogh visited the project partners in Romania and in Serbia, while Ms. Szabadkai commuted from Gödöllő (her home town) to project meetings in Budapest by community transport.

### Service contract:

Project partners were paid through service supply contracts. AGORA and Senta Municipality received the second half of the agreed amount for their contributions to the legal review document and the preparation of the final report on their respective pilot sites.

White Golden Book Ltd. provided the man power necessary for developing the questionnaire and prepared the background legal material used for the Legal Review document (the questionnaire and the legal material are attached as supporting documents). The second instalment for Golden Book Ltd. was disbursed in return of the background material for the comparative assessment of the legal situation in the four riparian countries (Serbia, Romania, Ukraine, Slovakia).

Pagony is the landscape architect firm which prepared the four versions of visual images, landscape utilisation schemes and technical descriptions in respect of the pilot demonstration site N-plum orchard. Their report is attached under the copies of reports annex.

The practical implementation of the pilot project in the Nagykörú area has become a possibility by the end of Summer 2010. This was the result – among others – of a one year long cooperation with a surveyor who provided the necessary drawings for the consultations and negotiations. The process was concluded and his costs are reflected in the Service contracts section. The list of documents delivered are attached as part of the copies of reports.

As interim project reporting was protracted for several reasons, it was decided to hire a professional translator to complete the translation and editing of the legal review from Hungarian into English and the project summary from English into Hungarian. His costs are covered under the Service contracts items, the translations (Legal review and ILD összefoglaló, respectively) attached in the copies of reports annex.

A press agent was employed throughout the second half of the project to organise communication with media.

Dr. Béla Borsos, project consultant from UNDP was employed to complete several tasks on the project. His contributions in the preparation of the interim report – mainly in the form of translation, editing and expert consultancy services, contact management with ICPDR – are accounted for in the Service contracts section under the contract concluded with Dióliget Bt. The preparation of the original project summary is accounted for under the contract concluded with Borsos Consulting Ltd. Both companies are owned by Dr. Borsos. Copies of the interim report and the ILD Summary are attached in the copies of reports section.

All service contract items are accounted for exclusive of V.A.T.

#### Communication costs:

Most items of communication costs relate to mailing and telephone costs. Internet advertisements were also promoted. These cost are reflected in this section as well.

#### Office supplies

Hospitality:

No hospitality cost was incurred from 1 December on.

Printing costs:

No spending was necessary under this heading.

Materials and equipment

Equipment costs could be reduced to a minimum again as opposed to the original budget. However, it was found to be necessary to replace the failed hard disk in the project computer.

## **2 TISZA\_ILD\_Financial\_Report\_DemoProject\_HU\_Final\_1.xls**

The complete financial report is attached as  
TISZA\_ILD\_Financial\_Report\_DemoProject\_HU\_Final\_1.xls

Substantiating accompanying documents (invoices, attendance lists, contracts, performance certificates etc.) are submitted in hard copies under separate cover.