



Institutional analysis

Modules:

**Impacts of human intervention
on river ecosystems**

Hydrogeological risk

River management

Total duration: 8.5 hours

Field work: No

List of materials:

- Worksheets (e.g. Questionnaire, interview questions)

Worksheets: 1, for documenting the interview findings

Students' age: 16-18

Use of apps/software: Google Maps/siftr

Brief description

Institutions serve basically as instruments for human cooperation and for reducing uncertainty by establishing a stable structure to human interaction (North 1990). In this sense, the study of institutions related to river management is of special significance, as the most critical element of integrated water resources management in a river basin is the need for coordination among various human efforts to manage the water available within the basin. Therefore, the most fundamental aspect of institutional analysis in the context of river basins is to explore this coordinating role of institutions.

But why is an institutional analysis important?

- 1) Facilitates conflict resolution: In many river basin contexts, conflicts related to water allocation and management exist among geographical units within the basin, among different water use sectors, and among water users themselves within and outside each sector. A significant contribution of a basin-wide organizational mechanism can be towards resolving such conflicts.

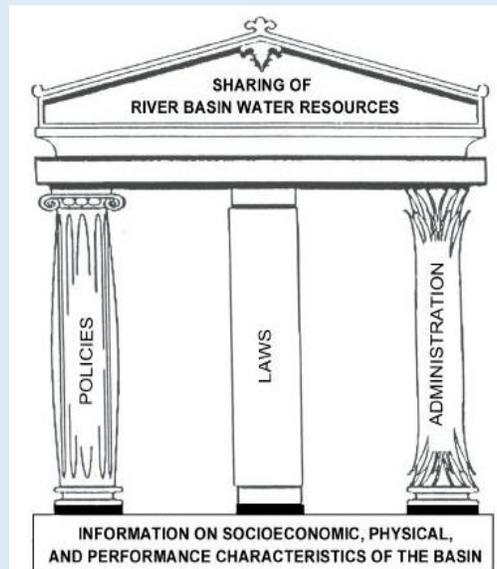


A critical constraint against effective river basin management is the commonly prevalent conflict between boundaries of river basins and those of political units. In many instances, the boundary of the political or administrative unit (such as the Nation, Province or District) is the river course itself, whereas in some rare instances, it falls on the mountain ridge. In some other instances, the boundary of the Country, Province or District is a man-made demarcation such as a highway or a fence. In whatever form, when the difference in the boundaries creates a conflict in decision making, invariably the greater emphasis is on the administrative or political boundary. In such instances, a higher-level coordination mechanism is essential.

2. Addresses environmental concerns: Adverse environmental effects go beyond the boundaries of water use sectors and geographical units in the basin. Sectoral institutions usually restrict their attention on their own requirements, and similarly different administrative units usually look after their own interests. The degree of coordination among sectors and geographical units reflects on how much environmental concerns are taken into account in the development and management of the river basin.

3. Corresponds to the historical development: Every drop of water in a river is "liquid history." It traces the path and the process of acquisition, storage, conveyance and use of water within the river basin. Many such drops would have flowed in a river for time immemorial. Therefore, how the basin itself has developed in terms of technological and economic advancement would correspond to the institutional framework that has developed over time in a basin. An understanding of the overall development process would help in assessing how, and to what extent, the institutions have played a coordinating role to promote human cooperation in various water-related activities within the basin.

The metaphor of the classical temple is an appropriate illustration of the combination of principles, processes and activities involved in the suggested method of institutional analysis:





The pillar of Laws: The legal framework is a very complex set of enactments, subsidiary laws, rules, regulations and procedures, and rights, customs and practices. They are also divided in terms of sources, such as EU, national, regional, and local. There can be laws affecting river management, and laws directly related to river management.

The pillar of Policies: Policies are also determined by a number of actors at EU, national, local or organizational level. Usually, policies and laws are interlinked at the sources, as well as at the implementation level. In some countries, a water policy has already been established, and they are in the process of formulating laws to implement them.

The pillar of Administration: Administration here means the structure of organizations involved in water management (at EU, national, regional and local level) and their internal rules and jurisdiction.

D.J. Bandaragoda, "A Framework for Institutional Analysis for Water Resources Management in a River Basin Context", International Water Association (IWA), 2000
<https://ageconsearch.umn.edu/bitstream/92780/2/WOR5.pdf>

Objective of the learning unit

To learn about:

- ✓ Main laws, policies and institutions/organisations affecting river management in a selected river basin
- ✓ Role of policies, laws and the administration in an integrated river management.
- ✓ Assess their level of integration and therefore effectiveness in the river basin management
- ✓ Different levels of administration, synergies as well as potential conflicts in exercising their mandates.

To be able to:

- ✓ Increase analytical skills
- ✓ Exercise in teamwork and collaborative techniques.
- ✓ Develop skills in using GIS software in order to visualise and communicate spatial information
- ✓ Enhance their awareness and attitudes regarding active citizenship and civic democracy.

Introduction (orientation)

Time estimated: 45 minutes

Where the activity takes place: in the classroom, using PC, beamer and Internet

Method (how the students have to work): class brainstorming

Instructions for the teacher:

The teachers should introduce the topic through posing stimulating questions to the class or different groups of students regarding the existence of blue elements in their locality, the concept of river basin management and the different organisations/institutions responsible. The questions should be phrased simply and directly, addressing all students regardless of prior interest in the topic or performance in related school subjects. Questions should not include scientific terminology. The exact phrasing of the questions depends on the national/local context regarding events the students can relate to, the policies and laws in place as well as the institutions responsible for different aspects of river management. Indicative questions are:

“Who is responsible for the management of rivers/streams/canals in your city?”

“Do EU policies have an effect on how our rivers are managed?”

“In the case of an unfortunate event, e.g. river flood, who should we turn to for explanations?”

“Is it the EU? The Ministry? The regional government? The local government?”

“Are these different administrations responsible for different aspects? Are they working in accord? Do they cooperate well?”

Conceptualization

Time estimated: 45 minutes

Where the activity takes place: in the classroom

Method (how the students have to work): group discussion

Instructions for the teacher:

Ask students to formulate a hypothesis based on the input of the first session “Orientation”. This hypothesis could be phrased as a question or a statement. Break the hypothesis into a set of questions that need to be answered. Examples of a hypothesis would be:

“Is the legal and administration framework integrated regarding our local river basin management?”

“Are there conflicts between laws and policies?”

“Are there conflicts between different levels of administration?”

“Are there synergies? What are the impacts of this framework's operation?”

“Who is responsible for protecting us from river floods?”

“Are there different administration bodies with overlapping jurisdiction?”

“Is the administration system integrated, i.e. can these administration bodies cooperate well? Why?”

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Investigation

Time estimated: 5.5 hrs

Where the activity takes place: in the classroom and outdoor

Method (how the students have to work): group-work

Instructions for the teacher:

1) Planning

Location: In the classroom

Time: 45 minutes

Materials:

Map of the town

Apps for collecting data online (Google forms, Siftr)

Ask students *“How would you go about investigating your hypothesis?”* (or the questions you have broken it down to in the first session)

Set the framework by introducing appropriate investigation techniques, i.e. literature review, interview with an expert (a local authority official, a regional authority official, an official from the Ministry for the Environment), interview or survey with locals (i.e. their parents, local businesses, etc.)

Give the student groups 20 minutes to generate an investigation plan each. By generating their investigation plan, students need to:

- Select on the map the river basin area where they want to focus the investigation
- Decide how to perform the investigation (techniques, equipment needed, materials).
- Create a timetable where they set the order of the investigation activities.

The groups present their investigation plans and reach an agreement for the most reliable and feasible. It could be a combination of the plans presented.

The teacher may then offer feedback, proposing alternatives or adjustments to the investigation plan proposed by the students. The feedback should aim at making the plan feasible and concrete in terms of time management, access to proposed resources and availability of the persons to be interviewed/consulted.

The outcome should be an investigation plan complete with the activities to be implemented, the timetable for implementing them, the groups/persons responsible for implementing them, the necessary equipment, and the communication and info sharing arrangements. The investigation plan should allow for preparation time, i.e. preparing certain material to be used (e.g. interview questionnaire design, survey questionnaire design).

2) Performing

Location: in town

Time: 4 suggested activities of about 45 minutes each

Materials:

Siftr/Google Maps

The investigation plan can be implemented on the basis of the following activities:

- ✓ Literature review / online research: The students may perform an online research regarding the laws and policies in place affecting their selected river basin's management. Focus on EU policies, national laws and policies as well as regional or local regulations or policies. *Does any policy encourage public participation in the decision making?*
- ✓ Expert interview: The students may, through their teacher, make an appointment for an interview with officials responsible for river management issues from the regional government, the local government and/or the central government. The interview questions should be prepared and communicated to the expert prior to the interview. The interview can take place through Skype or a similar platform. Alternatively, a set questionnaire can be designed and circulated (e.g. using Google Forms) to all 3 officials. Design the questionnaire in a way that will encourage each respondent to share his/her opinion, also making it comparable to the other responses.

Duration: less than 45 minutes for each interview.

- ✓ Survey: The students may perform a survey regarding the views of locals (inhabitants, businesses, visitors) on the role of different levels of administration and other organisations. The survey may help in highlighting common misconceptions. The survey should follow a short questionnaire including 1-2 open questions.

Duration: less than 60 minutes.

3) Concluding

Location: in classroom

Time: 45 minutes (each type of analysis)

In the school computer lab or at home, students proceed to the analysis of the data collected and report the main findings. The analysis may vary depending on different research techniques employed:

- ✓ Literature review / online research: Outline the main findings from the online research. Make sure to identify synergies and conflicts or gaps between the policies and laws from

different administrations. Assess the importance of each of the identified policies and laws regarding your selected local river basin.

- ✓ Expert interview: Outline the main findings from the interview regarding the students' hypothesis. Perform a comparative analysis of the replies from different sources. Can you spot any inconsistencies or room for potential conflicts?
- ✓ Survey: Analysis of the questionnaire results through Excel tables and generation of selected diagrams.

Conclusion

Time estimated: 45 minutes

Where the activity takes place: in the classroom

Method (how the students have to work): group-work

Instructions for the teacher:

The different groups (or the whole class) report their findings from the investigation activities. They compare their findings with the formulated hypothesis or check if they answered the generated questions in the conceptualization phase.

The findings from different investigation activities need to come together and be presented in one place (maybe on the classroom walls or on an interactive board). The teacher may then lead a discussion inviting comments from students on certain attributes of the findings or in cases where the findings may seem conflicting.

Discussion

Time estimated: 45 minutes

Where the activity takes place: in the classrooms

Method (how the students have to work): class discussion

Instructions for the teacher:

This phase aims to verify students' knowledge at school. The learning activity outcomes are evaluated by the teacher and the students can present their findings in front of their colleagues and teachers.

The teacher invites the students to come up with proposals for enhancing the integration of the legal framework and/or different levels of administration including public participation in the decision making, based on the findings of their investigation.

The findings, proposals and documentation material, with references to specific places in town, may be used for the development of a Location Based Game (LBG).