

Support of implementation process of EU directive 2007/60/EC on the assessment and management of flood risks in Georgia

Peter STRADIOT

Section of Programs, Concepts and Water Planning, Water Research Institute, Nabr. arm. gen. L. Svobodu 5, 812 49 Bratislava, e-mail: stradiot@vuvh.sk

Abstract: The Directive 2007/60/EC on the assessment and management of flood risks entered into force on 26 November 2007. The government of Georgia has been declared for a long time orientation to European Union. This applies also to water sector. In spite of significant progress in this field there is still a challenge to improve legal, personal and technical security, especially in the sphere of flood protection as a part of crisis management. Georgia suffers from floods, landslides and mud every year. In the period 2003 – 2009, damages reached the value of more than 250,000 USD. It is expected that implementation of the EU Directive 2007/60/EC will enable accurate identification of threatened areas as well as adoption of necessary measures, especially development and issuing of accurate hydrological forecasts and warnings. This issue was solved in the framework of the project “Support of support of implementation process of the Directive 2007/60/EC on the assessment and management of flood risks in Georgia” financed from the program SlovakAid. The implementing organisation was the Water Research Institute Bratislava and partner organisation was National Environmental Agency in Tbilisi, Georgia.

Keywords: flood protection, Georgia, EU Directive 2007/60/EC, project

Introduction

The Directive 2007/60/EC on the assessment and management of flood risks entered into force on 26 November 2007 (Gajdová, 2009). The government of Georgia has been declared for a long time orientation to European Union. This applies also to water sector. In spite of significant progress in this field there is still a challenge to improve legal, personal and technical security, especially in the sphere of flood protection as a part of crisis management. Georgia suffers from floods, landslides and mud every year. In the period 2003 – 2009, damages reached the value of more than 250,000 USD. It is expected that implementation of the EU Directive 2007/60/EC will enable accurate identification of threatened areas as well as adoption of necessary measures, especially development and issuing of accurate hydrological forecasts and warnings.

This requires data from surface water quantity monitoring. There were only 23 operating hydrological stations in Georgia (there are about 430 in Slovakia). Besides review of main legislation it was necessary to formulate a general framework of the Directive 2007/60/EC implementation, get know areas with flood risk and determine conditions for operation of flood forecast service in Georgia.



Figure 1. Flood on river Kura in March 2010 – mixture of water and mud (NEA, 2010)

Material and method

The issue was solved in the framework of the project “Support of implementation process of the Directive 2007/60/EC on the assessment and management of flood risks in Georgia“ financed from the program SlovakAid. The implementing organisation was the Water Research Institute Bratislava and partner organisation was National Environmental Agency in Tbilisi, Georgia.

The project provided following outputs:

1. Elaboration of mechanism for harmonisation and implementation of the Directive 2007/60/EC into Georgia legislation;
2. Elaboration of methodology for development of flood risk maps and supplementing the surface water quantity monitoring according to requirements of flood protection in Georgia in a pilot river basin Alazani;

The Output 1 included activities

- 1.1 Detail analysis of present situation and specification of needs in the framework of implementation of the Directive 2007/60/EC on the assessment and management of flood risks;
- 1.2 Elaboration of Roadmap for harmonisation and implementation of the Directive 2007/60/EC in Georgia legislation;
- 1.3 Elaboration of Draft edict determining details on operation of flood forecast service in Georgia;

The Output 2 included activities

- 2.1 Elaboration of methodology for development of flood risk maps;
- 2.2 Elaboration of Proposal of measures against floods and GIS maps of flood risk for river basin Alazani;
- 2.3 Application of hydrological model in pilot area in Georgia for flood protection purposes
- 2.4 Purchase and installation of automatic hydrological stations in the river basin Alazani in Georgia;
- 2.5 Study tour experts from partner institutions in Slovakia

Results and discussion

Ad 1.1

There was elaborated a detail analysis of state of implementation of the Directive 2007/60/EC on the assessment and management of flood risks into Georgia legislation. The matter was especially evaluation of existing legislation. Also results and knowledge from

previous projects on implementation of EU directives in Georgia were taken into account. We cooperated intensively with institutions that are responsible for settling extraordinary situations at present, especially with the Ministry of Environment and Natural Resources Protection in Georgia. Since Slovak experts have been cooperated Georgian partners (especially from Department of Hydrometeorology of the National Environmental Agency for several years the cooperation smoothly proceeded. Results of analysis and specification of needs for implementation of the Directive 2007/60/EC were processed in the form of report (Technical report 1). Those results also provided background for activities 1.2 and 1.3.

Ad 1.2

The result of this activity is the „Roadmap for harmonisation and implementation of the Directive 2007/60/EC on the assessment and management of flood risks into Georgia legislation“. This document will help the Ministry of Environment and Natural Resources Protection and other relevant institutions to secure flood protection and settle extraordinary situations in Georgia. It will also help the National Environmental Agency in gradual approximation and integration with EU standards. Experience of Slovak experts both from implementation of the Directive 2007/60/EC in Slovakia and from international projects were fully used (Bacik et al, 2006, Water Research Institute Bratislava 2012, Collection of Acts, 2010).

Ad 1.3

The result of this activity is the „Draft edict determining details of operation of flood forecast service in Georgia“. The document especially comes out from needs of Georgia. Specifics of region, tradition in settling of extraordinary situations, and experience from Slovakia and other European countries were taken into account. There was also described form and way of developing and issuing of forecasts and warnings and form of communication with relevant institutions on settling of extraordinary situations including flood protection.

Ad 2.1

The result of this activity was „Methodology for development of flood risk maps for Georgia conditions“. A detail recherche of existing approaches in the European Union, especially in countries with landscape relief similar to the Georgian preceded the methodology itself. The methodology is a part of Technical Report 2.

Ad 2.2

Based on the methodology mentioned in the activity 2.1 there were developed „Draft measures for flood protection“ and „GIS maps of flood risk“ for the pilot river basin Alazani. The Draft measures and GIS maps will serve institutions settling extraordinary situations and also regional and local administration in planning of activities in the area. Maps could be later used in insurance process which is not working properly in Georgia at present. Results of this activity are included into Technical Report 2.

Ad 2.3

Hydrological models are used by hydrological services for various purposes including proper location of surface water bodies monitoring network, water balance, various

scenarios for changes of surface discharge, and development of hydrological forecasts and warnings. Therefore there was done calibration and verification of the hydrological model HRON in the Alazani river basin (Marsalek et al. 2006, Hazlinger et. al, 2011). The activity included also the training for National Environmental Agency workers.

Ad 2.4

In the framework of this activity there was made a detail field survey in the river basin Alazani. Then there were selected localities for installation of 2 automatic hydrological



Figure 2. Field survey, Alazani river (project documentation)



Figure 3. Field survey, Alazani river (project documentation)



Figure 4. Field survey, Alazani river (project documentation)



Figure 5. Location of hydrological station, Alazani river (project documentation)

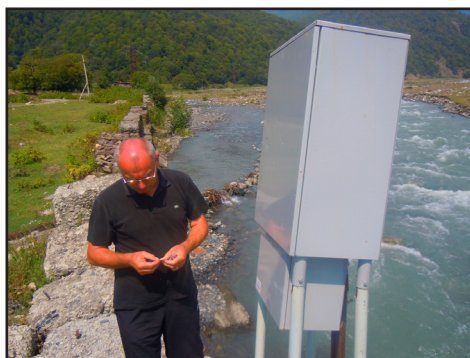


Figure 6. Installed hydrological station on Alazani river and Project Coordinator Dr. Roncak (project documentation)

Ad 2.5

Five experts from NEA Georgia (project partner) visited Slovakia in the period May 19 – May 26, 2013. They were introduced the legal framework of implementation of the Directive 2007/60/EC in Slovakia and acquaint them with system of development and distribution of hydrological forecasts and warnings as a part of flood protection in the Slovak Republic.

Conclusions

In implementation of project in a region like Southern Caucasus, an important factor appears political situation in Georgia and the whole Caucasus region. In this case it was identified as a possible external factor which could affect the project implementation. However, even after elections the political situation remained stable and had no impact on the project.

From technical point of view it was necessary to involve experts of the partner into the project and also precise dividing tasks and responsibilities.

Lessons learnt from the project:

- Involve potential partner and final receiver into the project from the very beginning, i.e. from project proposal preparation up to final completing of the whole project;
- Cooperation with existing projects in the region leads to increased quality of results and excluding of duplicities (in case of this project CzechAid, EU, UNDP/GEF);
- In order to secure sustainability of project results it is necessary to intensify the cooperation with other donors (on international and national level) and also with state administration bodies (relevant ministries and regional authorities responsible for flood protection), in order to intensify and make more transparent the assistance provided by them. The assistance should be addressed as much as possible just according to flood protection requirements;
- Cooperation with institutions in Caucasus region (cross-boundary cooperation) may result in receiving finance necessary for improvement of situation in the field of flood protection;
- Such kind of project can be applied also in other countries in Caucasus region, respectively Balkan or Eastern Partnership.

Acknowledgement

The paper is an output of the project **“Creation and development of environmental technologies in flood protection of municipalities in Little Carpathian region – Case Study Modra, code ITMS 26240220019**

References

- Project “Support of implementation process of EU directive 2007/60/EC on the assessment and management of flood risks in Georgia“, project code SAMRS/2011/06/03, Final Report
- Bačík, M., Babiaková, G., Halmó, N., Lukáč, M. (2006): Európske právne dokumenty o ochrane pred povodňami a ich implementácia v Slovenskej republike (European legal documents on flood protection and their implementation in the Slovak Republic). In: Flood protection, proceedings from international conference Podbanské – Vysoké Tatry, Grandhotel Permon, 4th – 7th December 2006
- Collection of Acts: Act No. 7/2010 Z. z. from 2nd December 2009 on flood protection. Collection of Acts, Part No. 3/2010, p. 26-56
- Gajdová, J. (2009): Implementácia Rámcovej smernice o vode – základ vodohospodárskej politiky EU (Implementation of the EU Water Framework Directive – background of the EU water policy), Enviromagazin (Journal of the Ministry of Environment SR and Slovak Environmental Agency), Banská Bystrica, Slovakia
- Hazlinger, M., Zvolenský, M (2011): Možnosti využitia nowcastingu pri predpovedi privalových povodní (Possibilities of nowcasting use in forecast of flash floods), paper at the international conference “Management of Floods and Flood Risks, 6.-8. 12, 2011, Casta-Papiernicka, Slovakia
- Marsalek, J., Stancalie, G., Balint, G. (2006): Transboundary Floods: Reducing Risks Through Flood Management, Springer, Dordrecht, The Netherlands
- Water Research Institute Bratislava (Kunikova, E.), Slovak Environmental Agency, Slovak Hydrometeorological Institute Bratislava, Slovak Water management Enterprise (2012): Analysis of progress reached in implementation of Program of Measures of Water Management Plan of Slovakia, Official interim report for the European Commission, Ministry of Environment SR, Bratislava