

## THE EXPERIENCE OF THE FLOOD IN VÁC IN 2013

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In the summer of 2013 a never experienced flood reached our country, Hungary. The water measures showed never measured levels of the river. The protection works needed very much effort and organization higher than any time ever in the danger areas. The government declared emergency situation. The citizens of the country joined forces and worked together on the dikes, at the offices and the organs enforcement cooperated as well. The new structure of the enforcement management had a challenge. The Directors of the local enforcement committee and their deputies controlled the protection work in cooperation with the local Majors in the different districts. The officers of the Disaster Management helped the protection work in every settlement with knowledge and organization. Cooperation, partnership and helpfulness were excellent.

2013 nyarán eddig soha nem tapasztalt árhullám érte el hazánkat, Magyarországot. A vízmércék eddig nem mért értékeket mutattak. A védekezési munkálatok minden eddiginél nagyobb erőfeszítést és szervezést igényeltek a veszélyeztetett területen. A Kormány veszélyhelyzetet hirdetett. Az ország összefogott, az összefogás megvalósult a gátakon, a munkálatok során, megvalósult a hivatalokban, rendvédelmi szervek között szintén. A védelmi igazgatás új struktúrája is vizsgázott, a Helyi Védelmi Bizottságok elnökei, elnökhelyettesei az érintett járásokban szervezték, irányították a védekezési munkákat, karöltve a települések polgármestereivel. A Katasztrófavédelem hivatásos tisztjei minden érintett településen szaktudással, szervezéssel segítette a munkát. A partnerség, segítőkészség, összefogás példásra vizsgázott.

## I. INTRODUCTION

Floods have caused a lot of problem for people and communities for centuries. The sudden floods of rivers were always in our lives. There are three causes of flood protection: passive, active and preventive<sup>1</sup> states. Passive protection means that values are reduced on the danger areas. Active protection is dealing with the water damage. Prevention is a complex task, from the forecast to control of rivers. In Hungary approximately 10,179,046 sandbags were used for protection during the flood of 2013. These sandbags were filled with 242,500 cubic metres of sand. There were 36,780 civil volunteers working on the dikes after registration. (There were more people working without registration) There were 206,000 people who were endangered by the flood and 1,570 people were evacuated from the danger zones.<sup>2</sup> In our country floods mean danger on any rivers in any time of the year. (Hydrological danger)<sup>3</sup>

The aim of my essay is to introduce my experience and conclusions reached during the flood of 2013 in Vác. During the flood I worked as the captain of the fire brigade of Vác, and as the deputy director of the Local Defence Committee of Vác district I personally could lead the protection work in Vác. As a member of the local operative body, I overlooked the activities in connection with the flood, coordination of work and until the end of the renovation work in the danger zone on

<sup>1</sup> Nagy László, dr. Szilávik Lajos: Árvízvédekezés a gyakorlatban Bp. 2004, ISBN 9635523815

<sup>2</sup> [http://hu.wikipedia.org/wiki/2013-as\\_k%C3%B6z%C3%A9p-eur%C3%B3pai\\_%C3%A1rad%C3%A1sok](http://hu.wikipedia.org/wiki/2013-as_k%C3%B6z%C3%A9p-eur%C3%B3pai_%C3%A1rad%C3%A1sok) (2014. április 5.)

<sup>3</sup> Mógör Judit: Katasztrófavédelem, 39-59. old. Bp. 2009. kiadó: Complex, ISBN:978 963 295 019 8

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the left side of the Danube (settlements: Szob, Zebegény, Nagymaros, Kismaros, Verőce, Sződliget, Vác, Göd, Dunakeszi).

In the summer of 2013 according to the forecasts it was expected that the flood would be higher than ever.

	Nagymaros	Vác	Budapest
I. Fok	520	550	645
II. Fok	620	650	700
III. Fok	670	700	800
LNV <sup>4</sup>	751	<b>804</b>	891

Water level of the Danube in June 2013 when it reached its highest point<sup>5</sup>

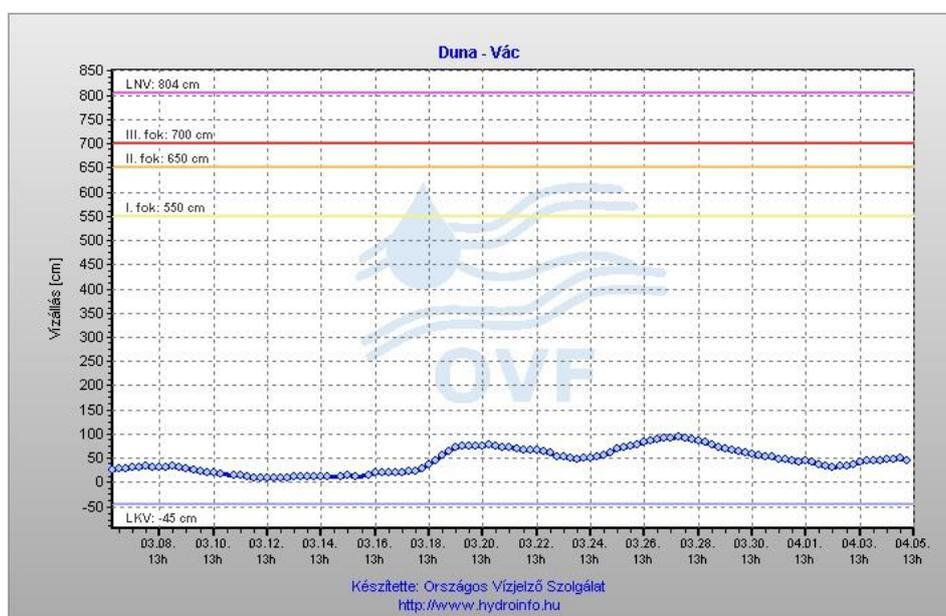


Fig. 1.: The water level was 45 cm on 5 April 2014 for example<sup>6</sup>

During the preparatory period before the flood the following necessary steps were taken on the left side of the River Danube<sup>7</sup>: Zsolt Ceglédi, Firefighter Lt-Col. and Károly Ürmösi, Firefighter Maj. inspected the danger area and informed the local mayors about expected level of the flood in the following settlements: Szob, Zebegény, Nagymaros, Kismaros, Verőce, Vác, Sződliget in the morning on 3 June 2013.

They took account of the situation and the equipment of the settlements and called their attention to the expected tasks and the necessity of preparation.

<sup>5</sup> The highest level ever measured

<sup>4</sup> <http://www.hydroinfo.hu/> (2014. április 5.)

<sup>6</sup> Fig. 1: [http://www.hydroinfo.hu/Html/hidinfo/hidinfo\\_graf\\_duna.html](http://www.hydroinfo.hu/Html/hidinfo/hidinfo_graf_duna.html) (2014. április 5.)

<sup>7</sup> The River Danube is the second longest river in Europe (after Volga). It rises in the Black Forest in Germany. From the join of two streams called Brigach és a Breg at [Donaueschingen it flows about 2850 km into South-East to the Black Sea](#). Hungary is situated on the drainage area of the River Danube so it is an important element of the hydrography of Hungary. The length of the Danube is 417 km in Hungary.

(<http://hu.wikipedia.org/wiki/Duna> 2014. április 5.)

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The municipalities set up an operative committee and took the necessary measures on the left side of the River Danube during the preparation period. The personal contact is extremely useful and it is an important element of the defensive work. Information is not only a data but it becomes essential by personal contacts. Due to previous information and proper warnings the settlements on the left side of the Danube gained time to prepare for the flood in advance.

In accordance with the instructions the dykes were pointed out and the routes were determined with using up the starting supplies on 4 June. In Vác an operative committee was set up with the leadership of Tamás Németh, Firefighter Col. During this time the necessary sandbags (210,000 pieces) were handed over for the following settlements: Nagymaros, Sződliget, Vác, Szob, Kismaros, Zebegény, Göd, Dunakeszi. The work was helped by 5 persons of the water management's experts under the direction of Zoltán Kálmándi (who was the liaison of the Vác district). The water management experts determined the height and the size of the dykes precisely that is why during the building the dykes were neither too short nor too high. Due to their expertise and hard work the people involved in the protection work were given accurate figures and information on the water level, the situation of the dykes and the necessary fortifications.

## II. PROTECTION WORK IN VÁC

In the beginning the Mayor of Vác lead the work in the town. There was a discussion of coordination attended by the Mayor of Vác, the Fire Chief, Police Superintendent, senior engineer and the appointed leaders of the flood protecting sections at 8 o'clock every day.

On the basis of the experience during last years it was decided that the forces and direction must be shared so that the protection work can be more efficient in the town. The protection work took place in three sites:

- Diadal Square
- Hegyes Tower
- Kisvác

*Diadal Square:* There was 1 water management expert, 50 volunteers, 5 firefighters working there. There were 20,000 pieces of sandbags, from which 10,000 bags were built in the dyke, and there were 30,000 empty bags.

*Hegyes Tower:* There were 15 firefighters, 11 prisoners and 250-300 volunteers

*Kisvác:* on the prison premises the prisoners filled the bags with sand continuously. There were 19 further prisoners, 3 policemen and other volunteers working.<sup>8</sup>

During the protection work sandbags were supplied continuously and full bags were always available. Special thank to the staff of the prison and prisoners, who took part in the work of defence.

Sandbags, supplies and other equipment were stored in the fire station and empty bags were transported to the danger zones from it. The operative committee (Tamás Németh, Col. and Károly Ürmösi, Maj.) checked the condition of the dykes every evening between Szob and Sződliget.

It is important to mention the fact that people who are public employees also helped the work from those regions which are not in danger. It meant higher number of workers mainly in Vác, because the district consists of 18 settlements from which 2 were protecting in the danger zone and the others helped them. The public employees helped the work every day in full force controlled by an appointed leader.

Measurements were taken in the beginning. The steps helped and accelerated protection work are as follows:

- Inhabitants were kept informed by posters, loudspeakers. There was residential forum and hearings during the flood. People in the danger zone could demand sand and sandbags free of charge with showing their address cards.
- Policemen were on every sites of danger and firemen checked the dykes in every three hours.

<sup>8</sup> Own note during the flood in June 2013

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- Parking of cars became free in the whole town and Széchenyi Street, Main Square was open to the traffic.
- Barabás Miklós Street was closed at 1:00 pm and Road 2 was closed between Vác and Sződliget.
- Caritas Association of Vác supplied free food to the workers of the protection work against flood.
- Accommodation was provided for those who took part in protecting work.
- Coordination of work was done by the leaders every day.

### III. CONCLUSIONS, EXPERIENCE



Fig 2: The legal and administrative environment of the protection management <sup>9</sup>

It can be stated that the sphere of authority of bodies taking part in protection against flood changed when the district structure was formed.

In those settlements where the local government had great practice and strong lobbies the work of leaders on district level seemed to be unnecessary. The settlements lying on the bank of the river have long experience in handling flood emergencies so was in Vác, where people have been working in excellent cooperation with local official bodies for a long time. That is why the district authorities' fulfilled duties did not prove to be effective.

It was good that due to the coordination on district level people (public employees, civils) from settlements without danger could be involved in the work of protection quickly and more efficiently. It was done because district authorities used their relationships and databases. However, it was difficult to implement official orders and procedures e.g. order of removal. For the future it would be worth formulating samples in law for the prompt situations.

It is proposed to determinate the exact scope of management duties in protection work.

<sup>9</sup> Fig.2: <http://444.hu/tag/a-2013-as-dunai-arviz/#-933>, 2014. április 5.  
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## EXPERTISE

Although the changes in the administrative structure placed governmental offices and authorities of districts into the system of protection, they have not got enough expertise in fulfilling actual duties. Even though there are members also from the body of disaster recovery in the local protective committees the prompt decisions are made by the experts of disaster recovery in actual situations. The local governments and other offices could rather contribute to the protecting work with duties of coordination, organization and supply. The compositions of protecting committees are not always in line with it.

## FLOW OF INFORMATION

The commitments of making progress report (in every four hour) during the practical work did not prove reasonable as there was nothing significant after the reinforcement of the dams. The offices at the district level got information from local governments and from bodies of the disaster recovery and sent it to the regional offices. Information sending order is not so well regulated in the settlements so collecting them depends on the person who is in charge with it.

The management of the expert bodies could also fulfil their duties to send information that is why there were more channels of information parallel towards the higher offices.

According to practical experience this system of offices collected the data but did not often send back any information, so it was one-way. This information system is immovable because of the computer but it could be suitable to exchange information quickly and to distribute supply. It would be useful if all the people who take part in the flood protection get easy access to the system.

## THE ROLE OF INFORMATION

The government offices in the districts have the duty of organization, coordination and information during the management of protection. These tasks can be done on an average standard but this part needs significant development because of the not accurately determined scope of duties. It would be possible to establish an information channel for publicizing official statements, press conferences, but it would be against the interest of the settlements. They need their own appearance and campaign.

## CIVIL COOPERATION

Civil forces attitude to the situation and their participation in protection work was quick, enthusiastic and high standard. It was true on the dykes and in the background where people organized logistics, supplied with food and accommodated workers. It can be stated that the cooperation was exemplary.

*Keywords: flood, disaster protection, local defence committee, cooperation*

*Kulcsszavak: árvíz, katasztrófavédelem, Helyi védelmi bizottság, összefogás*

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