
Urban River Basin Enhancement Methods

# Implementation and review of the new assessment tool
# Work package 6

UL FGG
M. Brilly

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**Research Contractor Contact Details (arial, 12, bold)**
Name of organisation (University of Ljubljana, Faculty of Civil and Geodetic Engineering, 12)
Address of organisation

Tel/fax number and web site of organisation

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**Report Authors**
Mitja Brilly

## Summary

# Contents

# 1. INTRODUCTION

Urbanisation and river regulations go back to ancient times, they gradually developed in the 19th century and intensified not earlier than in the second half of the 20th century with irrigation, water power development and river regulations for urbanisation of inundated land. Regulation and deterioration of rivers has a long history. The process was lead by specific, economically defined interests and simple decision-making schemes.

River restoration means taking broad actions, which differentiate in scale, size, timing etc. The implementation depends on different sources and several decision-makers who take on different interests, which should all be co-ordinated in a common task. Such a complex process with numerous actors has to include social analysis and tentative actions.

Guidelines and manuals have been developed for river restoration and environmental protection (UNEP,2004, US, 1998, EU 2002). Good sources of guides and ideas for implementation should correspond to the own specific natural situation and social conditions. Examples of good practice could provide encouragement but they cannot simply be transferred or copied elsewhere without a critical review of actions. Action-taking should be tailored to the local conditions.

Water management policy proceeds from development to management. The importance of environmental sustainability has been recognized overall. The decision making should integrate more interests, calls for a greater decentralization, more participation and greater financial viability. A new paradigm of Integrated Water Resources Management (IWRM) has been developed in the guidelines of WFD and worldwide. The IWRM is complex, requiring an almost idealistic approach (Brilly 2001).

Today, there are no economically well-defined interests and simple decision making schemes involving few stakeholders. The results should provide an environmental benefit that is very difficult to evaluate financially.

# 2. BASIC PRINCIPLES

All the parties involved should be properly organised in order to achieve a common goal in restoration of the river. Different practical experience and actions stress the principles proclaimed also on international conferences and guidelines (Dublin, Water Forum, WFD).

**Interests in action**
Decision making is driven by interests. In river restoration projects numerous interest are involved. On the other hand the restoration projects are costly and action should be supported with different financial sources. If the interests are

in conflict, and usually they are, decisions should be supported strongly enough, which is difficult to be achieved.

Multi-perspective approach is essential to bridge the wide gap that exists between technical analyses and decision making in the realm of sociotechnical systems, (Linstone, 1984). The perspectives in terms of interests could be categorized as:
**Common interests** – are well known and overall recognised interests, such as sustainable development, environmental protection, implementation of WFD. The common interests are well recognized and legalised by international declarations supported by national and international legislation.
**Organizational interests** – people are involved in the process development through some organization. An organization with integrated experts in a job-allocated process is much more efficient than are individuals. But each organization has some particular interests in security and development. If organization deals with some product on the market, their essential interest is growing profit, and if these are non-governmental and non-profit organizations (NGO) they are likely to increase their power enlarging the number of members and secure their position in developing their mission. Very important in renovation are stakeholders that could initiate the process or support development with funding.
**Personal interests** – Personal interests drive individual actors to address security, welfare, income, property etc. People like to participate and protect their interests in development of neighborhood landscape. Highly important are landowners of riverfront or neighboring properties. The syndrome “not in my garden” is a well known any unpleasant environmental action.
All interests should be categorized, analyzed and transparently presented according to the obstacle or support to the project development. Incorporating demand of different interest parties in the project from the beginning will increase participation and support.

## Integration

Integration is not a new paradigm in water management. The central concept to the Water Framework Directive is the concept of integration that is seen as key to the management of water protection within the river basin district (RBD), 2002. In the guidance document on the planning process integration takes place over: environmental objectives: water resources; water uses; disciplines, analyses and expertise; water legislation; all significant management and ecological aspects; wide range of measures, including pricing and economic and financial instruments; stakeholders and the civil society in decision making; different decision-making levels and water management from different Member States.

The WFD is an umbrella strategic document dealing with processes on the state and RBD levels. The implementation of urban river rehabilitation also needs different stages of integration:

- Integration in space. A river water body should integrate with the river corridor and the whole watershed. The water collection and flow, mass

movement and species migration integrate river and its corridor in a united system.

- Integration of different decision-making levels in vertical direction (Fig #) to satisfy demands of the RBD plan, local community interests, stakeholders and civil society need.
- Integration of decision making in horizontal direction (Fig #) in the policy at the town level to adjust different sectors: ecology, flood protection, traffic demand, settlement, sewage development, recreation etc. The integration should also incorporate technical services of town administration.
- Integration of multiple perspectives of common, organization and individual interests.
- Integration inside stakeholders and civil societies (NGO). The river rehabilitation should be the common task of fish angling association, bird watching, riverbank owners and citizens.
- Integration of disciplines, combining ecology, landscape architecture, hydrology, hydraulics engineering, social science, law and economics to assess implementation of river rehabilitation in the most cost-effective manner;
- Integration in time. The river rehabilitation is a long-term process subdivided in time steps and actions. There are also parallel actions in the urban development of river corridor and watershed. All those actions and processes should be taken into consideration and integrated.

**Organised action**

Action should be organised and driven by a body recognised by all involved parties, UNEP*.
Efforts and actions must involve a pro-active participation and contributions of both governmental and non-governmental stakeholders. An NGO or private sector can act as a partner in action. The form of organisation depends on the local practice, legislation and size of action.

### *2.1.1 Public participation on the lowest level*

Action should take place at the lowest possible level and then demand-driven approaches could be applied. All stakeholders should be involved from the beginning in selecting the appropriate solution and management options. Attention must be given to local demands. Comprehensive analyses of present and future societal demands are required, and strong support and acceptance from local communities should be secured. With such analyses realistic choices can be made from a wide range of technological, financial and management options.

River rehabilitation needs maintenance and care, which is not possible without full co-operation of locals and stakeholders.

### *2.1.2 Transparency in decision making and information*

In management and decision-making processes transparency should be ensured, which would establish trust of the inhabitants. Early, continuous,

targeted and transparent communication between all parties is required to establish firm partnerships.

### *2.1.3 Managing the problems*

Management of problems is related to our interests, knowledge and experience. The idealistic technical approach lies in sophisticated modelling with all necessary data including assessment of possible risk. Lack of data and knowledge asks for a more simple analysis with best expert estimation, but such system fails if the experts have particular interest or they would like to promote particular solutions.
Independent facilitators of the decision making process could be beneficial when problems are particularly difficult with opposing interests of stakeholders. A third party also helps to avoid that the competitive authorities dominate in the process.

## 3. STRATEGY OF IMPLEMENTATION

Regardless of the approach chosen, each river restoration asks for a flexible, tailor-made set-up. Each necessary step can be taken at different points in time, depending on available resources and capabilities. It is thus advisable to apply a well-defined logical framework, consisting of a comprehensive set of logically related tasks:

1. Identification of the need for action (getting started)
2. Establishing steering committee
3. Setting boundaries
4. Development of preparation plan
    - Review of information
    - Goals and objectives (new techniques)
    - Identification of needs and opportunities (RBD plan)
    - Identification of financing sources
    - Formulation of management plan
    - Setting objectives
    - Formal adoption.

5. Implementation
Operational management: on-site versus off-site
Institutional arrangements, such as capacity building, awareness raising and public participation

6. Monitoring and evaluation
Monitoring
Evaluation

Each phase can be subdivided into several tasks, where relevant stakeholders should always be involved as early as possible in the process. To achieve the objectives set, all the phases and tasks are best performed when they follow a certain logical order. In practice, Phase 1, although often

the logical place to start is not always the first phase taking place. An evaluation an existing system (a Phase 5 task) may show that there is a discrepancy between present and required performance. This then starts a new cycle, which may require that the originally set tasks be redefined, starting with new problem identification (Phase 1), planning (Phase 3) and implementation (Phase 4). Thus, tasks like identifying opportunities or evaluating the current situation or identification of financial sources may well come first. You can start at any phase of the cycle, as long as certain tasks are followed by specific other tasks, as laid down in the logical framework.

**Getting started**

The incentive for action may come from several sources: state, town council, NGO, stakeholder or interested groups, and individuals. The administration may initiate the restoration effort as a result of a directive to implementation the RBD plan. Citizen groups or groups with special cultural or economic interests in the river (e.g. landowners, sport fishermen) may also initiate a restoration effort. Others might undertake river restoration as part of a broad initiative that is funded from various sources and addresses a diversity of interests and objectives. The local representatives familiar with the situation should be involved from the start.

**Steering Committee**

An important step in the process is the formation of a steering committee. The steering committee includes key stakeholders, interested citizens, public officials, and any other groups or individuals who are interested in or might be affected by the restoration initiative (US 1998). Local citizen groups comprise multiple interests that hopefully share a common concern for environmental conservation and interest of local community. Such broad-based participation helps ensure that self-interests of administration do not operate the process from the top down. The steering committee ensures high level of participation in the development and implementation of the revitalization action. Interested parties will participate actively in the planning process by discussing issues and contributing to their solution as a member of the steering committee. They will share the decision making and objectives. Shared decision-making implies that the interested parties not only participate actively in the planning process, but also become partly responsible for the outcome (EU ppguid).
The steering committee generally takes care of the following:

- Carrying out restoration planning activities.
- Co-ordination of development of a preparation and implementation plan.
- Identifying the public's interest in the restoration effort.
- Making diverse viewpoints and objectives known to decision-makers.
- Ensuring that local values are considered during the restoration process.

It is important to remember that the true role of the steering committee is to advise the decision-maker or sponsor (the agency, organisation, or individuals that support the restoration effort) on the development of the restoration plan and execution of restoration activities. The primary decision-making authority should be in the hands of the stakeholders. The steering committee will provide recommendations and inform the decision-makers of various

restoration options and the opinions of the various participants. It is important to note that the decision-maker, as well as the steering committee, may be composed of a collection of interests and organisations. Other relevant sectors should be included, such as urban development and implementation of the RBD plan. Although the steering committee will play an active planning and co-ordinating role, it will not always make the final decisions. It is thus important that all members of the steering committee understand the issues, develop practical recommendations, and achieve consensus (US 1998). The identification of the key participants is the most critical issue. The exact number of groups or individuals that will compose the steering committee is difficult to determine and is different from situation to situation. Membership in the steering committee should be free and open. In general, it is important that the group should have representatives of all involved stakeholders, landowners and citizens, who are in touch with the action.

The steering committee activities require a lot of precious voluntary work. The members are in place according to their interests. The steering committee could collect its own funds from donors or own participatory financing action or technical support. There might be cases where a landowner or stakeholder chooses to take on all the responsibilities of the steering committee group in addition to playing the leading or decision-making role. Regardless of the number of individuals involved, it is important for all project participants to note that the usual duration of a project is 2 to 3 years (US 1998). There are no guarantees that every project will be a success, and in some cases a project may fail simply due to lack of funds, lack of time or lack of the willingness to act. All participants must be reminded at an early stage to set realistic expectations for the project and for themselves.

## Preparation plan

The Preparation plan is an essential document for the task force action. It contains major information for possible solutions, including cost, legislative issues and control of possible funding. An interdisciplinary team should carry out the study with the suggested contents, Checklist 1. The size of the document differs from a short memorandum to a full-sized detailed project documentation, and is situation-specific.

### *3.1.1 Setting boundaries*

Each stream corridor that is targeted for restoration is unique. Each stream targeted for restoration is unique. A project goal of restoring multiple ecological functions might include the channel systems, the active floodplain, and possibly adjacent buffer areas that have the potential to directly and indirectly influence the project. In the urban areas, land uses close to the stream bank are a major obstacle for environmental protection; however, the restoration of the surrounding land is an opportunity for restoration of the nearby river. The restoration stretch of the river should be as wide as possible. The steering committee should optimise the interests of the participants with the available funds.

A wide river corridor restoration is possible outside of urban areas, but inside, the development is limited by land use and town development plans. The objective of the past river regulation works was to take the minimum space for the river flow and demand for flood protection produced channelisation of the river with the minimum roughness coefficient. Any restoration work in such a channelized stream will increase the roughness and the water level during floods. The additional space for flood flow inside the river corridor is crucial for possible restoration measures. The problem is how much public land is available in the corridor and how high is the willingness of landowners to support such project.

In urban areas restoration will be focused on a narrower strip of land directly adjacent to the channel. Where narrow corridors are established through urban land, certain functions might be restored (e.g., stream shading), others might not (e.g., wildlife movement). In urban settings, citizen groups may have a strong voice in the objectives and layout of the corridor. On large public land, management agencies might be able to commit to the establishment and management of stream corridors and their watersheds, but the incorporation of competing interests (timber, grazing, mining, recreation) that are not always consistent with the objectives of the restoration plan can be difficult. In most cases, the final configuration of the corridor should balance several, often conflicting objectives, including optimizing the ecological structure and function and accommodating the diverse needs of landowners and other participants (US 1998).

### *3.1.2 Review of information*

Restoration work should not be attempted without knowledge of existing stream corridor conditions. It is important to collect and analyse information that provides an accurate account of existing conditions. The review consists from a set of existing data bases which were established for national or town environmental monitoring or will be available for monitoring the further development; data are collected for the project development and information is collected from stakeholders and citizens. Public participation takes on an important role in the steering committee information management as co-knowing or co-thinking participants (EU 2002). The perspective of the public should be facilitated by the participants or through public input forums. Data targeted for collection should generally provide information on both the historical and baseline conditions of stream corridor structure and functions, as well as the social, cultural, and economic conditions of the corridor and wider watershed (US 1998).

Personal landscape photos, information about historical floods, droughts, morphological changes, environmental variability are useful and cannot be collected in any other way. These data will be critical in understanding the present conditions, in identifying a reference condition, and determining future trends.

In the report, only data are presented that are relevant for opportunity identification; goal formulation; alternative selection; and design, implementation, and monitoring. They are integral to defining an existing

stream corridor and reference conditions, identifying causes of impairment, and developing problem/opportunity statements. Data collection and analysis are included in this process. Due to the dynamic nature of hydrologic systems, a range of conditions needs to be monitored. Ultimately, these baseline data will provide a basis to compare and measure future changes. The collection of photo documentation of a river stretch under restoration prior to the action is today almost necessary.

In addition to physical, chemical, and biological data, it is also important to collect data on social, cultural, and economic conditions in the area. These data will drive the overall restoration effort, delimit its scale, determine its citizen and landowner acceptance, determine the ability to co-ordinate and communicate, and generally identify the overall stability and capability to maintain and manage. In addition, these data are likely to be of most interest to participants and should be collected with their assistance to avoid derailment or alteration of the restoration effort due to misconceptions and misinformation. Properly designed surveys of social attitudes, values, and perceptions can also be valuable tools both to assess the changes needed to accomplish the restoration goals and to determine changes in these intangible values over time, throughout the planning process, and after implementation (US 1998).

Budgets and technical limitations often put constraints on the amount and types of data that can be collected. It is therefore important for the task force to optimize and prioritize the data needed. At a minimum, the data necessary to explain the mechanisms or processes that affect stream conditions need to be collected. Depending on the scope of the restoration plan, however, data for all of these elements might not be necessary for a successfully accomplished restoration. This holds especially true for smaller restoration efforts in limited stream reaches.

An effective way to prioritise the data collection is through a scoping process designed to determine those data, which are critical to decision making. The scoping process identifies significant concerns by institutional recognition (laws, policies, rules, and regulations), public recognition (public concern and local perceptions), or technical recognition (standards, criteria, and procedures) US 1998.

Data analysis techniques range from qualitative evaluations using professional judgement to elaborate computer models. The scope and complexity of the restoration effort and also the budget will influence the selection of analytical techniques. However, as a starting point, consideration should be given to describing the present conditions, associated with the following eight components of the river:

- Hydrology
- Erosion and sediment yield
- Floodplain/riparian vegetation
- Channel processes
- Connectivity
- Water quality

- Aquatic and riparian species and critical habitats
- Corridor dimension

### *3.1.3 Identification of needs and opportunities (RBD plan)*

The first step in problem identification and analysis is to define the conditions within which the urban river problems and opportunities will be defined and restoration objectives established. It is helpful to describe how the present baseline conditions of the stream compare to a reference condition that represents a good ecological status or good ecological potential prescribed by the RBD plan. At the same time flood protection of the area, amenity and other specific urban constraints should fit as closely as possible into the desired outcome of restoration.

Setting objectives and attributes according to stakeholders' interests and needs. The process of setting objectives is developed by the tool for assessing the potential for rehabilitation (WP5). The objectives are derived from stakeholders interests. Attributes, belong to objectives, are developed to reach the needs of the stakeholders. For each stakeholder one to three objectives are chosen and scaled by attributes.

### *3.1.4 Identification of financing sources*

Identification of funding sources is often the first and most important step toward an effective stream restoration. The funding may be minimal or substantial, and it may come from a variety of sources. Funding may come from EU, country or local sources that have recognised the need for restoration. Funding may come from any entity that has taxing authority. Charities, non-governmental organisations, landowners' associations or any developer invested in river corridor and voluntary contributions are other funding sources. Regardless of the source of funds, the sponsor will almost certainly influence restoration decisions or act as the leader and decision-maker in the restoration effort. The attributes in the tool for assessing the potential for rehabilitation are weighted taking in account financial sources for action.

### *3.1.5 Formulation of management plan*

You cannot prescribe the best formulation of management plan. Arrangements among actors, whether existing or newly developed, depend on cultural, social, economic, and political conditions of a country. Besides, when conditions change over time, arrangements may have to be adapted. All sectoral functions should be addressed through technical organisations and other institutional arrangements. This requires clear formulation of and agreement on tasks, responsibilities, and authority to avoid overlap in competence, omissions, or "blind spots". For good communication and co-operation, both formal and informal platforms are required among all actors.

## Implementation

The implementation phase is a critical component of the stream corridor restoration process. It includes all the activities necessary to execute the restoration design and achieve restoration goals and objectives. Successful

restoration implementation demands a high level of advance planning that constitutes planning by any measure.

An essential component of any stream corridor restoration initiative is the availability of funds to implement the restoration design. By the time the restoration initiative reaches the implementation stage, the initial identification of sources should be secured so that the restoration implementation can start. Importantly, financing might come from several sources. All benefactors, both public and private, should be identified and appropriate cost-sharing arrangements should be developed.

An important element of securing funding for restoration is to link the available resources to the specific activities that will be part of implementation. Specifically, it should be the responsibility of the restoration planners to categorise the various activities that will be part of the restoration, determine how much each activity will cost to implement, and how much funding is available for each activity. In performing this analysis it should be noted that funding should not be seen only in terms of available “cash”. Often many of the activities can be completed with the work of the staff of a participating agency, stakeholders, voluntary actions or other organisation.

The restoration activity may develop in separate stages and each stage will be supported by different funding sources. The action will thus take time and should be managed as flexibly as possible.

It is important to note that in most cases there is insufficient funding for all the activities outlined in the stream restoration design. Planners should recognise that this is not uncommon and that restoration should proceed. An effort should be made, however, to prioritise restoration activities, execute them as effectively and efficiently as possible, and document success. If the restoration initiative produces positive results and benefits, additional funding can be acquired.

When funding and restoration activities are identified, the focus should shift to dividing the responsibilities of restoration implementation among the participants. This process involves the identification of all the relevant parties, assigning responsibilities, and securing commitments. Since the restoration partners are identified early in the planning process and included in the task force, the focus should be on “reviewing” the list of participants and identifying the ones who are most interested in the implementation phase and capable to care for the funds. However, new players might emerge and be associated to the task force. The task force should then oversee and manage the implementation process as well as co-ordinate the work of other participants, such as contractors and volunteers involved with restoration implementation.
Volunteers can be valuable assisting with urban water restoration. Numerous activities that are part of the restoration implementation process are suitable for volunteer labour, especially for demanding work (bioengineering works or cleaning), observing and supervising.

## 4. GAPS

- water deliveries are coordinated by a poorly prepared administration
- regulatory approach is favored over market incentives
- poorly enforced rules, regulations and laws
- insufficient hydrologic data
- high rates of urbanization
- water resource management lacks environmental considerations
- lack of trained personnel

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# 6. APPENDIX

## Appendix 1: Checklist for the development of river restoration action

Logical framework for development of the river restoration process

### Phase 1: Problem identification

### Tasks: getting started:

setting boundaries and identification of the scope of action;
identifying all stakeholders, key agencies, NGOs and responsible administrations;
testing the willingness to co-operate;
establishing a steering committee.

### Phase 2. Preparation plan

### Tasks: Plan for action

Review of information:
Natural conditions: Hydrology, Erosion and sediment yield, Floodplain/riparian vegetation;
Channel processes, Connectivity, Water quality, Aquatic and riparian species and critical habitats, Corridor dimension.

Social economics conditions
current water management development plans and issues;
current water urban development plans and issues;
identification of stakeholders interests and needs .

Setting objectives and attributes according stakeholders interest and needs

RBD plan
focus on areas where most positive impacts can be expected from river restoration development;
assessing the needs of all stakeholders;
identification of resources: Are staff, funds, facilities, and mechanisms in place to implement the tasks?

### Phase 3. Implementation

### Tasks: Project development

Setting objectives;
Involve state, town and local communities and stakeholders in project development;
Project modification according to policy request;
Transparent decision making with public involvement;
Monitoring of development and impact of the project development.

## Appendix 2: Stakeholder checklist

Water body □□□□□□□□□□ Reach □□□□□□□□□□

1. Land owner Cadastral No.
   □□□□□□□□□□
2. Water-right holder Type of water right
   □□□□□□□□□□
3. Performs activities on the river bank Description of activity
   □□□□□□□□□□
4. Other □□□□□□□□□□ □□□□□□□□□□ □□□□□□□□□□

Readiness to co-operate:
In public discussions and decision-making □
by supporting the process of establishing the documentation □
by supporting the data collection □
by supporting the implementation of the measure □

Organization
Profit □
Non-profit – NGO, associations □

Annual budget of organization: □□□□□□□□□□

Short description and comments: □□□□□□□□□□ □□□□□□□□□□ □□□□□□□□□□

## Appendix 3: Queistionarie for inhabitants

***Dear Sir or Madame!***

***We kindly ask you to participate in the survey, which tries to establish people's opinions on the arrangements of the river _____ and its banks. The results of the survey will be used for the revitalisation plan of the water body. The survey is anonymous.***

*Thank you for your co-operation!*

| | |
|---|---|
| Age: years old | Sex: M F |
| Education: 1 – primary 2 – vocational 3 – secondary 4 – higher/university | |
| Address: | |

Please, respond by circling the letter before the chosen answer. You may choose only one answer, unless stated otherwise.

**1. How often do you visit the area discussed**
a) every day
b) once or several times a week
c) 1–3 times a month
d) less than once a month

**2. What are the amenities of the area that make you stay in the area for a longer period?** (You may choose more than one answer.)
a) Good recreational opportunities
b) Proximity of river
c) Urban area
d) Presence of other people
e) Pleasant surroundings
f) Good catering services (bars and restaurants)
d) Other
_____

**3. What part of the discussed area do you prefer most?**
_____
___

**4. Why?**
_____
___

**5. Please, choose the activities that you would be willing to undertake if all the conditions were met. Several activites are given, which could be developed along the river.** (You may choose more than one answer.)
a) Fishing
b) Bathing
c) Walking
d) Social events
e) Picnicking
f) Boating

g) Boat trips
h) Cycling
i) Horse riding
j) Nature watching

**6. Would you object to the development of any of the activities given above? If Yes, please state which.**

_____
___

7. What are the most disturbing elements in the image of the water body and its banks?
a) Dirtiness of the river
b) Concrete lining of the channel
c) Impaired access to river banks
d) Poor access to water
e) Image and maintenance of the banks
f) Poorly maintained surrounding of the water body
g) Other_____
___

8. Would you support the revitalisation project that would provide the following:

Extension of green areas along the stream
More public areas
Easier access to the river
Walking paths along the river
Higher security against floods
Removal of concrete linings
Improvement of the aquatic ecosystem (improving the quality of habitats)
Ensuring the conditions for bathing and fishing

a) Yes
b) No

7. Related to the measures given in the previous question, would you financially contribute to the revitalisation fund?

c) Yes
d) No

**8. Please, state your willingness to co-operate in the decision-making process and type of co-operation.** (You may choose more than one answer.)

a) I am not willing to co-operate.
b) Participation in the revitalisation board.

c) Participation in public discussions.
d) Contribution of funds.
e) Volunteering.
f) Becoming member of a non-governmental organization.
g) Participation in activities organized by the city of municipal community.
Other_____
_

X My land borders the water body in a length of _____m on the left bank.

**8. (added)**
h) Participipition in organization of riparian land owners in the revitalisation area.
i) Participation by managing land in accordance with the revitalisation plan.
j) Participation by keeping the banks bordering my land.

**9. What are the most important measures of revitalisation of a water body?**

a) Improving water quality
b) measures against bank erosion
c) Safety against floods
d) Keeping and maintenance of banks
e) Educating visitors of river-side areas

_____
The survey has to be adapted to the characteristics of each water body area separately.

## Appendix 4: Quiestionarie for landowners

***Dear Sir or Madame!***

***We kindly ask you to participate in the survey, which tries to establish people's opinions on the arrangements of the river _____. In the survey, the narrow space around the river is dealt with: water space, banks, and riparian growth. The results of the survey will be used for the revitalisation plan of the water body in the area of your residence. The survey is anonymous.***

*Thank you for your co-operation!*

| | |
|---|---|
| Age: years old | Sex: M F |
| Education: 1 – primary 2 – vocational 3 – secondary 4 – higher/university | |
| Address: | |

**1. My land borders the river in a length of ___ metres on the (left/right) bank.**

**2. What are the disturbing elements in the image of the water body and its banks?** (You may cose more than one answer.)

a) riparian overgrowth
b) dirtiness of the river
c) regulated channel
d) garbage on the banks
e) Others_____
_____
_____

**3. Please, rank the criteria relevant to keeping your garden.**

The ranking scale is as follows:
5 – very important
4 – fairly important
3 – medium importance
2 – little importance
1 – unimportant

| | | | | | |
|---|---|---|---|---|---|
| Privacy. | 1 | 2 | 3 | 4 | 5 |
| Clear borders of the garden. | 1 | 2 | 3 | 4 | 5 |
| Garden as space for socialising, rest, games etc. | 1 | 2 | 3 | 4 | 5 |
| Growing vegetables, fruit trees etc. | 1 | 2 | 3 | 4 | 5 |
| Arranging a composting site in the garden. | 1 | 2 | 3 | 4 | 5 |
| Having the most beautifully kept garden in the neighbourhood. | 1 | 2 | 3 | 4 | 5 |
| Keeping the garden without the use of artificial fertilisers. | 1 | 2 | 3 | 4 | 5 |

| | | | | | |
|---|---|---|---|---|---|
| Maintenance of natural growth on the banks. | 1 | 2 | 3 | 4 | 5 |
| Security of banks against erosion. | 1 | 2 | 3 | 4 | 5 |

**4. Has your land ever been flooded by the river?**

a) Yes
b) No

**4.1 If Yes, please, answer the following two questions.**

When (year of the flood)?_____

What was the scale of the flooding?
_____
_____

**5. Please, state your willingness to co-operate in the decision-making process and type of co-operation.** You may choose more than one answer.

a) I am not willing to co-operate.
b) Participation in the revitalisation board.
c) Participation in public discussions.
d) Contribution of funds.
e) Volunteering.
f) Becoming member of a non-governmental organization.
g) Participation in activities organized by the city of municipal community.
h) Participipition in organization of riparian land owners in the revitalisation area.
i) Participation by managing land in accordance with the revitalisation plan.
k) Participation by keeping the banks bordering my land.
l) Participating in data collection
Other_____
_

**6. What are the most important measures of revitalisation of a water body?**

a) Improving water quality
b) measures against bank erosion
c) Safety against floods
d) Keeping and maintenance of banks
e) Educating visitors of river-side areas