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## TRANSFORMATION OF FLOOD PROTECTION SYSTEM ACCORDING TO THE LEGISLATIVE CHANGES IN OUR COUNTRY

### *Absztrakt/Abstract*

*Hazánkban a jogi szabályozók változása magával hozta az árvízvédelem rendszerének részbeni átalakulását. Szervezeti elemek szűntek meg vagy alakultak át. Magyarországon az ár és belvízi védekezés erős hagyományokkal rendelkezik, mivel hazánk természeti, vízrajzi, földrajzi elhelyezkedése alapján a sajátos vízháztartási viszonyok ezt követelik. Napjainkban az árvíz elleni védelem rendszere kettős. Az állam áll helyt az állami védvonalakon, míg az egyéb védelmi létesítmények kezelését, működtetését az önkormányzatokra bízta. A cikk megírásának célja, hogy bemutassam, jelenleg hogyan épül fel a vizek pusztító hatása elleni védelem rendszere.*

*Because of the legal regulators changing the flood prevention system is partial transformed. Organizational elements came to an end or were transformed. In Hungary the flood-and inland water prevention have strong traditions, because the specific water balance relations due to the natural, hydrographical and geographical position of our homeland require it. Nowadays the system of flood prevention is dual. The state is responsible for the state protective line, while other protective establishments treated, operated by the local governments. The aim of writing this article was introducing how currently the flood-prevention system is built up against the destructive effect of the waters.*

**Kulcsszavak/Keywords:** *árvíz elleni védelem, vízkár elhárítási feladatok, árvízvédelem rendszere ~ flood control, water damage relief tasks, flood prevention's organization*

## INTRODUCTION

One of the largest challenges of today's Hungary is the complex water-managing bearing the risk of the climate changing in mind. To achieve this aim the flood and inland water defensive tasks have to be specified for the participant of the state. These tasks have to be executed inside the frameworks of the international contracts. In accordance with these contracts the unnecessary water has to be stored for a droughty period or if the flood endangers economic interest, material goods or maybe indirectly human life, it has to be diverted from the danger-zone. The formation of flood prevention system is not young in Hungary. Since the state foundation the flood prevention's development could be followed, although we can only speak a form organized by the state from the 19<sup>th</sup> century. In the period preceding this settlement or a smaller area solved the flood defence. [1] Our first written memories have already mentioned flood protection work of Csallóköz. The settlements started the early flood protection works with building of flood embankments and locking. Written memories from the 15<sup>th</sup> and 16<sup>th</sup> century refer to royal order that prescribed the flood protection works of a settlement or a region. [2] In the 17<sup>th</sup> century more orders deal with flood regulation of smaller-bigger rivers, as one part of the Rába, the Vág, or the part in Győr of the Danube. In this period regulators with similar character have already appeared along the Tisza. In this age the problem was that there wasn't a complex provision. In the 18<sup>th</sup> century local methods were used for defending against water destruction. Without complex regulations of big rivers in Hungary the efficiency of dike developed by public work stayed on a low level. The organized defensive and river regulation activities along our two big rivers only started in the beginning of the 19<sup>th</sup> century, when the first organized association forms established. Nowadays organizing the settlement's protection imposes serious tasks on the local governments beyond the state. Almost each of the settlements continues protection against the destructive effects of water. Today while the local government's duty system is continuously changing, it is not allowed to forget about the treatment of those problems which are caused by the flood and inland water. Emergency that can be bound to the damaging of water and which require direct intervention from the local government are observable more repeatedly.

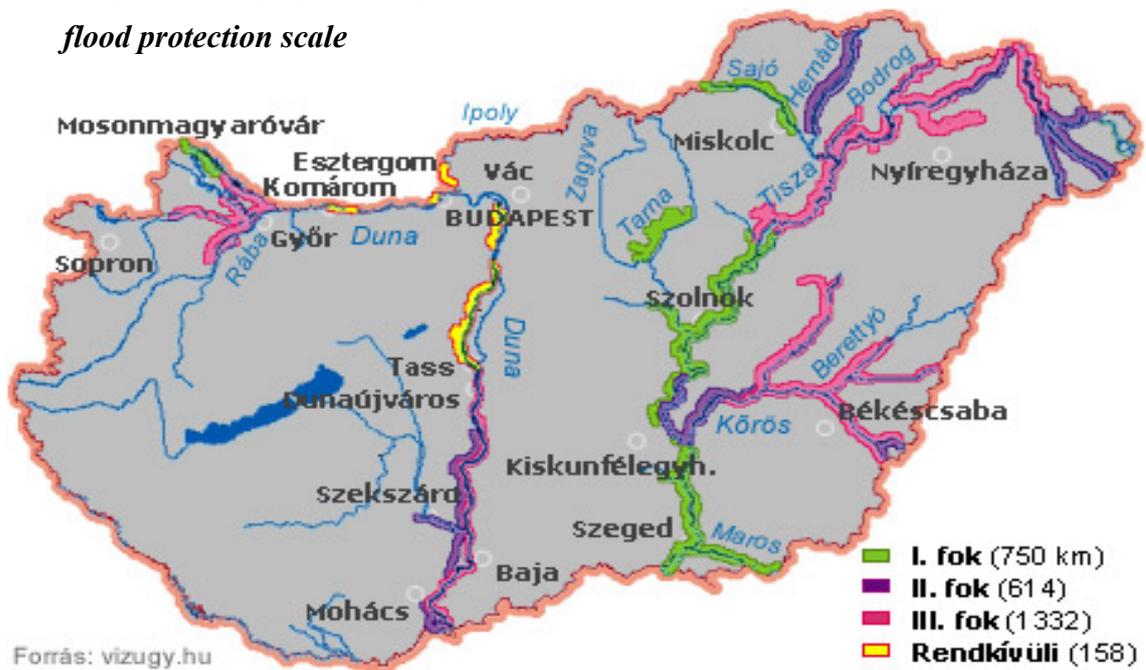
Increasingly more extraordinary case could be seen, which can be connected to the damages caused by water and which demand direct intervention from the government. [2]

## FLOOD RISKING IN HUNGARY

Examining the system of catastrophes and its taxonomic features, it could be verified that the emergencies caused by water can be found in all enumerations. The OIPC's academic world conference in Geneva in 1974 identified the categorisation of catastrophes. If we would like to define the protection against the damages caused by water based on this taxonomic approach, then we may bring the example the protection against flood and inland-water inside the natural disasters and the fresh water pollution inside the civilization disasters. We can continue the taxonomic approach, when the flood disasters we are grouped according to their extent and location. It will be from the local disaster – for example a sudden torrential a large amount rain caused of stream flooding – through in the regional or national problem, to the international disaster's classification, because for more than 90% of the surface water us come from abroad.

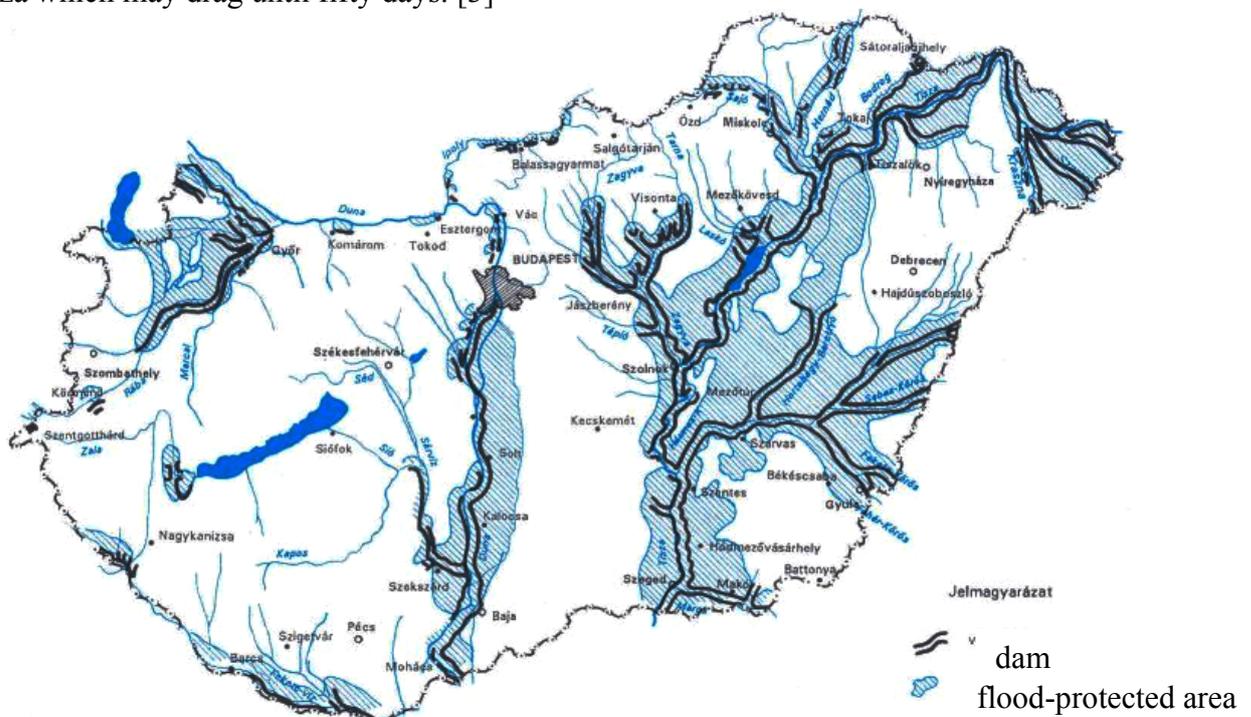
In case of grouping according effect strength and intensity we can also find flood example. The catastrophe with relative fast procession is not else as the earlier mentioned "flash flood", that is a sudden moisture with a pouring big quantity which cause danger with little brooks.

The next step in this classification leads through the medium and threshold disasters to the absolute catastrophe, when despite the planned activities can be prevented effectively defend against the flood. Perhaps a good example of this the 2001th's Tisza floods.



**1. figure.** Flood protection scale in spring of 2006

The catastrophes caused by the flood, taking the time parameters can be fast, medium or slow procession. We can name the “flash flood” – lighting flood – in case of fast procession, while in case of a slow one we can mention protection activity along the Danube or the lower Tisza which may drag until fifty days. [3]



**2. figure.** Flood exemption in Hungary  
(Source: Dr. Halász László, Dr. Pellérdi Rezső, Dr. Földi László: Disaster management I. ZMNE e-jegyzet 2009.)

One of the index-numbers of the risking connected to the flood is the number of the population living on the endangered area, while the other one is the volume of the economic value and its importance in the insurance of the fundamental conditions of existence. In Hungary the 25% of the population live or work on endangered areas by the water. This number means 2,5 million people lives in 700 settlements. At the same time 32% of the railway lines, 15% of the public roads and 33% of the agricultural areas can be found on areas endangered by flood. [4]

A good example for risking by flood that the settlements which are endangered by the flood are classified to the I. and II. disaster management class according to the disaster management risk evaluation. According to this have to get ready for the settlements, to develop a starting supply and based on the number 62/2011. (XII.29) BM Order – which is about the rules for protection against disasters – to form the civil protection organisations and define the staff number. Than we can see it is important that the leaders of the settlements be aware of dangers occurring in the settlements, they can define its volume, and according to this to form the settlement's protective ability.

## **ADMINISTRATION OF FLOOD CONTROL IN HUNGARY**

Analysing the administration structure of flood control in the face of codification changes it is statable that flood control can still be determined as common task for the state and self-governments. Investigation of its legal background must be started with the Constitution itself. Article 53 of the Constitution of Hungary says that "...The government can declare a state of emergency in case of a natural disaster or industrial accident..." [5]. Connecting to this, the Act 128<sup>th</sup> from year 2011 about Disaster management declares the composition and tasks of organisations participating in control of disaster management. Based on this, the responsible for controlling disaster management in country level is the government or a governmental coordination body. On county level the metropolitan, county or local defence committee is responsible in its settlement for the coordination of the tasks and preparedness of the organisations taking part in disaster management. The director of the governmental agency, as the president of the metropolitan or county defence committee is responsible for the following tasks:

- He ensures the preparedness of the metropolitan and county level organisations involved in disaster management within his competence, and provides them tasks to complete their readiness.
- He ensures the participation of social and charitable organisations in preparation tasks.
- He guides the exercises organised by the metropolitan and county level defence committees for organs, organisations participating in disaster management and supervises their level of preparedness.
- He is responsible for preparation and execution of alert and information, maintains operation of equipment necessary for alert and information of the population and economic organisations.
- He places the reports about the preparedness of the involved defence organizations on the meetings' agendas of the metropolitan and county level defence committees.
- He specifies the tasks of the mayors' preparation in the annual working plan.
- Based on agreements with other counties and the capital he can initiate elaboration of lend-lease agreements.
- He has a right of understanding concerning proposals on the structure and strength of civil defence organisations, recommended by the responsible professional disaster management organ.

- He introduces the mayors' proposals within his competence about their settlements' disaster protection classification to the minister responsible for disaster management.
- He organises the cooperation among the Hungarian Defence Forces, the police and administrative organs, non-governmental and civil defence organisations and the National Tax and Customs Administration.
- He is responsible for forming territorial civil defence organisations based on civil defence obligation and for making of county (metropolitan) risk management plans.
- He is responsible for the maintenance and operability of command and control system.

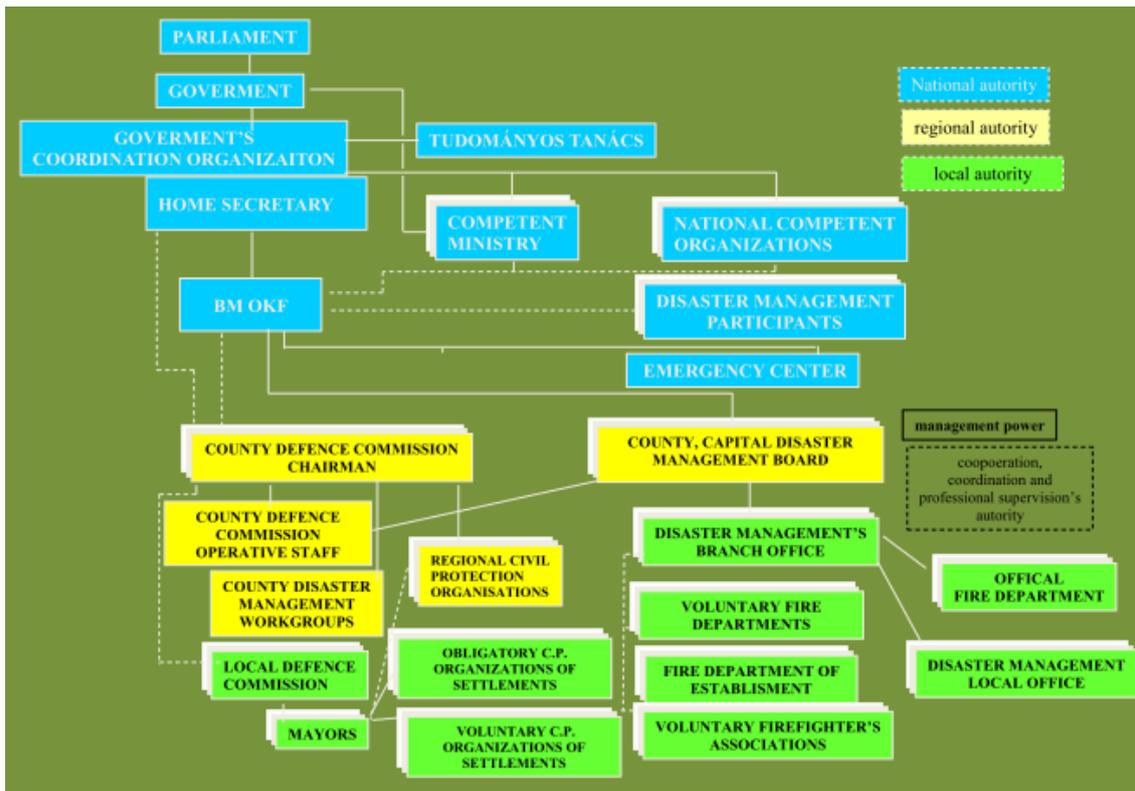
His tasks in defence management:

- He organises the fulfilment of the territorial defence tasks specified by the government.
- He commands the defence activities and initiates the measures belonging to the government.
- He can take the lead of defence activities based upon his own assessment or the involved mayor's report, if the defence task against the disaster goes beyond the capabilities of the local defence committee. In this case he informs the governmental coordination body immediately.
- If the matter allows of no delay, by locally conventional measures, ad interim he orders escaping of citizens from endangered areas necessary for saving lives and valuables, and immediately informs the government about this via the central body of professional disaster management organisation.
- He continuously evaluates the current situation, the status of defence activities, reports this to the ministerial commissioner and informs the governmental coordination body.
- Based on the minister's measures responsible for disaster management (or, if the matter allows of no delay, by his posterior information) he orders the deployment of civil defence organisations by simultaneous information of the central body of professional disaster management organisation.
- He harmonizes the translocation, escaping, reception and catering of citizens and valuables and the organisation of local defence. [6]

When a settlement's self-government is defending against a flood, on local level the leader is the mayor himself. He leads the local defence efforts with the skilled guidance of the professional disaster management organisation. Detailed description of his defence activity can be found in the above mentioned regulation. [7]

In case of defence against floods we have to investigate the act 57<sup>th</sup> from year 1995, which regulates husbandry of water resources. Based upon this, the National Directorate General for Water Management works under the supervision of the minister of interior and is responsible for the following tasks belong to the minister's authority:

- which are related to defence against harms of waters with special emphasize to the command of the National Engineering Management Headquarters;
- which are belonging to the country level command of directorates' hydrographical activities, to fulfil the inspectorship to provide unified hydrographical activities and to harmonise and develop hydrographical activities;
- which are connected to realization of central water management, tender or enhanced governmental developments with the finance of EU sources;
- or any other tasks based on regulations or minister's decisions.



**3. figure.** Defence management system of Hungary (source: own picture)

The National Directorate General for Water Management leads, coordinates and supervises the professional activities of directorates. Responsibilities of the 12 directorates to estimate of areal, territorial, regional and county level district development concepts and programmes and district development plans of counties and enhanced areas. [8] To perform its activities, it must cooperate with the local self-governments to fulfil tasks in husbandry of water resources and with the water associations as their professional supervisor. Due to its contribution activities he has to actively participate in his field of action in forming water management plans of catchment areas and performing action programs, fulfil domestic and international tasks especially that based on border-river agreements and in water related research, education, training and propagative activities.

Tasks of water management directories are to ensure synchronization of maintenance, operation, reconstruction and development of communal, governmental, local self governmental or private water installations, and to perform Program for Improving Drinking Water Quality. During their activities, they maintain, operate and develop hydrographical and hydrospace monitoring systems collect and evaluate hydrographical data and provide them to the Water Management Information System. They maintain and operate governmental water installations, ensure them reconstruction and development, and perform control, riverbed maintenance, coast-defence, prevention of environmental damages and pollution clean-up of governmental water resources [9].

Operative Area of Water  
Management Directory  
and region's border



**4. figure.** Areas of responsibility of water

(source: <http://www.vizugy.hu/index.php?module=content&programelemid=75>,  
download: 23rd May, 2012.)

## CONCLUSIONS

The Hungarian law changes sphere of authority and organisation structure of quiet a few organisations concerned in flood defence. There are organisations which came to an end, as the Water Management and Environment Protection Central Directorate, its tasks was taken over by the National Water Management Central Administration and the National Environment Case Institute. Other institutes lost their partial self-reliance for example the professional municipal fire departments, their place was found in the organizational structure of branch offices of catastrophe management. In the interest of the success of the state the presidential function of the country defence commission was given to the government office's leader, while the professional work guaranteed by the branch offices in the defensive commission in danger period received more emphasis. On those settlements where state defence is not going on, the mayor performs the protection leader tasks. The change of rules did not leave this area untouched. The competence of the branch office leader of catastrophe management was growing in the period of the danger situation, has a direct effect on the execution of settlement flood defence also. It is typical of flood defence on a manner, where from among settlements belonging to the branch office's scopes of operation in a time simultaneously quite a few people the branch office's substance has to be valid, there will not be an easy task. It did not happen nothing serious, affecting the country's considerable areas defence since 'new' law coming into force, so we may not know, how the new strategy will set an examination in practice. The article did not affect those organizational elements that in cooperation appear in the flood defence. Serious organizational changes happened on this area naturally. Worthy to mention the volunteers' participation however, who can make activity as a voluntary civil defence organisation. This is one of the proceeds of the 2012 law changes. While earlier the disaster management's system knew only one civil defence organisation, it changed for today that near the obligatory civil defence appeared the voluntary civil defence. Hopefully these organisations will support the mayor's work during the government's defence.

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