



**LIFE10 NAT/SI/142**

**Inception Report**

**Covering the project activities from 01/01/2012 to 30/09/2012**

**30/09/2012**

**Restoration of the Ljubljanica River corridor and  
improvement of the river's flow regime**

<b>Project location</b>	Ljubljana, Slovenia
<b>Project start date:</b>	01/01/2012
<b>Project end date:</b>	31/12/2012 Extension date: -
<b>Total budget</b>	1.188.015,00 €
<b>EC contribution:</b>	584.382,00 €
<b>(%) of eligible costs</b>	50 %
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## **2. List of abbreviations**

MKO ... Ministry of Agriculture and the Environment

MOL ... Municipality of Ljubljana

UL ... University of Ljubljana

### **3. Executive summary**

#### **3.1. General progress**

All measures specified in the grant agreement have been successfully launched. All partnership agreements are signed and co-financing is available. The dynamics of the implementation is in line with project timetable and significant obstacles are not envisaged.

To perform the planned actions, we have intensively communicated with all partners, collected a lot of working material and performed field. Data have been integrated into GIS system. There has been a lot of external communication with national, regional and local administrative offices and other nongovernmental organizations.

#### **3.2. Assessment as to whether the project objectives and work plan are still viable**

The achievement of project objectives is feasible.

We have developed a common technical language and easy communication among the partners (same locations names, project orientation elements...). Every partner had been delegated specific role in the project, but all participants needed half a year to know details and to feel comfortable. The joined group field visits have been crucial for the start of the project. We have developed mutual respect among partners. So far, we evaluate that the approach and methodology are successful.

#### **3.3. Problems encountered**

We are late in purchasing monitoring equipment (3D velocity meter) due to the complex public procurement procedures (public tender). However, the delay is not significant. We had some delay in signing the contract between the partners, but now all contracts have been signed. In February this year, new government of RS separate Ministry of Environment and Spatial Planning. Administration responsible for Environment joins with

Ministry of agriculture in new Ministry of Agriculture and the Environment (MKO). The contract for financial support of the project signed 20th September 2012 and representative of MKO nominated in September, that postponed some of activities little bit, but we expect that we finished our task to the end of the year and work on the project next year will be develop on time.

Only workshop (action E4) postponed for next year, because II.nd International Hutch Symposium was held in Łopuszna (49.47890N, 20.13348E), Poland, on 19th-22nd September 2012

In terms of achieving the objectives this is not regarded as a major problem and this could not affect the implementation of first Concrete conservation action C1 “Sill in Zalog” (30.6.2012).

## **4. Administrative part**

### **4.1. Description of project management**

We have several project meetings (12.1.2012, 21.02.2012, 7.03.2012, 20.03.2012, 15.03.2012, 18.05.2012, 29.05.2012, 22.06.2012) with beneficiary partners; MSc Andrej Vidmar (UL FGG), prof. Dr. Mitja Brilly (UL FGG), MSc Zoran Stojič (Geateh) and Matej Stegel (Purgator).

The project was present to Deputy Major of Ljubljana city prof. Janez Koželj at the meeting 12.01.2012. On the meeting we receive fully support from Deputy Major and promise that representative of MOL will be nominate in Steering Committee.

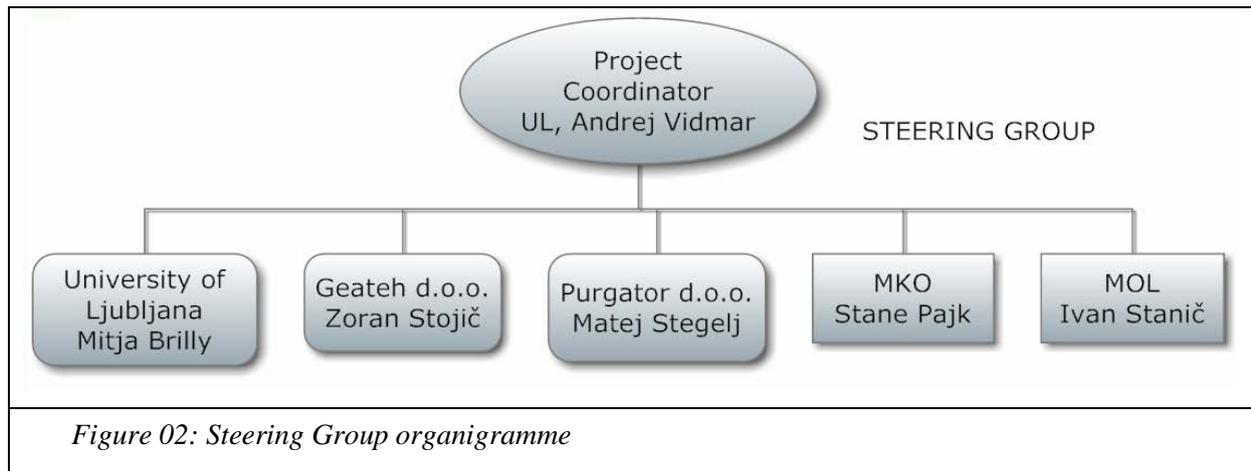
Zoran Jankovič, Mayor of Ljubljana nominate Ivan Stanič as representative in Steering committee at 14.09.2012. MKO nominate representative Stane Pajk at 20.9.2012. Development on the project was presented on the meeting 10.10.2012 at the Ministry of Agriculture and Environment.

We have some visits and meeting with stakeholders; Krajinski park Ljubljansko Barje, with director of paper mill “Papirnica Vevče” and technician operator with Fužine weir on 15.5.2012, with fish angling associations CO Ljubljana which include 4 angling clubs Vevče, Barje, Dolomiti and Vrhnika 21.11.2012 (Figure 01).



*Figure 01: Meeting with Ljubljana district Angling Clubs (RD Barje, RD Vrhnika, RD Dolomiti and RD Vevče), 21.11.2012*

#### 4.2. Organigramme of the project team and the project management structure



The Steering Committee was established with members:  
Andrej Vidmar (UL FGG),  
Mitja Brilly (UL FGG),  
Zoran Stojč (Geateh),  
Matej Stegel (Purgator),  
Stane Pajk (MKO ARSO); Ministry of Agriculture and the Environment,  
Ivan Stanič (MOL), Municipality of Ljubljana



*Figure 03: Steering Group meeting, 12.11.2012*

### **4.3. Partnership agreements status**

Partnership agreements are all signed:

between University Ljubljana, FGG and Geateh d.o.o., signed 23.01.2012 and

between University Ljubljana, FGG and Purgator d.o.o., signed 01.06.2012.

Signed contracts are in annexes.

## 5. Technical part

Project background and the main objective of the project is reestablishment and improvement of the ecological functioning of the heavily degraded Ljubljana River corridor upstream and downstream of the Ljubljana urban area towards the confluence with the Sava River and further upstream along the Sava River as an important habitat for the fragmented and heavily endangered population of Danube Salmon (*Hucho hucho* - EU code 1105), Danube Roach (*Rutilus pigus* - EU code 1114) and Striped Chub (*Leuciscus souffia* - EU code 1131). Through implementation of the restoration measures, the Ljubljana River channel role of a habitat of high biotic diversity will be renewed. Presently, it represents a habitat for 26 different native fish species, 7 of them are included in the Habitat directive (*Eudontomyzon mariae* - EU code 1098; *Hucho hucho* - EU code 1105; *Barbus meridionalis* - EU code 1138; *Leuciscus souffia* - EU code 1131; *Rhodeus sericeus amarus* - EU code 1134; *Rutilus pigus* - EU code 1114; *Cobitis taenia* - EU code 1149; *Cottus gobio* - EU code 1162). By restoring the corridor continuum, the Ljubljana River corridor will function as a passage or stepping stone that will connect the upstream Ljubljansko Barje Natura 2000 site (code No. SI3000271) with floodplain areas that are positioned downstream of the urban area of the city of Ljubljana and further upstream along the Sava River, the Natura 2000 site Sava-Medvode-Kresnice (code No. SI3000262), (indicated on a map). In this way, onetime unified population of Danube Salmon along Ljubljana and Sava River could be reunited. The project therefore aims at restoring the ecological coherence and connectivity between the Ljubljansko Barje wetland with tributaries, the downstream Ljubljana and Sava River corridor. The ecohydrological conditions in the Ljubljana River corridor namely influenced the development and presently maintain the unique habitat conditions in the Ljubljansko Barje wetland area in a fragile ecological equilibrium.

The project aims to improve the coherence of Natura 2000 sites by restoring the functionality of the Ljubljana River as a corridor linking two sites: Ljubljansko barje (SI3000271) and Sava-Medvode-Kresnice (SI3000262). This will be achieved by removing barriers to restore fish migration, by enhancing and restoring habitats, improving the water management infrastructure, and putting in place a water monitoring system.

## 5.1. Actions

### 5.1.1. Action A1 Preliminary studies

We began to compile the existing data on habitats and morphological data of the stream. Also, we collect the basic data for hydrological and hydraulics models. We collect data from fish angling associations and reports from previous developed research:

“Ocena ekološkega stanja reke Ljubljanice – ribe” (“Assessment of ecological status of the Ljubljanica River – FISH”), by Dr. Meta Povž and Mag. Suzana Šumer, 2007 (slovene) and some deliverables in URBEM project by UL FGG (English) (Annex 7.4 Other).

Dr. Meta Povž and Mag. Suzana Šumer made survey of ecological condition of river Ljubljanica. They monitored the river from the source to the confluence with the Gruber canal in the city of Ljubljana. In addition, historical data about fish on the surveyed part of Ljubljanica were collected. 41 different fish species were registered, among them 31 fish and one lamprey was autochthonous and 9 were aliens. On the basis of historical and acquired data of fish populations they judged that the river Ljubljanica is in moderate ecological status. Ecological potential of the urban river area was not estimated because of lack of proper recent ichthyologic data. The river Ljubljanica fish population is mainly under control of fish angling associations Barje and Vevče, figure 04.

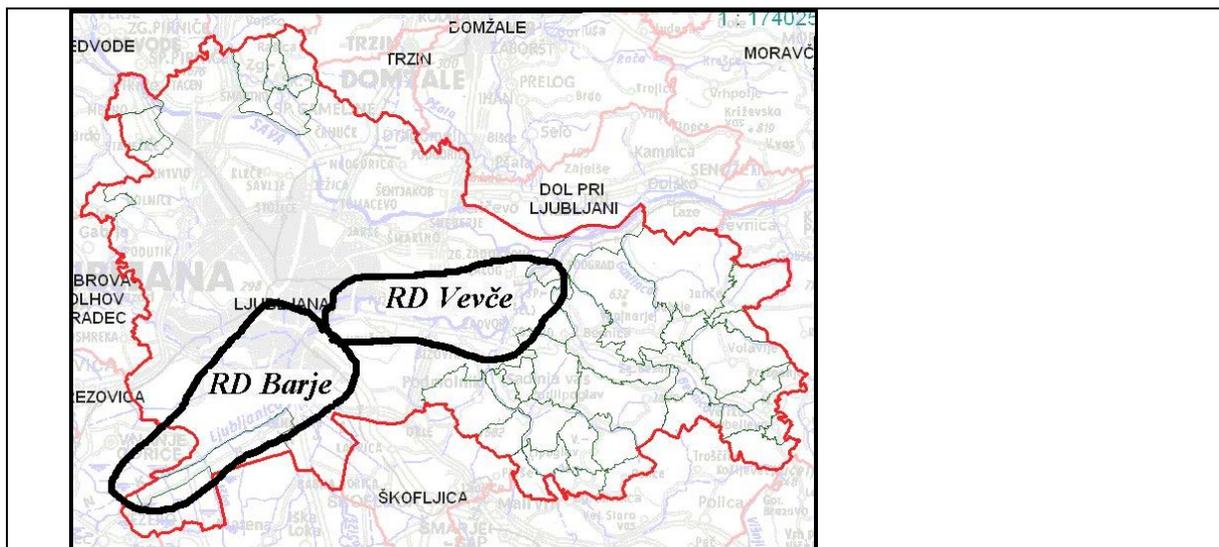
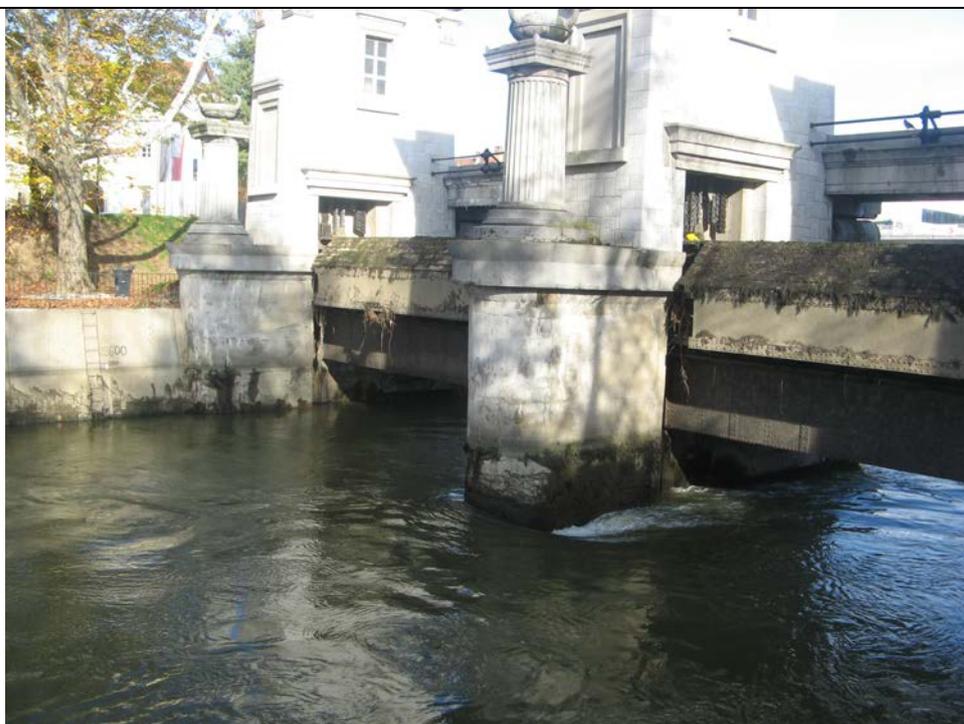


Figure 04: Border of municipality of Ljubljana and areas under control of different fish angling associations

Ljubljana basin covers an area of 1900 square kilometres what represents almost one tenth of the whole country. The river is 41 kilometers long, which basin is habitat with high diversity, so a real natural museum to comprehend karst secrets, its flora and fauna and human adaptation to nature.

Regulation of Ljubljana started in Roman times, when they were draining and cultivating Ljubljansko Barje and performed regulations of some streams. All the regulations in the 18<sup>th</sup> and 19<sup>th</sup> century and in the first half of 20<sup>th</sup> century were designed for draining and colonizing Barje and preventing floods in the city. They intentionally started to manage the stream of River Ljubljana between 1724 and 1758. In 1772 they started building Gruberjev prekop but the channel was too tight and shallow so that there were still floods in case of heavy rain.

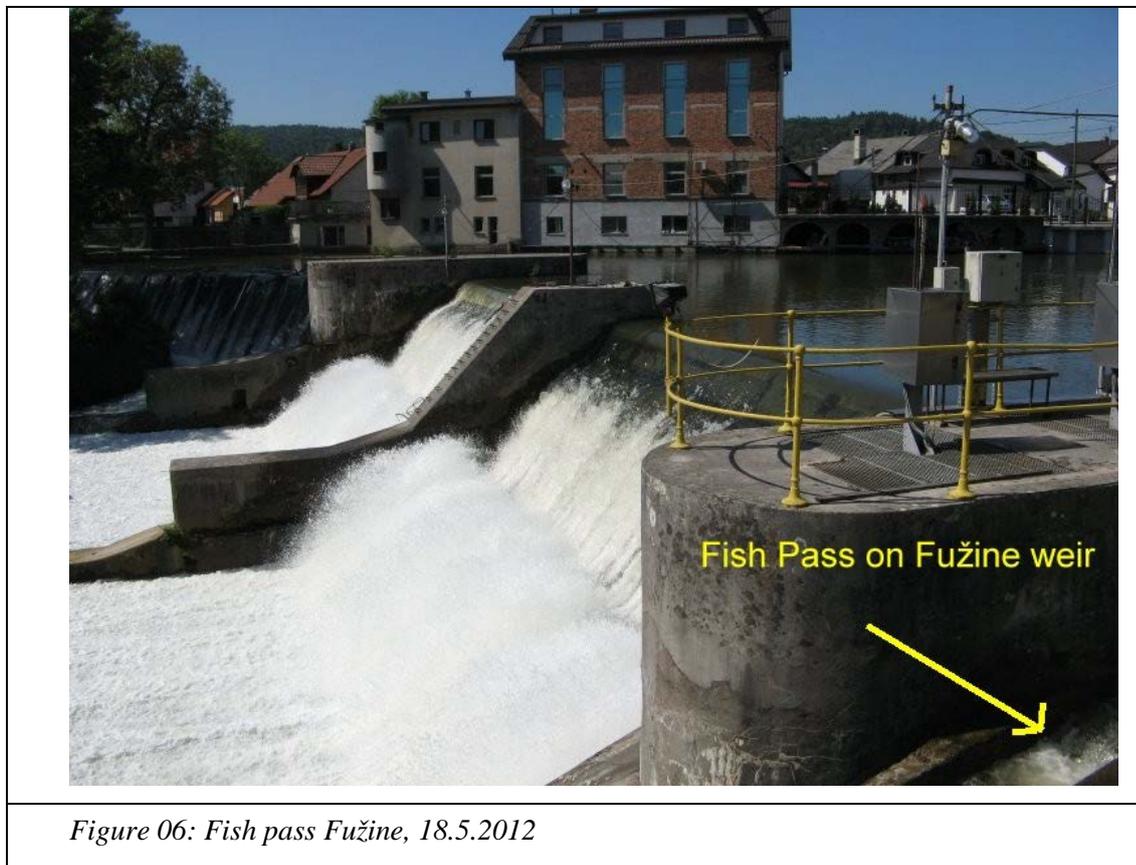
River Ljubljana is today more or less regulated with trees and bushes growing on the banks up to the confluence with Gruberjev prekop. Two kilometers long part of the river between confluence with Gruberjev prekop is a candidate for a transformed water body. The reason is stream which is made of concrete and the presence of Plečnik barrier which dams the river. It was built between 1939 and 1944 and has a purpose to regulate the water level in the city center (Action C3).



*Figure 05: Opened Ambrož weir, 8.11.2012*

Downstream from the confluence with Gruberjev prekop in Fužine and in Vevče is the stream regulated with soil banks. In this segment by the Fužine castle there is a dam built in 1900, which prevents fish migration from River Sava to River Ljubljanica because of the hydroelectric power station. Next to the dam there is a fish pass but it is closed for some decades now (Action C2).

Downstream from Vevče up to the outflow the stream is less and less regulated, while the banks are more natural and covered with trees and bushes. On both obstacles, by the barrier and by the dam, they build fish passes as a mitigation measure.





*Figure 07: Downstream fish pass Fužine, 18.5.2012*

#### Fish species and their range in River Ljubljana basin

Information about fish species were collected for the whole hydro graphic basin of Ljubljana from spring to the outflow in River Sava, what exceeds the borders of Community of Ljubljana. Whereas other information were confined only to the Community of Ljubljana. The area they were dealing with is managed by fish association Barje and Vevče. From fishing breeding plan of these two managers they collected information about fish species and sport fishing for the period 1981 to 2006. From fishing breeding plan of fish association Vevče they got information about the catch of fishes from Vevče to the outflow for the period 1981 to 2006. They used this information to compare historical and recent state of ihtiofauna in Ljubljana and to give an expert estimation of population of different fish species. Other information were collected from private base of freshwater fishes in Slovenia, unpublished manuscripts, publications in different gazettes, oral tradition of older fishermen and from older literature about River Ljubljana and its tributaries.

This was the first ihtiological survey to estimate the fish population in the Community of Ljubljana. Therefore the only available information's are information's from fishing

breeding plan of fish associations Barje and Vevče. According to this information's 41 different species of fish (considering one species of lamprey) live in River Ljubljanica from Podpeč to the outflow in River Sava. Among them there are 32 autochthonous and 9 alien species from 13 families: 4 species belong to family Salmonidae, 23 to Cyprinidae, 2 to Percidae, 3 to Cobitidae and 1 to families Thymallidae, Cottidae, Esocidae, Siluridae, Barbatulidae, Centrarchidae, Ictaluridae, Gadidae and Petromyzontidae (Table 01). Ciprinid species are prevailing. Two species (Danube Salmon and Danube Roach) are endemic to Danube basin.

Table 01: Fish species in River Ljubljanica from Podpeč to the outflow in Sava river (source: fishing breeding plan), **Alien species are red colored**

<b>salmonid species 5 species</b>	<b>cyprinid species 35 species</b>
<b>Salmonidae</b>	<b>Cyprinidae</b>
Salvelinus fontinalis	Rutilus rutilus
Salmo trutta m. fario	Rutilus pigus
	Cyprinus carpio krap
Hucho hucho	Chondrostoma nasus
<b>Oncorhynchus mykiss</b>	Squalius cephalus
Thymallidae	Leuciscus souffia
Thymallus thymallus	Scardinius erythrophthalmus
	Tinca tinca
	Alburnoides bipunctatus
	Gobio obtusirostris
	<b>Hypophthalmichthys nobilis</b>
	<b>Hypophthalmichthys molitrix</b>
cyclostomata	Barbus barbus
	Barbus balcanicus
Petromyzontidae	Alburnus alburnus
Eudontomyzon mariae	Phoxinus phoxinus
	Abramis brama
	Rhodeus sericeus
	Carassius carassius
	<b>Carassius gibelio</b>
	Cyprinus carpio
	Vimba vimba
	<b>Ctenopharyngodon idella</b>
	<b>Pseudorasbora parva</b>
	Percidae
	Perca fluviatilis
	Lucioperca lucioperca
	Cottidae
	Cottus metae

<b>Salmonidae</b>	<b>Cyprinidae</b>
	Siluridae
	Silurus glanis
	Esocidae
	Esox lucius
	Cobitidae
	Cobitis elongatoides
	Misgurnus fossilis
	Sabanejewia balcanica
	Barbatulidae
	Barbatula barbatula
	Gadidae
	Lota lota
	Centrarchidae
	<b>Lepomis gibbosus</b>
	Ictaluridae
	<b>Ameiurus sp.</b>

In the Table 02 is shown the distribution of fishes along the stream of River Ljubljanica from spring to the outflow. The oscillation of number of fishes in different sections is minimal. This shows that species appear more or less regularly in the whole stream. That is expected for Ljubljanica as typical karst water with a lot of vegetation, which provides enough food, microhabitats and spawning places for fishes.

Table 02: The distribution of fish species along River Ljubljanica from Podpeč to the outflow (yellow color – fish is present)

FAMILY	SPECIES	1 spring– Vrhnika	2 Podpeč	3 - outflow Mali Graben	4 Ljubljana - Vevče	5 - Zalog – outflow in Sava
SALMONIDAE	<i>Salmo trutta m. fario</i>					
	<i>Oncorhynchus mykiss</i>					
	<i>Hucho hucho</i>					
	<i>Salvelinus fontinalis</i>					
THYMALLIDAE	<i>Thymallus thymallus</i>					
CYPRINIDAE	<i>Rutilus rutilus</i>					
	<i>Rutilus pigus</i>					
	<i>Chondrostoma nasus</i>					
	<i>Squalius cephalus</i>					
	<i>Leuciscus souffia</i>					
	<i>Scardinius erythrophthalmus</i>					
	<i>Tinca tinca</i>					
	<i>Alburnoides bipunctatus</i>					
	<i>Gobio obtusirostris</i>					
	<i>Hypophthalmichthys nobilis</i>					
	<i>Hypophthalmichthys molitrix</i>					
	<i>Barbus barbus</i>					
	<i>Barbus balcanicus</i>					
	<i>Alburnus alburnus</i>					
	<i>Phoxinus phoxinus</i>					
	<i>Abramis brama</i>					
	<i>Rhodeus sericeus</i>					
	<i>Carassius carassius</i>					
	<i>Carassius gibelio</i>					
	<i>Cyprinus carpio</i>					
	<i>Vimba vimba</i>					
	<i>Ctenopharyngodon idella</i>					
	<i>Pseudorasbora parva</i>					
PERCIDAE	<i>Perca fluviatilis</i>					
	<i>Stizostedion lucioperca</i>					
COTTIDAE	<i>Cottus metae</i>					
SILURIDAE	<i>Silurus glanis</i>					
ESOCIDAE	<i>Esox lucius</i>					
COBITIDAE	<i>Cobitis elongatoides</i>					
	<i>Misgurnus fossilis</i>					
	<i>Sabanejovia balcanica</i>					
BALITORIDAE	<i>Barbatula barbatula</i>					
GADIDE	<i>Lota lota</i>					
CENTRARCHIDAE	<i>Lepomis gibbosus</i>					
IICTALURIDAE	<i>Ameiurus sp.</i>					
PETROMYZONTIDAE	<i>Eudontomyzon mariae</i>					
	<b>Number of species</b> 41	<b>30</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>26</b>

According to the project proposal, collected information and official methodologies for determination of ecological status we developed “*Protocols and guides for survey of the ecological status, hydrological and hydraulic conditions of the Ljubljana river corridor*” (Annex 7.2 Deliverables).

### **5.1.2. Action A2 Preparatory actions**

We prepared the action plans in detail. We visited the action sites with partners and stakeholders.

This Action serves as a basis for efficient implementation of the restoration actions, envisaged in the project.

In order to organize the project team and in order to clarify the individual obligations of project partners, related to the implementation of Action A2 three meetings were organized during the Inception period. At the meetings all topics, relevant for project implementation have been discussed, especially focusing on the steps needed to commence with physical works at locations (Actions C1, C2 and C3).

It was decided to organize meetings with the key stakeholders in order to clarify ownership issues, individual interests and requests, potential cooperation and support to project and in order to promote the project and LIFE program.

During the reporting period, the Project team held meetings with the following parties:

- City Municipality of Ljubljana, key beneficiary, as owner of certain intangibles relevant for project implementation, and potential supporter of the project activities. Interests and potential synergies with other initiatives the city is planning have been discussed, the issues linked to the ownership have been discussed and clarified, and future cooperation has been agreed upon. The support of the City has been expressed, due to be formalized by end of the year.
- The Fishery Associations, responsible for the fish management in the project locations, where their interests and expectations have been discussed

- Technical staff, responsible for operation and maintenance of barriers and wires, where different technical issues and water flow management practices have been checked and future cooperation has been agreed upon.

By the end of December 2012 it is foreseen to conduct all relevant meetings with the remaining key stakeholders (Slovenian Environmental Agency, Company holding the concession for Ljubljana river bed and river bank maintenance) in order to prepare relevant documentation for obtaining the permits. It is expected that Action C1 which is planned for Q4 of 2012 and Q1 of 2013, will not require any special conditions for obtaining the permit.

As the Actions C2 and C3 are to be implemented during different time periods (end of 2013 and 2014), key focus of activities in last quarter of 2012 will be to obtain relevant permits to engage in Action C1, reconstruction of the fish sill in Zalog.

The project team has, after discussing the topics with relevant stakeholders, especially with the local fishers, decided not to raise the sill for 20 cm, but rather reconstruct the sill to the water level (at the low waters), and make it more watertight, which will be better solution. Reconstructed sill at current height will not influence current river flow regime, as it may potentially occur if the initial concept would be executed, and the water level would be raised significantly. By revised reconstruction plan, the planned result (*improved habitat conditions in the Ljubljana River channel especially in the period of low flows*) will be achieved.

The project partners have conducted series of visits to the project locations, in order to:

- Obtain detailed geodesy of the project area.
- Prepare relevant preconditions for initial development of hydraulic model of the project area
- Design the channel habitat structures
- Prepare the technical documentation

The prepared documentation will serve as a tool for Assessment of the present state of the fish pass at Ambrožev trg barrier and Fužine weir and for Elaboration of the reconstructed fish pass operation monitoring.

Partner, responsible for implementation of Action C1 has employed professional to commence with development of technical documents related to obtaining of permits for C1 action in September 2012. Since then four visits have been made to the project locations, at different weather conditions in order to follow potential challenges related to the planned activities.

In November and December 2012 all documents will be presented to responsible bodies in order to obtain the permit for commencement of Action C1 in first quarter of 2013. It is expected that no project delay will happen, as there should be no significant problems in obtaining the permit.

The process on obtaining the permits at Locations for actions C2 and C3 have also commenced during last quarter of 2012. Relevant information related to the ownership issues are collected, future management of the installations is already discussed with relevant parties, and relevant documents for obtain the permits are being collected. As activities are to be implemented by end of 2013, there are no expectations of any delay, related to the permits.

All stakeholders are at present interested in the project and are willing to cooperate in a positive atmosphere. Although certain ownership issues exist at location C2 and C3, it is not expected that they may hinder the project dynamics.

### **5.1.3. Action A3    *Ecohydrological survey***

We prepared networks for harvested fish at the outlet of the fish runs. We purchased the relevant equipment and made preparations for installation at the outlet of the fish passes.

The target fish species are Danube roach, Danube salmon and striped chub.

#### ***Hucho hucho (Linnaeus, 1758)***

Common name. Danube Salmon, Huchen.

The Danube Salmon is the biggest salmon species in Europe. Largest documented size is 1650 mm standard length and 60 kg, but it might reach up to 1800 mm standard length.

Biology: Feeds mostly on fish. Reaches maturity usually after 4 (males) and 5 (females) years. Reaches more than 20 years and spawn every year. Spawns in early spring, usually March-April, rarely early May, when water temperature reaches 8-10°C. Adults migrate towards suitable spawning grounds. Females defend small territories on the spawning grounds and spawning usually takes place at night. During the spawning act, females and sometimes both sexes excavate a large, deep holes in the gravelly river bed and cover the eggs with substrate. Larvae hatch usually after 25-40 days and stay in the gravel until the yolk sack is used after 8-14 days. Juveniles are benthic and inhabit fast flowing waters. The fingerlings are eating the fry of cyprinid fishes. In European rivers it is mainly the Nase (*Chondrostoma nasus*) fry which emerges at the same time as the Danube Salmon's fry starts to eat.



*Figure 08: Danube salmon, photo by M. Osojnik*

**Rutilus pigus (Heckel 1852)**

Common name: Danube Roach

The Danube Roach is endemic to Danube basin. Its average length is 20-30 cm. Its maximal weight is up to 1 kg and maximal length up to 50 cm.

Biology: Sexual matures after 3 to 4 years, during the spawning time from March to May migrates in the tributaries on the spawning places on gravelly shoals or shallow reaches covered with aquatic vegetation at a depth of about 50 cm. It is lithophytophilic spawner. Feeds on aquatic vegetation (macrophytes, algae). It is endangered by river polluting and river regulations which result in a stronger river flow and destruction of gravelly areas and spawning places. It is legally protected through a minimal daily catch, restricted fishing season and minimum body length of 35 cm. Conservation recommendations are elimination of water pollution and river regulations. In Slovenia it is artificially propagated and has been reintroduced into rivers in which they naturally occur. In the Red List of Fresh Water Fish in Slovenia it is assigned to the category of endangered (E) species.



*Figure 09: Danube roach*

**Leuciscus souffia (Risso, 1827)**

Common name. Striped chub.

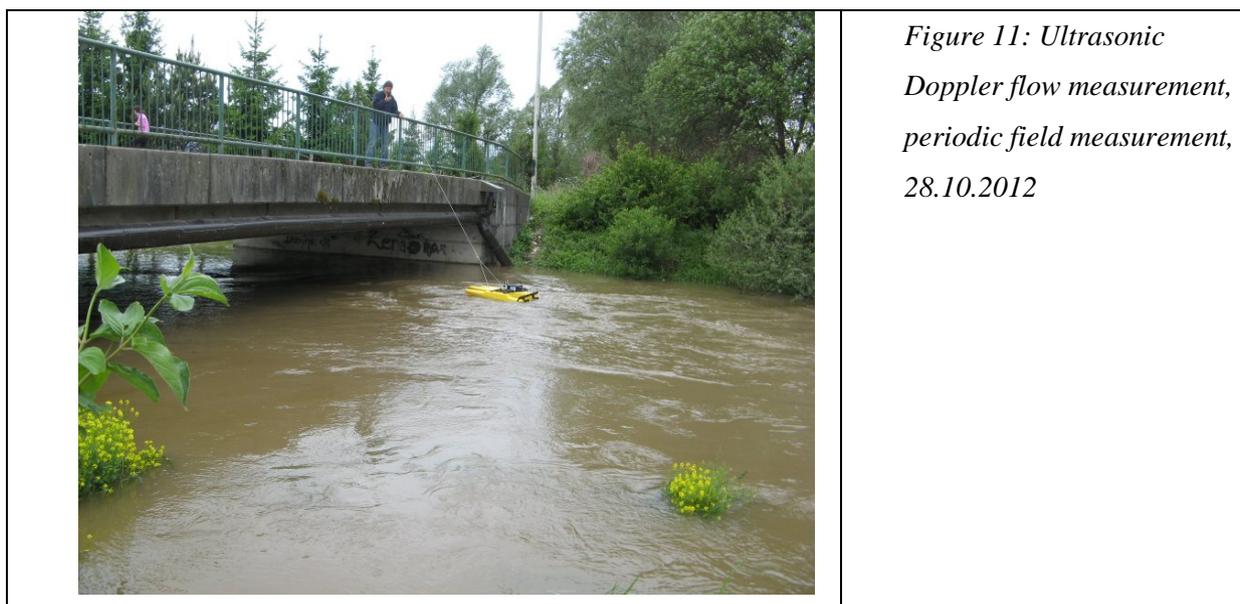
Striped chub is small fish species. Its average size is 12-18 cm, and maximum up to 25 cm.

Biology: It is gregarious fish species. It matures at 3 years and spawns in March to May in areas with swift, shallow water on gravel beds. Spawning males have small tubercles on the head and predorsal area. Striped Chub feed mainly on aquatic invertebrates from the bottom and water surface, and also on epilithic algae. Its habitat is endangered by river regulations (destruction of spawning sites and feeding areas) and water pollution. Conservation recommendations are elimination of water pollution and river regulations. In the Red List of Fresh Water Fish in Slovenia it is assigned to the category of endangered (E) species.



*Figure 10: Striped chub, photo by D.Jelić*

The ecohydrological survey system is established for obtaining continuous data about water level in the Ljubljanica River channel and periodic field survey of biological and chemical parameters. The ecohydrological survey system include construction of 17 water stations Such number of water stations is necessary in order to be able to continuously and precisely monitor water levels along the Ljubljanica River and its tributaries, where Danube Salmon used to migrate. The tributaries of the Ljubljanica River upstream of the Ambrožev trg were in the past important spawning areas of the Danube Salmon, Danube Roach and Striped Chub. Ljubljanica River is a lowland river and every change in its water level can have great impact on the ecological conditions inside the stream channel and surrounding landscape, especially in the area of Ljubljansko Barje. Namely, the water level of Ljubljanica River through SI3000271 Natura 2000 site Ljubljansko Barje is under control of the Ambrožev trg barrier which improvement is considered in action C3. Due to improper Ljubljanica River water level manipulations and consequently too low water levels in the Ljubljanica River, the spawning areas in the tributaries are no longer accessible to the adult Danube Salmon, Danube Roach and Striped Chub. Therefore, the water levels in the Ljubljanica River have to be monitored precisely in order to develop appropriate operation procedures for the Ambrožev Trg barrier. The number of the water stations coincides with the number of the Ljubljanica river tributaries and Ljubljanica river sections where water levels need to be monitored in order to obtain an overview of the water level changes under different flow conditions. Special attention will be given to sections where water level control object are positioned (e.g. Ambrožev trg, Vevče weir, Fužine weir, sill in Zalog).



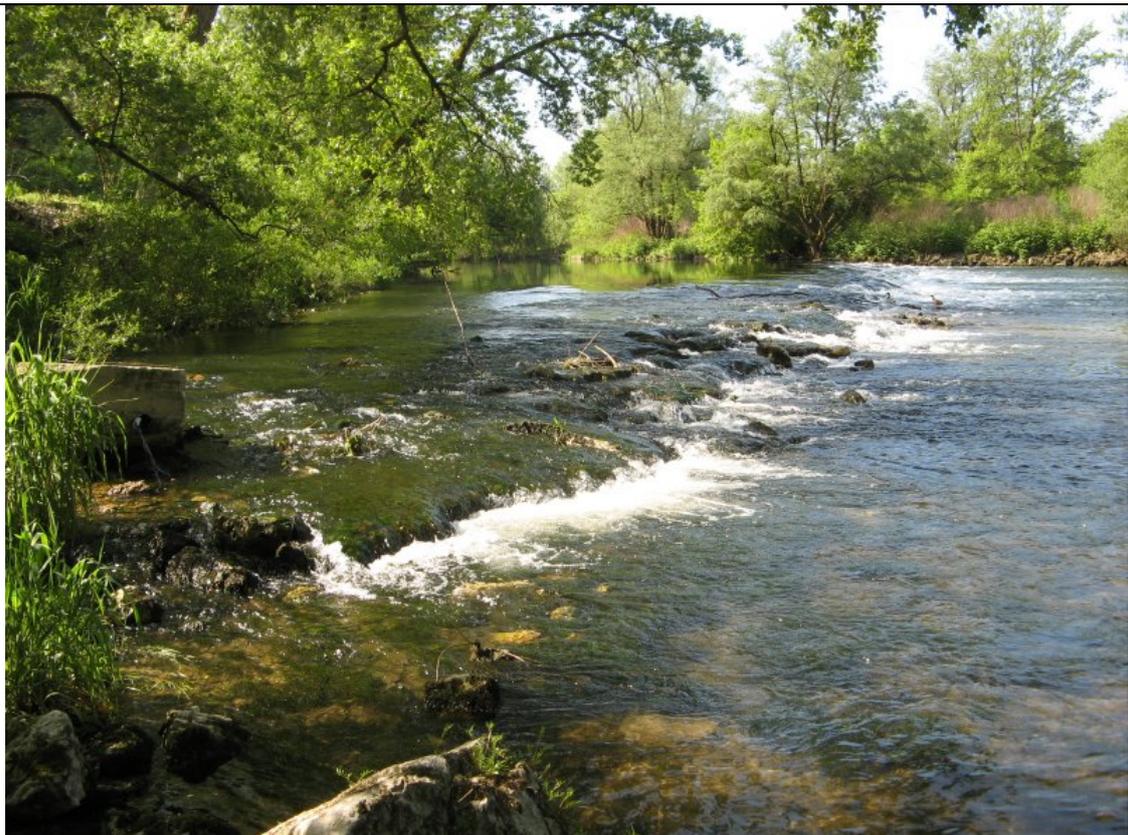
*Figure 11: Ultrasonic Doppler flow measurement, periodic field measurement, 28.10.2012*

#### **5.1.4. Action C1 Sill in Zalog**

The sill in Zalog which controls the water level in the Ljubljana River is heavily damaged and needs to be reconstructed. We will make the sill more watertight. The construction works will include installation of quarry stone (size range 50-100 cm); part of the sill will be reconstructed as a chute which will enable migration of juvenile and adult Danube Salmon, Danube Roach and Striped Chub and other fish. Under the sill a pool will be excavated which could serve as a breeding and spawning place.

The reconstruction of the sill will hold the water level in dry season in the Ljubljana River upstream and also in old river meander Krnica. The sill reconstruction would increase the water abundance in the river channel during low flow conditions.

We performed site visits during different flow conditions. The observations were affected by the amount of water in the state of the abandoned riverbed.



*Figure 12: Sill in Zalog, viewed upstream, 4.5.2012*



*Figure 13: Sill in Zalog, viewed downstream, 4.5.2012*



*Figure 14: Sill in Zalog, viewed upstream, low water stage 5.10.2012*

### ***5.1.5. Action C2 Fužine and Ambrožev trg fish pass***

We made several site visits and performed monitoring of various hydrological conditions. We also interviewed the managers of facilities and made preparations for installation of monitoring networks. Actions C1 and C2 are directly linked to the works that need to be completed for reconstruction of two installations in the Ljubljanica River. Action C1 is linked to the reconstruction of the sill and action C2 aims at completion of relevant works for reconstruction of fish passes. Action C1 is scheduled for the last quarter of 2012, and is due to be completed in the second quarter of 2013. Action C2 is intended to commence in the last quarter of 2013. During the inception period, the associate partner, Purgator inženiring d.o.o. company, has initiated a series of activities needed for establishment of a competent project team, to develop good working relations with the coordinating beneficiary and with the second associate partner, to understand in full the obligations under the contract and to commence initial inspections of both project sites. The company established the internal bookkeeping required for the fulfillment of obligations under LIFE+ rules and regulations, and has opened a separate bank account where the project funds will be located. In September 2012, the company has employed an experienced technical coordinator, who will be responsible for daily project activities. He has been tasked with the preparation of all relevant documents needed for smoother implementation of the next steps of the project, as planned in the project timetable, to complete actions C1 and C2 effectively and efficiently. In order to cope with all the requirements of the assignment it has been decided that the director of the associate partner will be engaged on the project full time, taking the responsibility of the key technical, procurement, and managerial activities. The full time engagement will start in autumn 2012. The dynamics of the implementation is in line with the project timetable and no significant obstacles are envisaged.



*Figure 15: Fužine fish pass, 18.5.2012*



*Figure 16: Degraded old fish pass, 18.5.2012*



*Figure 17: Fužine weir, 18.5.2012*

#### ***5.1.6. Action C3    Ambrožev trg barrier***

After World War II works on the gate (weir) at the Ambrož Square came to an end and no further alterations followed. The gate fulfill concrete stream channel with water and instead shallow water flow with visible concrete bottom, navigable water course and water body deep more than few meters was established.

The gate on the Ambrož Square is also important with regard to management of surface waters and groundwater regime upstream of Ljubljana moor. The Ljubljana moor, a large flat area with an artesian aquifer covered by 20 meters of unconsolidated clay, is highly vulnerable to changes in water regime. Lowering the in stream water level of the Ljubljanica river could cause bank slides and instability of the riverbank in the Ljubljana moor area. Lower in stream water level and indirectly a lower artesian groundwater pressure that caused consolidation of the clay layer, subsidence of land surface of the large flood area.



*Figure 18: Weir at Ambrož Square, view from upstream, 4.5.2012*



*Figure 19: Weir at Ambrož Square, view from downstream, 4.5.2012*



*Figure 20: Side view of Ambrož weir, 4.5.2012*



*Figure 21: Entrance to the fish pass on Ambrožev trg barrier, 4.5.2012*

We have reviewed and prepared structure plans of the existing situation. With our partners we examined the situation in the field.

#### **5.1.7. Action D1 Public awareness**

An internet page with basic information of the project has been developed.

<http://ksh.fgg.uni-lj.si/LjubljanaConnects/>

The hosting server is at UL. All important activities are reported via this page.

We started to establish contacts among the Municipality of Ljubljana, the Fishing Association and the management of the Ljubljansko barje Nature Park.

#### **5.1.8. Action E1 Coordination and administration**

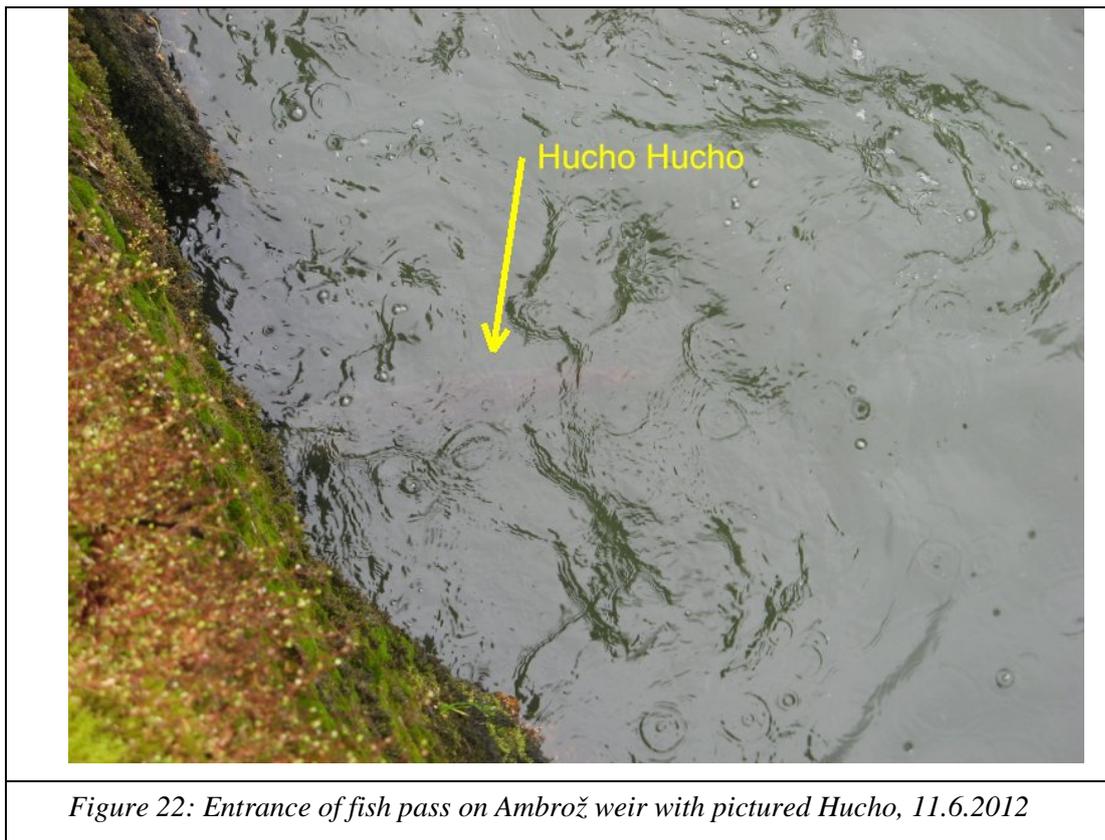
Our work under this action included the organization of project management and performance bases for keeping records of the work performed. We prepared timesheets for this purpose. We defined the bases for issuing the decisions related to the personnel working on the project. For the personnel employed on the project part-time, the procedure for reporting is governed by monthly loads. We made negotiations with partners on the project. We were in conversations with the Municipality of Ljubljana (MOL) regarding the cooperation in the implementation of the project and we met with deputy mayor Mr. Koželj. We made a presentation of the project and signed a co-operation agreement. A representative of MOL was appointed for monitoring of the project. We held conversations at the Ministry of Agriculture and the Environment (MKO) related to cooperation in the project. We drew up the contract on the dynamics of co-financing the project with the MKO. The commission for the implementation of the contracts under the LIFE project was also appointed. Furthermore, we prepared the documentation for the implementation of the contract. We elaborated the technical specifications call for equipment manufacturers. We have continuously made preparations for project-specific actions.

### **5.1.9. Action E2    Monitoring and evaluation**

Action will start in year 2013 according to time schedule of project.

We set up the first three monitoring sites to measure water levels on the Ljubljanica river.

We purchase equipment for water level measurement and for fish monitoring. We performed occasional patrols and monitoring of fish passes.





*Figure 23: Fish pass on Ambrož weir is dry and no-operating when weir is opened, 8.11.2012*



*Figure 24: Fish pass on Ambrož weir, no water flow on downstream side, 8.11.2012*

**5.1.10. Action E3 Management of ecohydrological survey**

Action E3 will start in year 2013. The development of the structure for the hydrological and hydraulics model has started.

**5.1.11. Action E4 Networking with other LIFE and/or non-LIFE projects.**

II INTERNATIONAL HUCHO SYMPOSIUM was held in Łopuszna from 19th-22nd September 2012. The symposium collect researchers form over the world. ([http://www.hucho-hucho.org/files/16/lap\\_\\_\\_abstracts\\_\\_\\_programme.doc](http://www.hucho-hucho.org/files/16/lap___abstracts___programme.doc)).

The objectives that we expect with first workshop are almost achieved. The symposium drop interest for our workshop in year 2012 and we postponed workshop for next year. The contact with experts from Austria and others established.

***We estimate that we will achieve the objectives in all actions.***

## 5.2. Availability of appropriate licences and auhorisations

Not relevant.

## 5.3. Envisaged progress until next report

Tasks/ Activities		2012				2013				2014				2015			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Overall project schedule	Proposed	O												O			
	Actual	1.1.2012				X=Progress reports				X				31.12.201			
Action A1	Proposed	●	●	●	●												
	Actual	■	■	■	■												
Action A2	Proposed	●	●	●	●	●	●	●	●								
	Actual	■	■	■	■	■	■	■	■								
Action A3	Proposed	●	●	●	●	●	●	●	●								
	Actual	■	■	■	■	■	■	■	■								
Action C1	Proposed				●	●	●	●	●								
	Actual				■	■	■	■	■								
Action C2	Proposed							●	●	●	●	●	●				
	Actual							■	■	■	■	■	■				
Action C3	Proposed											●	●	●	●	●	●
	Actual											■	■	■	■	■	■
Action D1	Proposed		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Actual		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Action E1	Proposed	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Actual	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Action E2	Proposed					●	●	●	●	●	●	●	●	●	●	●	●
	Actual					■	■	■	■	■	■	■	■	■	■	■	■
Action E3	Proposed				●	●	●	●	●	●	●	●	●	●	●	●	●
	Actual				■	■	■	■	■	■	■	■	■	■	■	■	■
Action E4	Proposed			●										●	●		
	Actual			■										■	■		
Action E5	Proposed													●	●	●	●
	Actual													■	■	■	■
Action E6	Proposed				●							●	●				●
	Actual				■							■	■				■

## 6. Financial part

### 6.1. Putting in place of the accounting system.

The accounting system was established by opening a special account.

### 6.2. Continued availability of co financing.

Co-financing is provided with partnership agreements.

### 6.3. Costs incurred

<b>Budget breakdown categories</b>	<b>Total cost in €</b>	<b>Costs incurred from the start date to 30.09.2012 in €</b>	<b>% of total costs</b>
1. Personnel	563.621	87.349,34	15,50
2. Travel and subsistence	20.460	0	0
3. External assistance	176.386	0	0
4. Durable goods			
Infrastructure	0	0	0
Equipment	312.287	14.733	4,72
Prototype	0	0	0
5. Land purchase / long-term lease	0	0	0
6. Consumables	31.600	229	0,72
7. Other Costs	7.200	0	0
8. Overheads	76.460	7.160	9,37
<b>TOTAL</b>	<b>1.188.014</b>	<b>109.473</b>	<b>9,21</b>

*Table regarding Incurred costs*

<b>Action number and name</b>	<b>Foreseen costs</b>	<b>Spent so far</b>	<b>Remainin g</b>	<b>Projected final cost</b>
A1 - Preliminary studies	39.931	27.468	12.463	39.931
A2 - Preparatory actions	30.321	11.191	19.130	30.321
A3 - Ecohydrological survey	77.238	23.399	53.839	77.238
C1 - Sill in Zalog	91.531	0	91.531	91.531
C2 - Fužine and Ambr. trg fish pass	188.750	0	188.750	188.750
C3 - Ambr. trg barrier	210.017	0	210.017	210.017
D1 - Public awareness	44.465	0	44.465	44.465
E1 - Coordination and administration	197.760	28.485	169.275	197.760
E2 - Monitoring and evaluation	134.528	5.086	129.442	134.528
E3 - Management of ecohydrological survey	70.180	4.069	66.111	70.180
E4 - Networking	6.789	2.035	4.754	6.789
E5 - After LIFE conservation plan	12.045	0	12.045	12.045
E6 - Financial audit	8.000	0	8.000	8.000
<b>TOTAL</b>	<b>1.111.555</b>	<b>101.733</b>	<b>1.009.822</b>	<b>1.111.555</b>

*Table regarding Form B*

## **7. Annexes**

### **7.1. Partnership agreements**

Contract\_PURGATOR-ULFGG\_20KSH.pdf

Contract\_GEATEH-ULFGG\_19KSH.pdf

Contract\_MKO-UL\_2330-12-85-0005.pdf

SklepMOL\_predstavnik-IvanStanic.pdf

### **7.2. Deliverables**

Protocols and guides for survey of the ecological status, hydrological and hydraulic conditions of the Ljubljanica river corridor

### **7.3. Output indicators. Definition**

Indicators\_tables2007.xls on CD

### **7.4. Other**

Other documents Annex to Deliverables on CD