

## European funds for flood protection measures in Smolyan - Bulgaria <sup>[1]</sup>

Image from Climate Adapt about this case study

[2]

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In response to flooding causing damage in Smolyan's Ustovo neighbourhood in 2005, the city implemented a number of flood protection measures that presumably have paid off already during the wet year of 2014. Under the project, river banks were widened, existing protection walls were reinforced and new walls constructed. The cost of about 480,000 EUR was mainly derived from funding by the European Regional Development Fund (ERDF). The constructions aimed at minimizing the chance on future floods thereby avoiding damage and possible negative impacts on human health and the environment. Following on the successful implementation of the ERDF project, the current 7-year Municipal Development Plan of Smolyan (developed in 2014) has incorporated more flood protection measures for other neighbourhoods in the city. These will be implemented stepwise in the programme period.

### Case Study Description

#### **Challenges:**

In 2005, the Ustovo neighbourhood in the city of Smolyan experienced serious problems due to flooding of the Cherna River after extreme rainfall. In the beginning of August 2005, the Ihtiman cyclone formed over the western Mediterranean and moved eastwards to enter the west of Bulgaria on August 4. The night from 5 to 6 August is marked by the severity of the weather in the Rhodopes mountains, close to Smolyan. The region of Smolyan is among those reporting the highest 24-hour cumulative amount of precipitation (156 mm, 218 litres per square meter) at 7h30 local time on August 6.

The district's infrastructure was not built to handle this amount of precipitation (which is known to happen once every 1000 years) and the Cherna river that flows through the city burst its banks and caused people's homes to be flooded and damaged. Though it is uncertain whether climate change will increase the frequency and intensity of extreme precipitation events in Smolyan, the municipality decided to be on the precautionary side and took measures to adapt the district's infrastructure to future floods.

#### **Objectives:**

The flood protection measures have been implemented to reduce the risk of flooding in the Ustovo District (specifically residential areas "Progresi" 1, 2 and 3) in the city of Smolyan with the aim to protect the population and to prevent flood damage.

#### **Solutions:**

The project consisted of two main construction works: (1) expansion and cleaning of the riverbed of the Cherna River to have a higher capacity for dealing with high amounts of water, and (2) reconstruction and upgrading of the existing retaining walls and construction of new walls with reinforced concrete railings and parapets on the left and right bank of the river. These works are carried out through nine sub-projects. In total 240 metres of new flood walls were built, and over 430 metres of existing walls were reinforced. The new Municipal Development Plan envisages construction of additional facilities to prevent flooding, including: cleaning the riverbeds of vegetation and sediments, reconstruction of the two municipal dams (Kiranov dol and Laga), and afforestation of adjacent land.

In order to be informed and warned in time, the municipality regularly receives information on rainfall by the

Ministry of Environment and Water. Also, there is a website (<http://arda.hydro.bg> [3]) which provides hourly information (even per minute) on expected rainfall and river water levels. Municipal experts process this information and post it on the municipal website.

**Importance and relevance of the adaptation:**

OTHER\_POL\_OBJ;

Additional Details

**Stakeholder engagement:**

The Mayor and the municipal experts held many meetings during the project where they thoroughly explained to residents the need for the flood protection measures and their positive effect. Few people were directly affected by the construction works. There were some issues with the residents as, for instance, illegal buildings on the construction site, like barns and gardens that had to be demolished before work could start. However, they could be solved within the legislative framework and did not result in protests or any major negative reactions.

**Success and limiting factors:**

Funding by the EU was an important factor in enabling the construction works. The municipality applied for funding with the Operational Programme 'Regional Development' (see also 'Costs and Benefits' section), for which granting can be hard sometimes. Municipal experts took care of the application form and they had access to all the information required for the project, including preliminary studies and technical designs, as well as a clearly defined goal. This helped them greatly in the process of applying for EU funding. The project proposal was submitted to the ministry of regional development in 2012. The ministry acted at the time as a managing authority of this programme and when the project was granted, a contract was drafted between the ministry and the municipality of Smolyan. In the next phase, an open procedure was started for the construction work. The construction company answered directly to the municipality, who in turn reported to the ministry.

Other factors that contributed to the smooth implementation of the project were the fact that the land on which the measures are being implemented is owned by the municipality and that it was easy to obtain building permits.

**Budget, funding and additional benefits:**

The costs of the flood protection measures combined surmounted to 933.438 Bulgarian Lev, or €477.259 Euro. A small part, 5% of the total sum (46.959 Lev, or €24.010), was provided from the municipal budget of Smolyan. The majority of funding 886.478 Lev (€453.249) originated from the EU through the Operational Programme "Regional Development 2007 – 2013 (Contract No BG161PO001/1.4-06/2010/011), 'Support For Small-Scale Measures To Prevent Flooding In Urban Agglomerations'. This programme was approved by the European Commission in 2007 and applied to the whole territory of Bulgaria for the period 2007-2013. The main objectives of the Operational Programme were to:

- reduce the socio-economic differences between Bulgaria and other EU Member States;
- make living and working conditions in Bulgaria more attractive;
- develop tourism potential; and
- stimulate investments in smaller municipalities.

The Operational Programme fell under the framework laid out for Convergence and Regional Competitiveness and Employment Objectives (co-funded by the European Regional Development Fund (ERDF)) and had a total budget of around €1.6 billion.

The benefits of the measures (in terms of reduced damage due to flooding) have not been estimated and quantified. One could say, however, that the damage of the 2005 flood event will now be avoided during future heavy precipitation events. In fact, a reoccurrence with significant damage could have occurred in 2014. The year 2014 was a very wet year and other neighbourhoods in Smolyan have experienced flooding, but the Ustovo district was not affected. Other co-benefits have not been taken into account.

The new measures of the current Municipal Development Plan will be funded by different sources such as by the municipal budget, the Operational Programme 'Environment' (2014 – 2020), Cross-border Cooperation Programmes, and by the Inter-ministerial Committee on Disaster.

**Legal aspects:**

The main bodies responsible for flood protection care in Smolyan are the East Belomorksi Region Basin Directorate of Plovdiv, as well as the mayor of the municipality of the water course concerned. The municipality is responsible for maintenance of the implemented measures which consists of cleaning the riverbed of vegetation and sediments twice a year.

**Implementation time:**

June 2011 – June 2013.

## Reference Information

**Contact:**

Nadya Mileva

Economic Development, Tourism, International Programmes and Projects Directorate

Smolyan Municipality

4700 Smolyan, 12 Bulgaria Blvd., Office 235

Tel.: + 359 301 62357, 67637

E-mail: [smol@abv.bg](mailto:smol@abv.bg) [4]

**Websites:**

<http://climate-adapt.eea.europa.eu/eu-adaptation-policy/mayors-adapt/cit...> [5]

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