Title of case

Expedition of Liptov – monitoring of environmental quality in the Vah river basin in Slovakia

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Summary

The case is geographically situated in the Vah river basin (sub-basin of Danube River), that is the longest river in Slovakia (403 km) covering a catchment area of 15,075 km2. The upper region of Vah basin (approximately 80 km) is called Liptov and includes 3 larger towns of Liptovsky Mikulas, Ruzomberok, and Liptovsky Hradok and 78 small villages. The number of inhabitants in Liptov region is more than 130,000. The Liptov region is famous of thermal and mineral springs, beautiful High Tatras Mountains and several areas of high protected natural fauna and flora biotopes. It is called as tourist paradise due to numerous forests, ski resorts, open lakes, and unique caves. River network of the Liptov comprises tens of small local flows that end in Vah River. It is obvious that the quality of Vah river is influenced by many actors, starting with big industrial polluters (pulp and paper industry, machinery industry, electro technical industry, chemical industry) and ending with agglomerations that discharge waste waters directly into the river without (or primitive) treatment. Beautiful scenery of river basin is also damaged by unsensitive actions of farmers, low public awareness, and ignorant behaviour of local citizens. In addition, positions of public administration to environmental protection are rather politically declared than really implemented. All these factors result in illegal dumps, leakage septics, liquidation of forests in river side, inappropriate agro-technical procedures, and “canalization” of river meanders.

The Civic Association TATRY initiated and organised the project that aimed to attract attention of young generation towards environmental problems in Liptov region, thus is the region where young people live. The project was called "Expedition of Liptov" and was focused on basic and secondary school students who conducted the practical monitoring of a selected river basin during the summers of 2002 and 2003 (each of 36 days of monitoring). Through young people, local communities were mobilized to improve the quality of river basin. The project was supported by the Regional Environmental Centre (REC) grant under the program of the Danish Ministry of Environment and Energy and the British Department of International Development.

Tools used

B1.9 Civil society institutions and community base organisations,
B2.1 Participatory capacity and empowerment in civil society,
C1.1. Water resources knowledge base,
C4.1.-C4.3 Social change instruments

Keywords

public participation, educational campaigns, water initiatives

Importance of the case to IWRM

The case describes how local people, who are not specialists, can take part in practical monitoring and investigation of water quality in the region they live. The case shows that there are new innovative approaches available in education processes that could attract young people and their parents for the improvements of environmental quality.

1. Problems

Initiator

The Civic Association TATRY belongs to environmental non-governmental organizations in Slovakia and its long term strategy is declared in the Program of Countryside Restoration in Tatra region. This program involves:

- education activities
- restoration of non-forest vegetation
- public monitoring of river flows
- promotion of bio- products and traditional crafts
- protection of natural resources and "wise" management of natural resources.

From 2001, the civic association TATRY in cooperation with volunteers in basic and secondary schools launched the campaign "I am looking after my river". An initial idea was to bring innovative elements into education process. These elements involve "project learning" – students are taught through doing things, implementing a "project". The project learning requires higher requirements on skills, precise preparation and, very importantly, a genuine interest of teachers. Important factor is that both teachers and students are willing to invest their leisure time as implementation of project is to be conducted after daily obligations in schools. The project learning is non-traditional approach when all participants in this process contribute to the project implementation and at mean time receive skills and knowledge required.

Problems addressed

The Liptov region with its Vah River is situated in one of the most interesting place in Slovakia. The region is famous with its natural heritage and almost two thirds of this region falls under a special regime of nature protection. Unfortunately, the industrialization in the socialist system did not exclude sides of environmental protection. Numerous effects are visible today. The Vah River in the upper catchment belongs to the worst quality according to classification of river quality. The connection of inhabitants in the Liptov region to the waste water treatment reached less than 50% (in 2004). Hundreds of illegal dumps are recorded, many times in contact with river flows. Invasive plants are spreading to the national parks. Forests in river sides have been liquidated.

In spite of the fact that the both national and local governments adopted several strategic programs and documents to mitigate environmental pollution, a common excuse is a lack of financial sources. Financial means are perceived as a panacea to all environmental, social and economic problems. The same excuse (lack of money) is used to defend low public interest and ignorant behavior of local citizens including representatives of communities. It was a big disappointment of initiators of the project, who organized promotion workshops. Less than 10% of invited representatives of local communities took part.

2. Decisions and Actions Taken

The decision of few leaders in the Civic Association TATRY was to launch a massive campaign focused on an increase of public awareness, encouragement of public participation and mobilization of local community` representatives. The TATRY organised a terrain research called "Expedition of Liptov". The project was focused on basic and secondary school students who conducted the practical monitoring of a selected river basin during the summers of 2002 and 2003 (each of 36 days of monitoring). The age of participants in the project ranged from 10 – 20 years.

The first phase of the project

The terrain monitoring consisted of practical monitoring of chemical and biological parameters of water quality. In addition, the terrain research included mapping of localities of invasive plants, illegal dump yards, and status of bank covers impacted by river flows regulations. Thus, complex aspects of the environmental protection taking into account integrated views were investigated. The testing places were situated under villages to observe the influence of villages over water quality and to observe self-cleaning skills of water between successive villages in observed area. The monitoring area covered 90 localities along the Vah River.

Chemical analysis was conducted by the Compact Laboratory for water testing – Aquamerck (the determination of ammonium, nitrite, nitrate, phosphates, pH, oxygen, carbonate hardness and total hardness).

The method of Trent´s Biotic Index was used to set the biological activity of water streams. The observations were carried out in the same places together with the testing of water so as to observe the correlation between the chemical pollution and the biological activity of water streams.

Observations of biotopes in country focused on mapping of vegetation in the region with respect to its biodiversity.

Prior to the project start, the monitoring leaders (totally 4 young activists) undertook training that consisted of two elements: a) to be familiar with the terrain and monitoring equipment (where to take samples, how to monitor parameters to be representative), and b) to approach students ("pedagogical minimum"). Than project initiators undertook promotion campaign and visited schools in order to receive commitments from students and their teachers to participate at the project. Students received "monitoring suitcase" (each suitcase at the price of USD 350) including manual how to use chemicals to monitor water samples, when and where to take samples. It should be noted, that the full project was managed only by 2 girls Lenka Milonova and Veronika Vysna. They organized, managed and participated in 36 days of monitoring, processed totally 78 chemical analyses of water, developed 146 reports on monitoring results on potential illegal dumps, collected complex information on occurrence of invasive plants in 90 localities and assessed complex evaluation of environmental conditions in the investigated region.

The second phase of the project

The monitoring results were evaluated in the support of environmental authorities in order to develop a comprehensive set of documentation. It was very important to teach students how to interpret the results of site monitoring. In addition, following promotion activities were conducted in order to fuel the mobilization of local communities:

- 1, 000 pieces of "analytical papers" were disseminated to representatives of local governments and citizens
- Public hearing on monitoring results
- Publishing of monitoring results at local media and web pages (www.ekokompas.host.sk)
- Photo exposition with tour under the title: "*Flows are not sewers*" (this slogan in Slovak language is a rhyme)
- Distribution of 40 000 posters on water protection themes distributed to local households
- Initiative "*Adopt your River*" encouraged people to "adopt" the length of river; certificates of the adoption were sold and money collected was used for the environmental promotion
- Production of T-shirts "*RiverWatch*" – riecna hliadka
- Publication and dissemination of education material "*River as living organism*" that was distributed to 800 schools in Slovakia
- Organization of 19 education seminars
- Organization of painting contest "*River – Live and Dead*".

The successful project resulted in the initiative of local communities: more than 700 people agreed to clean up the river banks. During the 5,600 hours of voluntary work it was filled more than 1,400 bags of litter. Several other activities are now initiated dealing with the nature protection, removal of illegal damps, biotopes research, revitalization of villages, and others.

3. Outcomes

The results of the monitoring were processed and recorded with the support of environmental teachers, water experts, and environmental authorities. The results of monitoring were very surprising for local communities that did not pay any attention in the past. Totally 63 km of river was monitored of which, 17 analysed parts of water streams belong to the 5th, the worst class of the quality of water; 37 parts of water streams belong to the 4th class, 21 parts belong to the 3rd class, and only 1 part belongs to the 2nd class of the quality of water.

Pollution recorded was in parameters ammonium, nitrites, nitrates and phosphates. The pollution comes mainly from agricultural activities. A detailed description of agricultural practices was provided based upon the on-site observations: dung holes without any permeable walls, unregulated pasture of cattle, household septics ending directly in river flows.

Alarming outcomes were obtained from the observation of country side characteristics. It was documented that gradual technocratic regulation of river flows and melioration activities in agricultural sites do not correspond with the forecast of development of water resources in investigated region.

More than 250 illegal dump yards were determined. The existence of invasive plants (Fallopia japonica, Fallopia sachalinensis, Solidago canadensis, Heracluem mantegazzianum and others) was ascertained in 90 localities.

All results were submitted to the environmental inspectorate and other public environmental and municipal authorities. The environmental inspection is now using the monitoring data in planning of inspections in selected operators and waste water treatment plants.

Importantly, there are also outcomes with respect to education purposes of the Expedition Liptov. Students learnt why selected chemical parameters are important for the classification of water purity. Also, which types of river organisms indicate good or bad status of water. Impacts of environmental pollution were directly demonstrated from the observations of country. Students understood the importance of biological diversity. Also, they could practically see what are the functions of bank vegetations that protect the soil from the erosion. All the knowledge was received in “active” learning and self-observation.

Impact of the action

The initiative of the Civic Association TATRY brought attention of official authorities to complex evaluation of environmental situation in the region and

mobilizes actions of local citizens. It was proved that lack of financial sources is not a root to environmental problems. Increased role of public participation and education of young generation might be an effective tool to implement environmental strategies at national or regional and local levels.

4. Lessons learned and replicability

Practical monitoring survey supported the environmental education and students better understand the water cycle and water pollution in a complex way. The "project" learning is attractive and brings face to face experience. Also, it is important to make linkages between environmental NGOs, local government and environmental authorities in order to implement any policy or national program. Also, the concept of integrated water resources management could be better explained and demonstrated, as the project allowed for practical experience of participants. The project resulted in the idea to establish so-called "River coalition" that grouped together different stakeholders in impacted localities. The main mission of the River coalition is promoting water protection based upon the approaches of integrated water resources management. The case could be replicable in many other regions in Slovakia or other parts of the world. Also, the project could be initiated by different stakeholders – ranging from official initiation of education centres, schools, NGOs or even governments.

5. Contacts, references, organizations and people

Overal results of the project could be found at:
http://www.ekokompas.host.sk
http://www.fns.uniba.sk/zp/oztatry

These web pages contain also photographs, tables, and graphs.

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