2.3 Water quality

ASSESSMENT

Water management remains one of the main challenges when it comes to natural resources management in the Republic of Serbia. In order to achieve the targets set by the *Law on Waters*, more ambitious implementation, better enforcement, and better cross-sectoral integration are required to ensure the sustainability of all activities that have impact on water such as hydropower, navigation, and agriculture.

RATIONALE

Water quality in Serbia is relatively unfavorable, which is primarily caused by the absence of water treatment systems so that municipal and industrial waters are mainly discharged without being treated before in any way. *National Environmental Approximation Strategy for the Republic of Serbia* (NEAS) describes drinking water quality across the country as "generally unsatisfactory". When it comes to running waters, generally, the worst water quality is to be found in the channel systems in Vojvodina (according to the Agency for Environmental Protection). Industrial facilities and urban agglomerations remain the main polluters, as well as agriculture.

Another major issue pertains to water management and that is the lack of *Water Management Strategy* (WMS). The *Law on Waters* foresees the development of the WMS as a planning document that sets a long-term direction for water management. According to the Law the strategy is supposed to be adopted during the year 2012 and it has not been adopted yet. In the meantime, documents related to water management are issued based on *Basis of Water Management of the Republic of Serbia*, a strategic document from 2001 (Ser. *Vodoprivredna osnova Republike Srbije*).

The main instrument for water management is the *Water Act* (Ser. *Vodna knjiga*), which regulates the use and protection of water resources at a project level. The Water Act, however, does not provide a framework for strategic and integrated planning of all sectors of water management – which include river engineering, torrent construction, wastewater management, water supply and freshwater protection. The Law envisages the establishment of a National Conference as a tool to ensure public participation in the creation of strategic framework and monitoring of its implementation. The conference, as designed by the Law, has been compromised through the following:

- Its members are nominated by the Government;
- Resources for its work are provided by the budget of the Republic of Serbia;
- It annually reports to the Government.

The body intended to represent interested public and steer control the work of the Government is responsible to and dependent of the very same Government, therefore no surprise that there

is little transparency of its work, e.g. there is no evidence of meetings, appointments of its members etc.

Developments

Following the Energy Community Treaty (ECT) establishment in 2005, the opening up of the EU market to Balkan countries implies a boost in foreign investments and increased electricity trade between EU and non-EU countries. This could create more direct access to the resources available for building dams and thus facilitate the conditions causing damage to freshwater ecosystems. When Small Hydropower Plant (SHPP) projects are considered, Ministry of Energy Development and Environmental Protection (2013 and beginning of 2014) had organised two rounds of calls for interested investors. While the first round has already been completed and list of possible investors for 317 locations has been created another call has been launched for additional 142 locations. Both calls were organised before results from the IPA financed project were available to provide assistance in the area of renewable energy including revision of the cadaster of SHPP.

The dramatic losses of lives and homes caused by the tremendous floods in Serbia in May 2014 clearly showed that the strategic planning in terms of mitigation of natural disasters is needed. The *Law on Waters* envisages that a plan of flood risk management will be adopted by the year 2017.

Recent events in the city of Užice provide further evidence of the weaknesses in legislative and strategic framework as well as in law enforcement. Accumulation from which the city of Užice is supplied with the drinking water became infected with the bacteria. Water supply from this accumulation has been cancelled and after long period of ad hoc water supply another water pipeline has been constructed to enable emergency supply from other source. In july 2014. Department of Public Health in Užice issued a statement that water from municipal water supply system is not usable for drinking but for sanitary and technical purposes only one small hydro power plant operates at the accumulation and is accused for operating with water permit revoked. Furthermore, media reports indicate that water permit has initially been issued despite the breach in the issuance procedure.

Challenges

Water for agriculture accounts for high amount of total water used in the country. Agriculture is the main sector responsible for water pollution by chemical fertilizers and pesticides through water runoff from fields to adjacent rivers, wetlands and lakes. The impact of agriculture on water must be addressed if conservation of freshwater ecosystems is to be secured.

The construction of dams without a serious assessment of existing alternatives, environmental impact assessments and socio-economic cost and benefit analyses is a threat and needs to be tackled. The nature of the work is extremely challenging due to the complex political implications, the major economic and financial interests involved, the priority given to energy

development with respect to any other objectives, particularly safeguarding the environment. Addressing this complex array of interlinked issues will be a challenge, but one which must be faced in order to abate or mitigate these threats in the most effective manner.

Currently, the water losses in the supply systems are considerable in a large number of towns amounting to 20-30%, and even 50% in some towns. The reason for that lies in the poor maintenance of water supply networks and installations, above all because of the low price of water. To cover the losses, it is necessary to draw considerable amounts of high quality water, which, apart from being financially unsustainable, puts additional pressure on already endangered water resources in certain areas. It is, therefore, necessary to enforce measures that would resolve this issue. Several studies predict that extreme weather events will occur more often in the future. Better governance and water management measures through involvement of all relevant stakeholders and participatory planning processes will mitigate the effects of severe floods.

RECOMMENDATIONS

The overall recommendation is to develop the *Water Management Strategy* through a transparent and participatory process as soon as possible.

Republic of Serbia should pay particular attention to the link between water and agriculture, with a focus on the promotion of sustainable agricultural (e.g. organic) practices and climate change adaptation measures[11] e.g. through the use of crops not too demanding in terms of water and efficient irrigation technologies.

It is necessary to assess the influence of climate change on the availability of the use of waterways for power generation, as well as the assessment of the impact of hydro-energy sector on biodiversity and aquatic ecosystems. There is a clear need to minimize the impact on freshwater ecosystems, due to hydropower infrastructure. In the framework of the International Commission for the Protection of the Danube River (ICPDR), at a meeting held on 18th and 19th June 2013, the decision was taken on the adoption of *Guiding Principles on Hydropower Development in the Danube River Basin*. In accordance with that, it is very important to establish areas of high ecological value where the construction of new hydropower plants would not be possible, and in areas with the lowest environmental value to build a new plant with minimum negative impact on the environment.

In order to reduce loss in the water supply systems, in the first place, the gradual price increase of water and communal services to the economically justified level, making sure that all necessary measures of social protection for the economically most vulnerable consumer categories. Establishment of self-financing as one of the conditions for rational use and consumption of water, and protection of and against water is necessary in order to achieve: integrated water management, financing of water management along the principles of “user pays” and “polluter pays” and improvement of water quality – through reduction of pollutant emission and better sewage treatment.

[11] Znaor et al. (2014), *Seeds of Change- Sustainable Agriculture as a Path to Prosperity for the Western Balkans*, Heinrich Böll Foundation. http://rs.boell.org/en/2014/06/19/seeds-change-sustainable-agriculture-path-prosperity-western-balkans

The approach to future flood mitigation has to be built on the following principles:

- good coordination – harmonized activities of responsible organizations at local, regional and national level;
- integrated approach – ensuring protection of water resources by combining financial and non-financial measures;
- environmental approach - ecosystem-based activities for risk reduction that should be considered alongside more conventional, infrastructure-based activities*;*
- prevention – preventing construction in areas susceptible to flooding, mainly by producing maps of blue zones and installing measures that discourage building in those areas, which comply with the principles given in the EU Flood Directives as well as citizens' education about floods and existing defense limitations;
- realistic – awareness that there is no absolute defense against flooding, but adaptation measures properly planned and implemented could mitigate the consequences of flooding.

The use of environmental management to reduce disaster impact is often less costly, more effective, and more socially sustainable than traditional structural measures. When structural disaster risk reduction activities are used, however, it is critical that they address environmental sustainability so that future risk is not increased and neighboring communities are not adversely affected. There is a set of ecosystem-based activities for risk reduction that should be considered alongside more conventional, infrastructure-based activities and measures. A few examples include stabilizing hillsides with vegetation, creating open spaces to absorb floodwaters, as well as river and wetland restoration. These approaches can be an integral part of disaster risk reduction planning that would also include early warning systems, response capacity, and infrastructure-based approaches. Civil society participation would give a major added value to the monitoring of the existing EU funds designated for recovery after the floods.