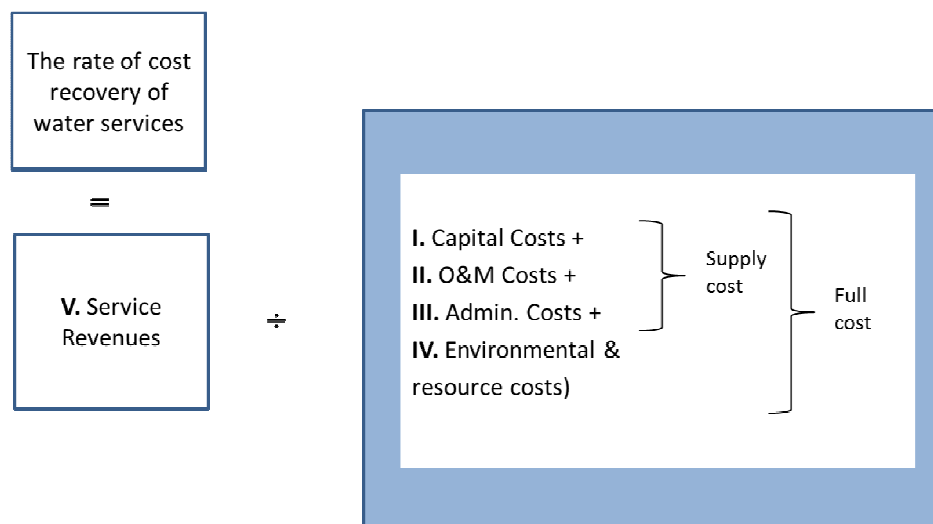


1 Executive summary

At this moment the Romanian water authorities are upgrading their flood protection measures to increase the level of protection of the population and to get in compliance with the EU Flood Directive. Currently there is *no specific cost recovery system* to cover the costs of infrastructure works administered by ANAR for flood protection services in the Romanian waters. The EU Water Framework Directive (WFD, art. 9, implemented in the Romanian water law) requires the design of a cost recovery model related to water services.

Full cost recovery equals recovering or the full costs of a product or service. The principle of cost recovery applies to the recovery of capital costs as well as operating costs (financial sustainability). In addition, also environmental and resource costs under the definition of the WFD (should) form an integral part of cost recovery.

This figure visualizes the set-up of the cost recovery framework (CRF).



Flood protection is not yet accounted for in the contribution/revenue system of ANAR. Knowledge on the current state was developed in order to explore and assess the feasibility of specific cost recovery options for flood protection services offered by ANAR. Through ANAR, in the project, all RBA's and the Ministry have been involved in a comprehensive data gathering process.

At present there is a significant gap between annual costs and revenues related to flood protection services by ANAR/RBA's. Total revenues are less than 65% of the required budget for adequate Operation & Maintenance (O&M). If revenues were to be divided by the full (financial) cost¹, the cost recovery rate is about 45%.

Scenarios

Different (governance) scenarios related to implementation of a cost recovery system were explored in the project. They are summarized in the following table:

No.	Description Scenario	Advantage	Disadvantage
0	Current situation: no change	No cost of change	Nothing will change: no

¹ The environmental & resources costs are in general hard to be evaluated, also on EU level

			sustainable system
1	Current situation +: covering O&M costs up to 100%	improvement of tasks execution of ANAR & RBA's	no solution on longer term, only short term
2	Centralized: state budget	simple and clear approach	step back from cost recovery
3	Mixed centralized (registered rivers) and decentralized (unregistered rivers): state budget + retributions	tasks are executed at most decentralized level, flood protection of national rivers has status of national importance	re allocation of budgets and costs, responsibility discussion, ...
4A	Mixed centralized and decentralized (all watercourses): local retributions	multi governmental approach, all kinds of floods included	complex administration/ responsibilities/ legal framework, responsibility discussion, ...
4B	Mixed centralized and decentralized (all watercourses): (<u>differentiated</u>) local retributions	multi governmental approach, all kinds of floods included	complex administration/ responsibilities/ legal framework, responsibility discussion,..

The different scenarios were well discussed in Romania. The scenarios 3 and 4 were chosen as the preferred scenarios. As mixed scenarios they are in fact the most obvious. They fit in the growing tendency worldwide to use multi-level governance solutions.

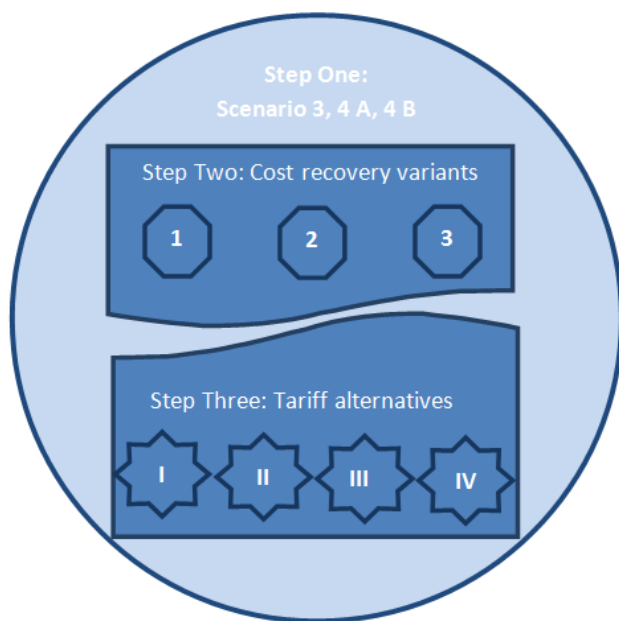
To explore different cost recovery options, three (illustrative) variants for cost recovery have been developed:

- 1) **Cost recovery 100 % O&M**
- 2) **Full cost recovery (FCR)**
- 3) **Gradual increase to FCR level** (10-year period is assumed to reach FCR level).

Four different tariff alternatives are reviewed:

- I. **Single tariff per household:** costs are equally distributed among the population.
- II. **Single tariff per hectare land:** the tariff is obtained by dividing annual costs by the surface area land in the RBA.
- III. **Differentiated tariff according 'economic benefit' allocation principle:** the allocation of costs is based on the economic value of the property (assumed) protected. Within each property category (building and land), costs are shared according to market value.
- IV. **Differentiated tariff with solidarity features:** costs are shared among user groups in proportion to the potential benefits generated from good flood management practice. Only, households living in the area are added as a third category to redirect part of the costs from property owners as people living and working in the area who do not own property also benefit. In the example, a 30% 'solidarity levy' is assumed.

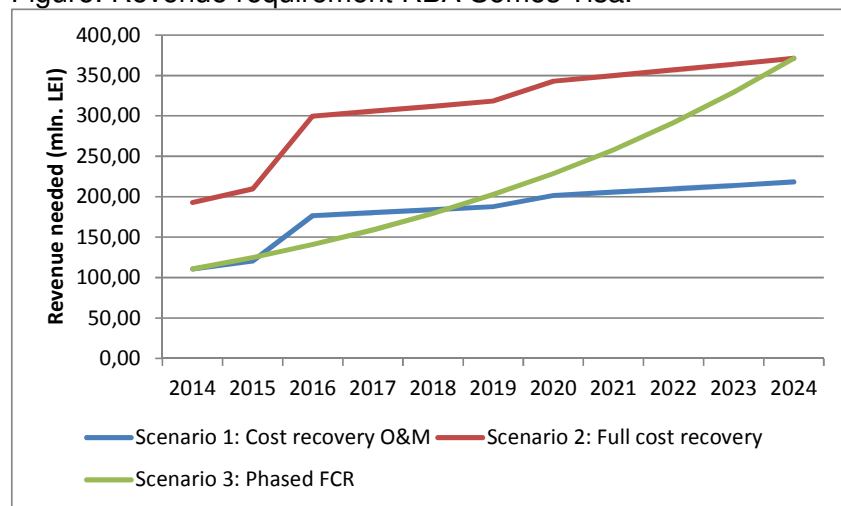
Figure: Overview relation between scenarios, cost recovery levels and tariffs.



Indicative results for pilot RBA's Some Tisa and Jiu

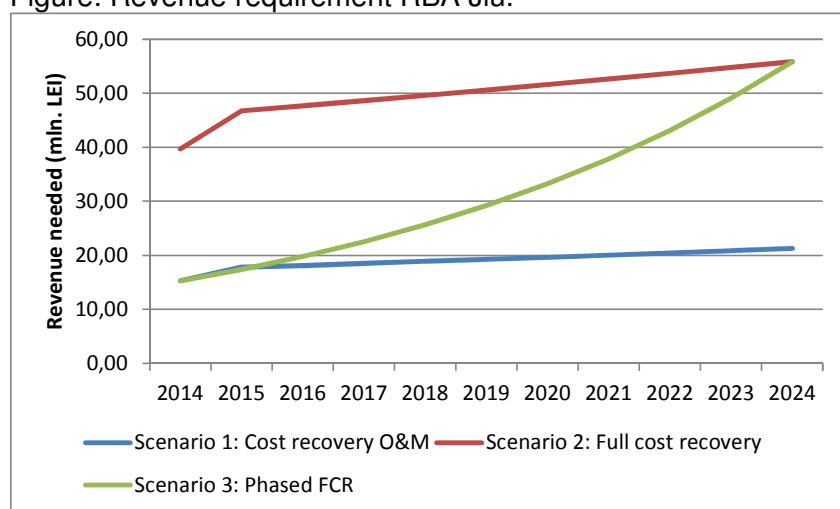
For the mentioned RBA's indicative calculations have been made to illustrate the impact of the cost recovery variants:

Figure: Revenue requirement RBA Some Tisa.



In the variant 1 total revenues needed to cover annual O&M costs are foreseen to increase from approximately 110 mln. LEI in 2014 to 220 mln. LEI in 2024. Variant 2, which additionally accounts for the accumulation of capital to reinvest and payment of the debt service, the revenue requirement is almost doubled and ranges from 190 to 370 mln. LEI in the period 2014-2024.

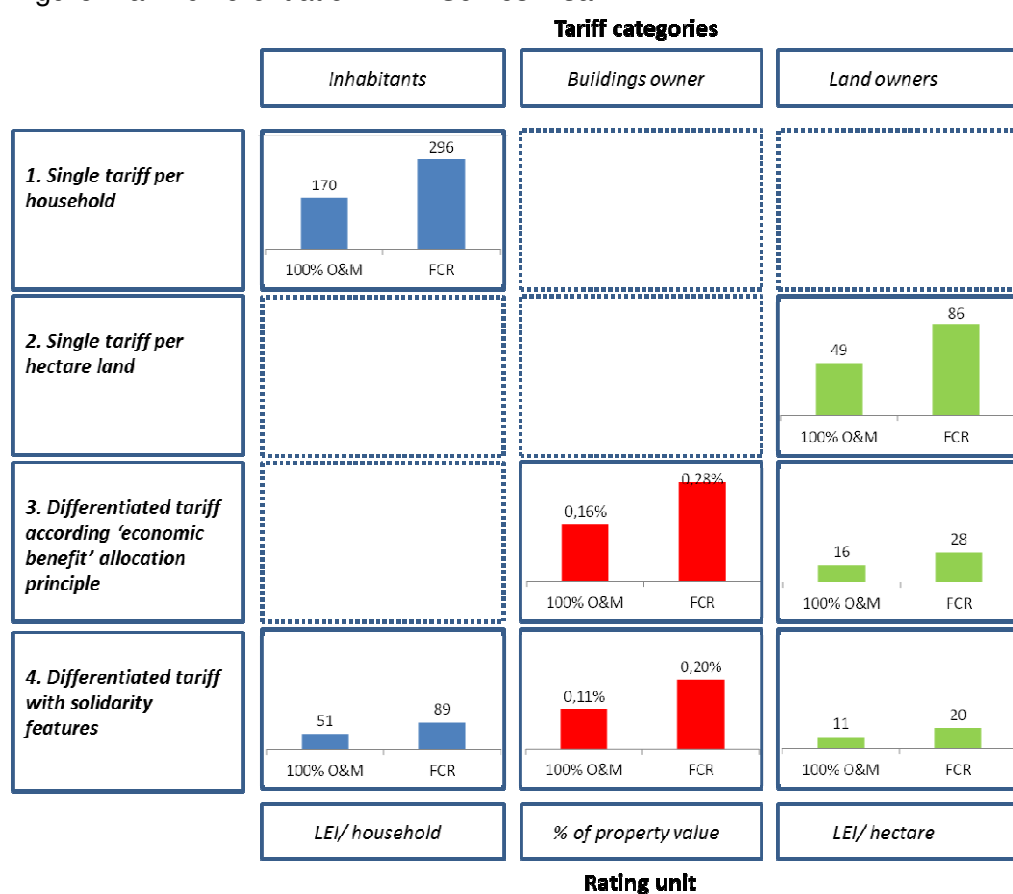
Figure: Revenue requirement RBA Jiu.



The needed revenues related to variant 1 (cost recovery O&M) are foreseen to increase from approximately 15 mln. LEI in 2014 to 21 mln. LEI in 2024. For variant 2 (FCR) revenues needed increase from 40 to 56 mln. LEI in the period 2014-2024.

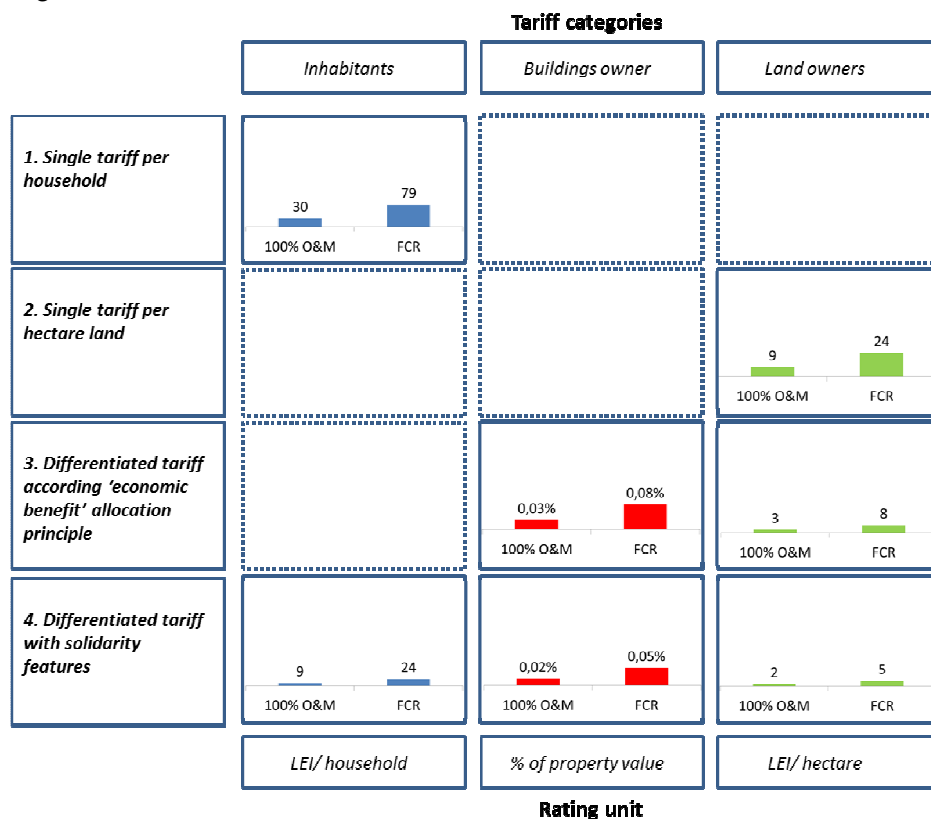
Indicative calculations have also been made, using the different tariff alternatives. These are in fact based on scenario 4 as information to present the results based on scenario 3 is not available.

Figure: Tariff differentiation RBA Someș Tisa.²



² Calculations are based on data provided by ANAR and statistical information available at <http://epp.eurostat.ec.europa.eu>.

Figure: Tariff differentiation RBA Jiu.



Conclusions:

- An analysis on micro level (all RBA's) is needed to get a better insight in the possible regional differences.
- Based on the limited calculations performed during the project, the implementation of the tariff alternatives seems affordable for the different target groups³:
 - o *For Somes Tisa*: the flood prevention payment for an average household would range between 0.7 - 1.1% of household annual income. In case of alternative 4 in which the costs are spread among a wider group of users, the household income fraction decreases to about 0.2 – 0.3%. In this alternative owners of buildings and land are assumed to absorb an important part of the costs as main beneficiaries. As put forward owners of buildings pay 0.11 – 0.20% and land owners 11 – 20 LEI per ha. To put this in perspective the current payment for the property tax on buildings and the land tax in Romania can serve as a benchmark. The applicable rate of the property tax that is levied on buildings, payable by the owner, typically varies by 0.25% and 1%. The rate of the land tax ranges from 1 to 10 LEI per hectare dependent on the location of the property (urban/ rural areas).
 - o *For Jiu*: the flood prevention payment for an average household would range between 0.1 - 0.4% of annual income. In case of alternative 4 the household income fraction decreases to about 0.04 – 0.11%. Owners of buildings pay 0.02 – 0.05% and land owners 2 – 5 LEI per ha.
- To support working with the cost recovery model excel workbooks and a manual are made available.

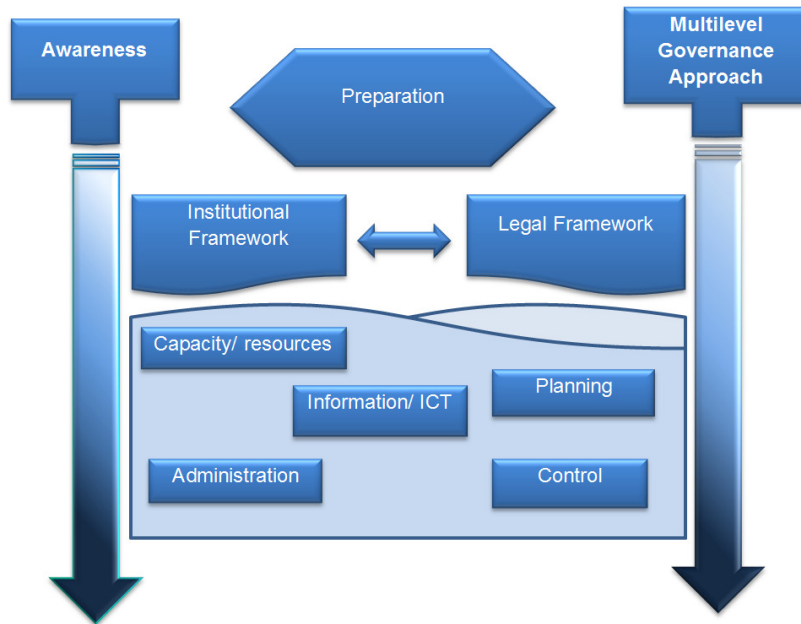
³ A thorough analysis should be performed by the Romanian authorities to establish the affordability in the general national context.

The following recommendations were identified:

In the way forward to implementation of the proposed cost recovery framework, there are different aspects and principles to consider and mainly a process of change is needed. It can be the right moment for this process of change. Flooding is high on the political agenda because of occurring floods and the fact that the first results of the risk maps have recently been shared with the media and the public. So, this was the first step in creating awareness about flooding topics.

In the flowchart below the different steps for the introduction of a cost recovery scheme for flood prevention are illustrated.

Figure: Flowchart implementation of the cost recovery framework (source: project team).



Three periods in time need to be considered:

- short term (till 2020);
- mid term (2020 – 2030);
- long term (after 2030).

Explanation of the different steps and phases

Preparation

This phase is very important to determine the future implementation strategy. A dedicated team (executive and on political level) should be formed to be responsible for this process.

The following activities need to take place:

- Information sharing with stakeholders in and outside of ANAR to create a mutual level playing field.
- Reflection on the process of change that is needed.
- Choice of final scenario to implement (3 or 4).
- The evaluation of the current tariff system/ service level of flood protection and the choice of a future tariff system.
- Training of the staff of ANAR and the RBA's to be able to work with the cost recovery framework as to build up the needed data set for up to date insight in the financial gap and determine the tariff level. It is possible to use the principle of 'train the trainer' for this.

Of course, the process should go in stages and specific Romanian demographic and macro economic data and circumstances need to be taken into account⁴.

On the short term, it could be most practical to take small steps and gain more revenues for the task of ANAR, so the budget for operation and maintenance can increase (scenario 1). This could probably for the coming years (short term) give some financial relief. This can be done by:

- Increase of the current contribution tariffs (not a high political commitment expected).
- Introduction of flood protection contribution by ANAR (governmental decision is needed).
- Finding more clients (retention basins, irrigation works, see chapter 2).
- Improving efficiency.

From this situation further development towards scenario 3 or 4 can be prepared. It can be a good idea to first implement scenario 3 and later on merge with scenario 4 as local involvement can increase in this way, step by step.

The result of the preparation phase should be a go/no go for the following steps forward.

Legal framework

The legal/policy framework needs to get prepared/changed to make the implementation of the cost recovery framework possible.

The following considerations are relevant:

- The aspect of cost recovery related to the flood protection task is integrated into the water law with ANAR as responsible institution.
- The service level related to flood protection or the flood risk safety norms.
- The flood emergency policies are further developed than the flood prevention policies.

Institutional framework

The institutional framework determines which institutions are and will be involved in the task of flood protection and the related cost recovery.

Capacity/resources

The following capacity and resources can be needed for successful implementation:

- Human capital.
- Equipment.
- Capacity building.

Control

Control mechanisms and supervising are needed to create transparency and accountability. With a CRF in place, the paying beneficiaries have the right to know and understand how the collected revenues are spent. Examples are mentioned in the report.

Administration

A good administration system should be put in place to enable adequate projections of multiyear operating budgets required for execution of the flood prevention task, from which also the rates for the service will be derived. It should allow to repeat the procedure regularly (each year), so to resemble the actual situation with regards to supply costs, income level, tax base, affordability etc. In reference to the current accounting system, it is important to regularly evaluate the status of the assets as to include accurate information on the (remaining) lifetime and to specify the flood prevention-related costs in the overall costs.

Information/ICT

The development of physical (infrastructure), socio-economic, financial (CRF) and institutional water information systems on flood protection is needed to support decision makers (databases, ...). Information systems are already put in place on the level of ANAR and the RBA's. Attention is needed for their coherence, consistency, reliability and public disclosure (transparency) as well as to their costs and benefits. At first, assessment of existing information systems (at ANAR, RBA's) and accountability procedures can take place, after which the information gap can be determined.

Planning

The whole process of the policy planning, the planning of infrastructure up to the planning related to emergency situations needs assessment and possibly improvement.

Awareness about (the costs of) flood protection

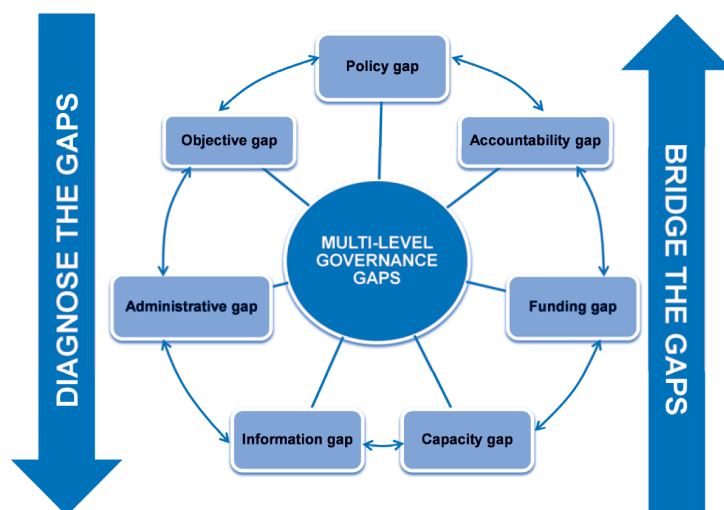
During the whole process awareness of involved stakeholders is very important. The relevant question is if stakeholders, such as the population, farmers, companies and environmental NGO's, are adequately involved in water management, at policy or at project level?

Public awareness is needed to inform the population and all stakeholders about the need to start paying to remain protected against flooding. This can be a combination with the awareness campaign that is foreseen in the communication of the results of the risk maps with the RBA's and the public. Stakeholder involvement should be added or further developed as a modern principle. It can contribute to a stable system, a system supported by the population where it is in fact made for. This can be connected to the existing river basin committees. Referring to the press release that took place on the presentation of the risk maps in the beginning of April, was a first step.

Multi level governance approach

The OECD multi-level governance framework (OECD 2011) can help as in this way an analysis can take place of the 'roadmap' that needs to be taken into consideration. This framework is summarized in the following scheme:

Figure: The OECD Multi-Level Governance Framework.



Source: OECD (2011), *Water Governance in OECD Countries: A Multi-Level Approach*, OECD Studies on Water, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264119284-en>.

Other recommendations

- The Dutch water system levy as decentralized instrument of the regional water authorities can serve as an example for Romania as revenues are collected at the local level where policy guidelines are given on the national level and the actual setting of the tariff levels is done on local level. The approach in the Netherlands is a result of years of experience and compared to the current situation in Romania it would take a considerable period of time to implement this instrument in a comparable way.
- Evaluation/auditing of the execution of tasks and risks related to flash floods in more detail and define a strategy for improvement of which a dedicated cost recovery model can also be a part.
- Evaluation of the current flood protection tasks of the unregistered water courses (awareness, administration, cost recovery). A good solution is also needed for prevention of flooding caused by (lack of maintenance of) the unregistered tributaries for which the local level have responsibilities that should be taken into account more seriously. A start can be to raise awareness at the local authorities by involving them in this subject and start building up a database with all needed information to professionalize this task on the local level. ANAR can play a role in this.
- Connection of the spatial planning as an instrument for the land use with the water management/flood protection task.
- Flood protection should be made a chapter in the strategies for local development as part of an integrated approach the local authorities should commit to.
- A feasibility study can be done on flood insurance as adaptation instrument.

The central government authority should be the driving force for the implementation of a customized cost recovery framework for flood protection in Romania. ANAR can provide the technical support, facilitating the processes.

The current project focused on the elaboration of a general framework for revenue collection suitable for Romania's conditions and testing it for the specific conditions of 2 basins with very different economic, social and environmental profiles. The success of an efficient model at national level is based on extended analysis for all RBA's as well as an analysis of the national system of tax collection and distribution. The involvement and consultation of relevant stakeholders at local and regional level and sustained awareness campaigns addressed to all levels of the society (population, businesses, authorities) for stimulation of contributions at individual level, will further create the path to practical implementation.

Dutch – Romanian project team, November 2014