

**MINISTRY OF INTERNAL AFFAIRS
GENERAL INSPECTORATE FOR EMERGENCY SITUATIONS**



Measures to reduce disaster risks at national level

Among multiple risks Romania is facing for the last 10 years, the most frequent risk is represented by floods generated by heavy rain falls over a long period of time or by overflow of Danube River or Romanian internal rivers, causing many victims and important economic losses. Massive rainfalls can also lead to landslides, especially if the phenomenon is associated with uncontrolled and illegal deforestation.

Dangerous meteorological phenomena, in particular heavy rain falls and their increasing probability of occurrence are a clear signal that climate change is a real threat. Climate changes oblige us to approach future risks with a new vision, approach which needs to be adopted in order to protect citizens and their livelihoods, as well as providing a normal climate and economic stability for the country. To create a new risk reduction vision adapted to climate changes and others challenges, is not sufficient to consider only “lessons learned” but, at the same time, to use innovation and research.

We can also talk about an increasing vulnerability for population which tends to be more dependent of authorities and public facilities, loosing year by

year its capacity to be self-sustained, especially with the increased unplanned urbanization. The interruption of these facilities could lead to a crisis.

Depending of the type of the hazard, we can speak about different methods for disaster prevention. If we speak about disaster caused by the manifestation of a dangerous natural phenomena (meteorological or geological), it is a fact that we cannot prevent those phenomena to happen, but we must work in order to predict them and adopt measures to decrease the vulnerability and increase the reaction capacity to mitigate disaster effects and restore normality.

The risk, according to International Strategy for Disaster Risk Reduction, represents the product between hazard and vulnerability reported to reaction capacity of a nation or a system. To reach a small value of risk we must pay attention to some key elements that define risk, like predicting different hazards (where applicable), improving early warning systems, decreasing vulnerability, increasing reaction capacity and sustainable reconstruction.

We will further speak about the risk caused by floods on Romanian territory and also, about disaster risk reduction in Romania. We will take into account both, past actions (lessons learned) like a reflection and a correction model and new methods for facing climate change and society development.

Unfortunately, in the last period, we had a “black” series of floods which affected different settlements near to Danube River or internal rivers or settlements situated in valleys affected by flash floods or landslides. As a result of floods there were victims, livelihoods damaged, economic disruption at local level and economic losses reflecting in the national economy. As a statistic from 2005 till 2013, floods affected our country each year (2005 – 40 counties affected, 2006 – 34 counties affected, 2007 and 2008 – 18 counties affected, 2009 – 11 counties affected, 2010 – 37 counties affected, 2011 – 33 counties affected, 2012 – 38 counties affected and 2013 – 39 counties affected), causing about 100 deaths and losses over 2 billion euro only in 2005-2006.

Public authorities with responsibilities in managing flood risk - General Inspectorate for Emergency Situations and Ministry of Environment and Climate Change - made efforts to reduce flood risk, to raise awareness and preparedness of population and to support mitigation and sustainable reconstruction of affected communities.

General Inspectorate for Emergency Situations worked to increase awareness and preparedness of the population and also the reaction capacity in case of floods in order to insure the success and the efficiency of its mission to protect and save people and their livelihoods. There has been promoted public campaigns to inform adults and especially the children about the floods risk, having in mind the fact that children represent a key element in the process of changing existing behavior and attitude.

Also, in its position of coordinating the management of emergency situation on Romanian territory, General Inspectorate for Emergency Situations works together with the Ministry of Environment and Climate Change to reduce floods risk. Among all the measures taken by the ministry we can identify both non-structural and structural measures. Non-structural measures are those measures adopted in national legislation and floods defense plans at local level, county level and basin level. As structural measures we can talk about hydro technical works for floods like dams, dykes, reservoirs, flood enclosures, but also developing of meteorological and hydrological forecast and early warning systems.

An example of structural measure against floods taken during floods in 2013 was Bentu dyke rehabilitation, Ialomita county, because a part of it was affected and there was the risk that 30.000 hectares of grains, corn and sunflower, a petrol transport conduct, many electricity transport lines and 10 km of motorway might been affected by floods.

In order to reduce floods risk, an important role is represented by legislation which, in present, has many gaps and allows building new construction in flood-prone areas and increasing thus vulnerability.

Although there is a national law stating that all citizens are obliged to insure their household against natural disasters – floods, earthquakes, landslides, only a small percent of population had signed insurance policies, mostly in the cities. The main drawback of this situation is the fact that the people more exposed to natural disasters are the poor people living in high risk-prone areas, with no financial resources to pay a policy.

In order to ensure a better management of flood risk in the Danube Basin, the Ministry of Environment and Climate Change, in partnership with another 19 stakeholders from 7 countries, implemented Danube FLOODRISK project (2007-2012). Danube Floodrisk was a transnational, interdisciplinary and stakeholder oriented project focusing on the most cost-effective measures for flood risk reduction: risk assessment, risk mapping and risk reduction by adequate spatial planning. The project outcome is an Atlas containing hazard and risk maps for the entire basin for 3 scenarios: frequent event with 30 years return period, medium event with 100 years return period and extreme event with 1000 years return period. This atlas will enable decision makers to compare different types of risk and to optimize measures for risk management.

In addition to Danube FLOODRISK, the Romanian Institute of Hydrology and Water Management got involved, alongside other 5 stakeholders from Greece, UK, Spain, Germany and Portugal, in Flood CBA project (2013-2015), which aims to establish a sustainable Knowledge Platform for the use of stakeholders dealing with the Cost-Benefit Analysis (CBA) of flood prevention measures in the context of different socio-economic environments within the EU.

Also, the General Inspectorate for Emergency Situations has initiated a project in order to support authorities developing their national risk assessments

for specific risks and mainstream their efforts in a single system. The RO-RISK project aims to develop the tools for national risk assessment (methodology, data bases, GIS portal) in order to facilitate stakeholders' access to risk and vulnerability information and to ensure data exchange between public authorities. This system will help authorities to identify the interlinkages and to eliminate overlapping, so that separate efforts can be reunited and costs can be reduced. Moreover, one of the project outputs is risk maps for scenarios with national impact. An overview of these scenarios will help public authorities to establish common priorities for action in the disaster risk reduction area.

Taking into account „lessons learned”, our actions should be directed towards preparedness of people, improving forecast and early warning systems to provide enough time for evacuation when needed, adopting new methods and materials or even a better maintenance of existing dykes to assure those having a great efficiency against floods. Also, legal framework must be revised and improved to gain a better control about new construction and a better insurance system to increase people's trust in this kind of institution and be prepared to cover all the damages resulted from floods for those who had an insurance policy.

An very important accent for prevention, as well as preparedness and intervention is represented by research and innovation which can help us to improve our methods, actions and materials used to keep up with the fast society development, both, social and economic speaking, and with climate change or new technologies used in industry which implies new risks.

Disaster risk reduction in Romania, especially floods risk, involves, in addition to public authorities, communities already affected and those ones in danger to be affected by a future risk, thereby working together both, communities and public authorities, is the only efficient way to reduce disaster risk on national territory.