

Annex 3: Framework for reporting identified practices

	Section	capability assessment
1	Title of the practice	Landslide mitigation and prevention in Gabrovo Region
2	Precise theme/ issue tackled by the practice	Landslides mitigation and prevention
3	Objectives of the practice	<ul style="list-style-type: none"> • To identify and analyze all possible factors and risks connected with landslides • To present the existing means and capacities for mitigating landslides • To showcase existing projects in the area of landslides mitigation and prevention
4	Location	Gabrovo region – the territory of 4 municipalities – Gabrovo, Sevlievo, Dryanovo, Tryavna
5	Detailed description of the practice	<p>Landslides pose a recurrent hazard to human life and livelihood in most parts of the world, including Bulgaria. Gabrovo region has one of the highest levels of landslide risks in the country – mostly due to its diverse relief and intensive river and underground water networks.</p> <p>Hazards are mitigated mainly through precautionary means—for instance, by restricting or even removing populations from areas with a history of landslides, by restricting certain types of land use where slope stability is in question, and by installing early warning systems based on the monitoring of ground conditions such as strain in rocks and soils, slope displacement, and groundwater levels. There are also various direct methods of preventing landslides; these include modifying slope geometry, using chemical agents to reinforce slope material, installing structures such as piles and retaining walls, grouting rock joints and fissures, diverting debris pathways, and rerouting surface and underwater drainage. Such direct methods are constrained by cost, landslide magnitude and frequency, and the size of human settlements at risk.</p> <p>Landslides mitigation and prevention is a priority for Gabrovo region government and the local municipalities. Gabrovo is one of</p>

		<p>the regions taking part in the national operational programme “Regional Development”, sponsored by the EU. There are several projects focused on landslides mitigation and prevention, currently being implemented.</p> <p>Most known mitigation instruments/measures are actually implemented, such as:</p> <ul style="list-style-type: none"> - Geometric methods, in which the geometry of the hillside is changed (in general the slope); - Hydrogeological methods, in which an attempt is made to lower the groundwater level or to reduce the water content of the material; - Chemical and mechanical methods, in which attempts are made to increase the shear strength of the unstable mass or to introduce active external forces (e.g. anchors, rock or ground nailing) or passive (e.g. structural wells, piles or reinforced ground) to contrast the destabilising forces.
6	Evaluation and effectiveness	<ul style="list-style-type: none"> • There is a good knowledge of the current state of landslide risks areas in the region. • The current measures taken are well planned and applied • There is need for additional efforts in implementing new and more cost-efficient solutions.
7	Lessons learnt from the practice	The main learning is that landslides need to be mitigated and prevented as early as possible. Also when planning and developing new populated areas or constructions, the landslide risks need to be taken in consideration extremely seriously.
8	Contact information	+359 66 800200
9	Other possible interesting information	<p>Website: http://www.gdgz.mvr.bg/ http://www.gabrovo.bg</p>