VÉDELEM TUDOMÁNY
KATASZTRÓFAVÉDELMI ONLINE TUDOMÁNYOS FOLYÓIRAT

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OBSERVATIONS OF VIS MAJOR HARMFUL NATURAL EVENTS IN PEST COUNTY

Abstract

The most typical harmful events posing natural threats within the county are those induced by precipitation, surface and groundwater fluxes. Beside the floods which have been reaching the settlements recently in every 3-4 years from River Duna, Ipoly and Zagyva and the inland water appearing in the southern part of the county, water damage done by flash floods in the northern mountain area have become excessively widespread lately.

Keywords: flash flood, water damage, reconstruction

VIS MAIOR KÁRESEMÉNYEK TAPASZTALATAI PEST MEGYÉBEN

Absztrakt

A természeti veszélyeztető hatások közül a felszíni, felszín alatti vizekhez és a csapadéktevékenységhez kapcsolódó káresemények a legjelentősebbek. A településeket az elmúlt időszakban 3-4 évente elérő Duna – Ipoly, Zagyva folyók árvizén és a megye déli területén megjelenő belvízen túl, rendkívül gyakorivá váltak az északi hegyvidéki területeken a villámárvizek okozta helyi vízkárok.

Kulcsszavak: villámárvíz, vízkár, helyreállítás

1. VIS MAJOR

The purpose of the vis major support is to cover the costs of protection operations necessitated by harmful natural events partially or totally, to provide financial support to reconstruct estates owned or handled by local governments which provide compulsory government services and last, to partially subsidise costs necessitated by emergency mosquito control (Reference: 9/2011. (II. 15.) Government Regulation). A detailed set of rules for local governments is laid down in this regulation, relating to how the vis major support can be claimed, how it is allotted, channelled and utilised.

Due to the regulation of the Ministry of Internal Affairs may subsidize local governments in the following situations:

a) to provide partial or total support to cover the costs of protection operations induced by unpredictable natural events and other types of looming threats

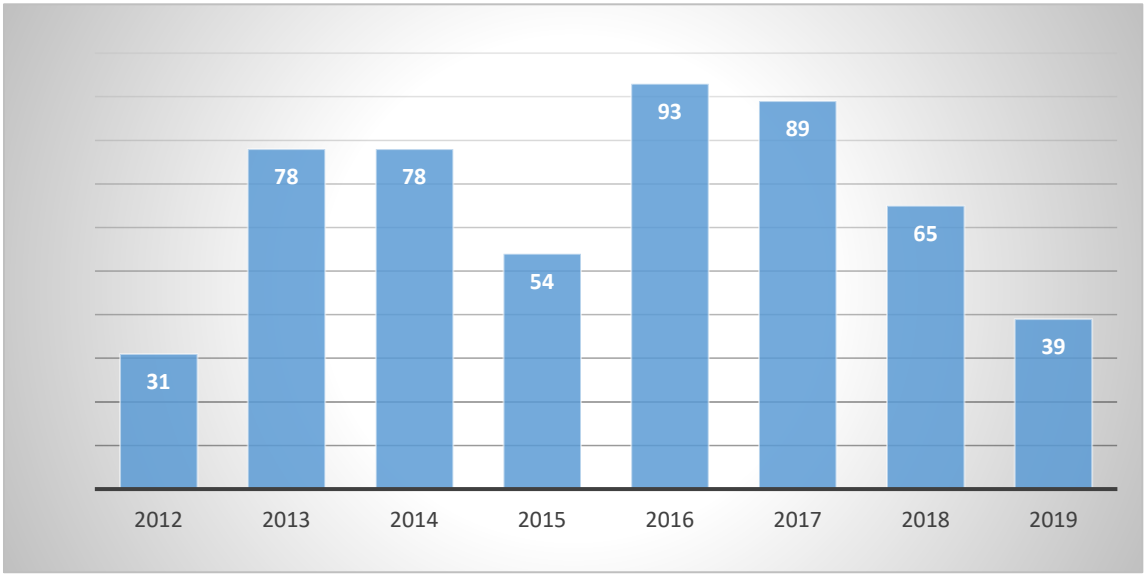
b) to provide partial support to cover the costs of recovery operations induced by unpredictable natural events and other types of looming threats. This subsidy is allocated to rebuild properties of the local government, such as estates providing compulsory government services, estates operated obligatorily by the local government, riverbanks and other estates which are state-owned but are handled by the local government. Along the process of subsiding recovery operations, insurance costs and other financial sources aimed at reconciling possible damage are also taken into consideration. [1]

As a consequence of different harmful events, about 3,100 vis major claims were made between 2012 and 2019, all searching to cover the surplus costs of prevention and the partial recovery of the damages done in real estates of the local government which provide compulsory government services.

2. FEATURES OF PEST COUNTY

The most typical harmful events posing natural threats within the county are those induced by precipitation, surface and groundwater fluxes. Beside the floods which have been reaching the settlements recently in every 3-4 years from River Duna, Ipoly and Zagyva and the inland water appearing in the southern part of the county, water damage done by flash floods in the northern mountain area have become excessively widespread lately. The damage done is primarily mechanical destruction, which burden settlements immensely. [2]

- Applications submitted between 2012-2019: 527
- Emergency flood prevention controls executed between 2012-2019: 794
- Financial claims amounting to: 15.6 billion HUF



Graph 1: The vis major harmful events reported in Pest county in recent years

3. THE MOST TYPICAL UNDERLYING CAUSES ARE

3.1. Precipitation and meltwater

The flood is often caused simultaneously by both of these natural effects on the River Duna and Ipoly. The financial support from the government is needed primarily in prevention and, secondarily, reconstruction. Along the protection operations carried out on flood retention facilities of the government or the local council, the majority of the costs is entailed by the construction of these facilities, delivery, landscaping and prevention works.

There are about fifty fast-flowing streams in Pest county with regular flash floods. The protection of these can primarily be carried out by prevention. The tidal flow appearing on the natural gutters and streams of the Börzsöny and Pilis Mountains is very short, typically about 1,5-3 hours. The intervention of the fire-fighters is usually restricted to saving lives and private property; flow regulation is usually not successful. The recovery, however, is costly and time-consuming. The already existing water draining facilities, maintained by the township are mostly outdated and of low capacity. Therefore, these systems are largely incompatible with the recent, regular precipitation of this mountain region. The tiles of water ditches, piers of small footbridges often cave in, concrete riverbanks are undermined and fall in, whereas clay riverbanks are typically poached and collapse.

3.2. Geographical effects

This area is liable to frequent surface movement. Construction works in these places have not been duly regulated, thus, as a consequence of harmful events, public utilities, roads and buildings are regularly damaged. The composition of the soil as well as its over-soaked condition during prolonged precipitation may often cause structural problems in the multi-storey cellar system of old buildings and public utilities.

Graph 2: The proportion of different types of vis major damage between 2012-2019

- inland water: 29%
- public utilities: 3%

- cellar and riverbed: 27%
- landslides: 6%
- estates: 1%
- roads: 34%

4. THE MOST FREQUENT DAMAGES ARE

4.1. Roads

This county is a densely populated agglomeration area, with many inhabitants moving away from the capital city. The council roads used by the locals for transportation and building purposes usually lack paved surface and proper water drainage. As a result, the damage on these roads burdened by heavy traffic is regular and recurring.

4.2. The demolishment of cellars and waterbanks

Local governments tend to finance minor improvements from their own contribution after small scale events, however, due to the lack of substantial resources, a total recovery, let alone development—especially in small mountain towns—is absolutely impossible. Thus, the gradual demolishment of roads, water drainage systems, waterbanks and cellars inevitably lead to their ultimate collapse.

5. SOLUTIONS

The roads in question are typically built with a gravel surface. The lack of adequate water drainage, rigid paving and hard shoulder cause immediate damage and threatens transport safety primarily in mountain settlements. Considering all the emergency operations carried out in

previous years, technical interventions, apparently, have outnumbered fire case interventions. Most technical back-up operation seek to ward off consequences entailed by extreme weather phenomena. [3] The road surface is rugged with deep ditches and run-off of surface water, which largely increases the arrival time of emergency services at the scene. The bad conditions of the roads often also impede waste delivery and public transport. To maintain cost-effectiveness, the vis major Board, coordinated by the Government Agency, highly encouraged local councils to self-sufficiently implement their own water drainage system until 2019. Thereby, the number of emergency intervention forces and means to be dispatched to these settlements in order to carry out flood protection operations, as well as entailed vis major costs can be expected to decrease.

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