

# HUMAN RESOURCES IN THE MANAGEMENT OF FLOOD SITUATION IN THE SLOVAK REPUBLIC

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## Abstract

*The flood situation are now the most common crisis phenomena of the natural character of Slovakia. Although they have often local, respectively regional character, it is very difficult to prevent them. Therefore, floods it is necessary floods to predict and then well to prepare for them. Complex solution of the flood protection in Slovakia is ensured mainly by the creation of strategic and program documents, crisis plans, territorial plans, systems of tie-in legislative, system of managing authorities of the state administration, The article deals with human resources that can be used in the management of flood situations. Their use is clearly regulated by the legislation of the Slovak Republic particular in the field of crisis management, but ordinary citizens, and even officials often not well known. Therefore we serve the comprehensive review and seek to achieve a clear allocation of responsibilities of public authorities in that human resources management. End of article summarizes the direct effect of human resources in food situations.*

## Key words

*human resources, management, flood, crisis situation, crisis management, public administration*

**JEL Classification:** H12, H84, Q54

## 1. Introduction

Flood situations belong to the frequent natural events in the country. From the country functioning point of view, these events do not have only negative impacts. Moreover, regular floods are the precondition for the existence of some ecosystems, for example the ecosystem of alluvial forest. Water and its strength also have an effect of significant land-shaping and land-forming agent. It creates riverbeds, forms valleys, gaps, meadows, terraces. The overflow of some massive rivers of the world brings life to the surrounding steppe, or desert environment. However, the human perceives the floods as something stressful. It endangers his life, property and destroys created values. When floods appear, they are immediately perceived as the crisis situations.

In Slovakia, flood-protection precautions were first recorded in 15<sup>th</sup> century, although during this period they had the form of only uncoordinated building of barriers. Building of protection lines on so-called "Žitný ostrov" in 15<sup>th</sup> century belonged to the first works of this kind within the area of former Hungary. Active flood protection in Slovakia was gradually built since 19<sup>th</sup> century, while its foundations were established already in 18<sup>th</sup> century (Horváthová, 2003, p. 38).

The crisis situations caused by the natural agents cannot be forecasted with sufficient advance. We need to be prepared in advance for their course and control. Significant part of the crisis management is planning

and subsequently also the control of the crisis progress itself. In both parts is applied the use of human resources. The paper focuses on their use mainly by the flood course. The problem is supported mainly by the effective legislative of Slovak Republic. By its analysis, we can complexly understand the need to apply and use the human resources in the case of flood conditions and situations. Significant precondition of an effective crisis management is the cooperation and communication on the vertical, but also horizontal levels. In relation to it, inseparable is also the need for involving the responsible and informed persons. Another aspect is the ability of prompt acting of all involved persons, not only managing units.

By the elaboration of submitted issue, we have used the methods of the analysis, purpose synthesis and the interpretation.

## 2. Objectives and methodology of the paper

The objective of the paper was to create the integrated overview of human resources participating on the flood crisis situations. Their use is expressly stated in the legislative of SR, mainly from the field of the crisis management. By the elaboration and processing of submitted issue, we have used the methods of analysis, purpose synthesis and the interpretation of achieved results.

The methodological procedure was based on the analysis of human resources in the flood situations arising from the state administration authorities' structure and the self-administration units performing the flood-protection activities, and also organizations directly involved into the preparation and realization of flood-protection plans and precautions. The analyses were performed in relations to the basic effective legislative from the field of the crisis management of Slovak Republic.

On the basis of this structure, we have created the overview of human resources operating in the given structure, as well as the overview of main activities performed by authorities and organizations regarding the flood-protection. Further, we have focused on the analysis of basic requirements on the employees' quality, as well as their certain and specific position.

In the synthetic part, we have created the structure of authorities and organizations according to their position and tasks within the system of the flood protection. The synthesis of the information was a basic precondition on the quality of human resources by the solution of flood crisis situations. Our main findings within submitted issue arose from the synthetic part of this paper.

### 3. Problem analysis

According to the Flood Protection Act of the NC SR No. 7/2010, as amended, the Flood is the natural event, by which water temporarily inundates the area, which is usually not flooded by water. Further, flood protection means activities focused on the decrease of the flood risk on flood-endangered area, on avoiding the floods caused by flooding and on the decrease of negative impacts and consequences of the floods on human's health, the environment, cultural heritage and economic activities.

Complex solution of the flood protection in Slovakia is ensured mainly by the creation of strategic and program documents, crisis plans, territorial plans, systems of tie-in legislative, system of managing authorities of the state administration, and finally the creation of practical precautions focused on the care of the country, and precautions of the technical character (Repka, Ubrežiová, 2002, p. 9).

To the most important documents in Slovakia related to the flood protection belong:

- Water-management Policy Conception until 2015
- Flood-protection Strategy until 2020
- Anti-Erosion Precautions Program for the increase of the retention ability of partial floods
- Area plans on all planning levels
- International programs and agreements

- Flood management plans
- Water plan as the strategic document of the water planning for the area of the Danube river basin and for the area of the Vistula river basin
- Flood plan of support works and rescue works
- Flood-risks management plans

The flood protection in Slovakia is performed by:

a) flood protection authorities, which are according to the § 22 sec. 1 of the Act No. 7/2010 Coll., as amended:

- Ministry of the Environment of SR,
  - district offices,
- b) other authorities of the state administration,
- c) territorial self-administration authorities,
- d) flood committees,
- e) the administrator of water-management significant watercourses, and administrators of small watercourses,
- f) owners, administrators and users of areas, buildings, objects or facilities located on the watercourse or the inundation area,
- g) other persons.

§22 sec. 2 of above mentioned Act determines: The flood protection is controlled and supported also by municipalities. The significant part of the flood-protection system in Slovakia is the monitoring of the condition, amount, quality and quantity of water, which ensures the Slovak Hydro-Meteorological Office (SHMÚ). The part of the Flood-Protection Program in Slovakia is the creation of the Flood Warning and Forecasting System (POVAPSYS), of which task is to decrease possible damages caused by the floods by means of the hydrological forecasts, warnings and cautions.

Slovak Republic is the area with significant relief segmentation. Also other characteristics of the area are the conditions for the fact that significant amount of precipitation, which falls by us in the form of rain, flows out of our area (Matulík, 2013). By this fact, there is determined one of the basic tasks of the water-management, which is the retention of water during the period of its surplus, and the effective allocation in the period of its deficiency. Floods as geopolitical factors causing the government expenditure growth (Kútik, Klierová, Hošták, 2014 p. 441) However, as stated by Bačík and Ryšavá (2011, p.1), the flood protection is the all-society task, which is related to all of us, from individuals, through municipalities, to the government, and in any way it cannot be narrowed only to the obligations of a small group of state authorities and organizations.

From the point of view of the use and the involvement of the human resources into the flood situations solutions, as the most significant seems to be the Flood-Protection Act of the NC SR No. 7/2010,

as amended, and the State Control in Crisis Situations except the war period and war condition Act No. 387/2002 Coll., as amended. From the European legislative, we can apply mainly the Regulation of the European Parliament and the Council 2007/60/ES on the Assessment and Management of Flood Risks. The regulation was transported into our legislative by above mentioned Act No. 7/2010.

In the document Floods Risks Management - prevention, protection and mitigation (2004), the cycle of floods risks management includes:

1. The prevention based on the consideration of flood risks in the area planning, and in the building works on safe locations, in the suitable use of the land, rational management in the woods and on the agricultural land;
2. The preparation, realization, maintenance and repairs of preventive, technical and non-technical precautions for the protection of areas against the floods in the country, urbanized locations and watercourses;
3. The organizational, methodical, technical and personal preparedness of watercourses' administrators and units of the integrated rescue system for the execution of interventions during the period of floods and their risk;
4. Effective reaction on the flood situation conditioned by continuous monitoring of the meteorological and hydrological situation, issuing of meteorological and hydrological forecasts and timely warnings on the flood dangers, performance of the intervention in the form of flood-protection supporting and flood-rescue works, and other precautions for the protection of human's health, the environment, cultural heritage and the economic activities against the floods.

The elimination of floods' consequences and learning from its course by the restoration of conditions for the normal life in by-floods-influenced areas, by the moderation of social and economical impact of the floods on affected population, by the analyzing of causes, the course and consequences of the floods, by the analysis of the effectiveness of preventive precautions and precautions made during the period of floods, by the updating the flood risks management plans and flood plans.

Precautions for the flood protection are divided by the Flood Protection Act of the NC SR No. 7/2010 Coll., as following:

1. Preventive precautions for the protection against floods,

2. Precautions during the period of the flood situation,
3. Precautions after the flood.

#### 4. Human resources analysis in flood situations

From the human resources point of view, public administration authorities and institutions directly involved in the course of the floods can be divided into:

1. Managing units – central state administration authorities and their personal support, other state administration authorities and their personal support, self-administration authorities and their personal support, and personal support by them established boards and units;
2. Executive units – the administrator of water-management significant watercourses and their personal support, integrated rescue system and its personal support, personal support of the fire brigade, health rescue service, police, civil protection units, army, coordination center of integrated rescue system, regional road administration and the Slovak Hydro-Meteorological Office (SHMÚ).

Naturally, also within particular authorities, institutions and organizations, there is a division on the managing and executive units given by their organizational structure.

From the point of view of the flood management support by the human resources, to the executive units belong also normal and legal persons obliged to participate on the flood-protection support works and to provide personal help and means for the protection of the health, property, environment, cultural heritage and the economic activity according to the Flood Protection Act of the NC SR No. 7/2010 Coll.

Managing (control) units are in great extent applied within the preventive activities, mainly by the preparation of plans, concepts and strategic documents.

On the level of the state administration central authority (the Ministry), it is mainly the creation of the water plan, plans of the river basins management, confirmation of the flood plans and ensuring of the flood risk maps elaboration. For the personal support of the state administration central authority is important the professional preparedness of the employees. In the field of the flood protection, the Ministry fulfills the tasks arising from the membership of Slovakia in the European Union in the assessment and management of the flood risks. Moreover, the Ministry, as the managing authority,

ensures through its employees the methodical directing and professional preparation of the flood-protection authorities, organizing the announcement flood service and the service of warning the population.

District offices in the residence of the region, and district offices within the preventive activities create also the flood plans, and perform the flood inspections on the watercourses. By this, there are given high claims and demands on their personal support and professional preparation of the employees. Above mentioned offices also ensure the workforces and means for the flood protection. District offices organize trainings on execution of the announcement flood service and warning the population, on execution of flood rescue works for the employees of the district offices and municipalities. On this management level, we can encounter the horizontal involvement of the executive units, mainly in the area of the cooperation with the administrator of water-management significant watercourses, the administrator of small watercourses, fire brigade and health rescue service.

In relation to the preventive activities, the municipality elaborates the flood plan of supporting and rescue works, executes the flood inspections, cooperates with the administrator of the watercourse flowing through the municipality area, and ensures the workforce and means for the flood protection.

During the period of the floods, within precautions, managing units fulfill their coordination tasks. District offices in the residence of the region, district offices and municipalities announce and retract the emergency situation on their area. They have the information and communication obligations, which puts the focus on the responsibility and prompt decision-making of the managing persons. Moreover, they ensure the activity of flood committees, providing or requiring the help, execution of the announcement flood service and others. On the horizontal structure, they cooperate with the units of the integrated rescue system, fire brigade and the health rescue service. The municipality establishes the patrol service, and supervises the performance of the flood protection precautions according to the rescue works plan.

After the floods, the tasks of the managing authorities are focused on the creation of reports about the causes and the course of the floods, executed technical precautions, costs on the execution of the flood rescue works. District offices in the residence of the region and district offices nominate the verification committees for the verification of the flood damages summarization correctness and determine the inundation areas.

To the executive units within the flood protection belong also units of integrated rescue system (IZS). The operation of the IZS is legislatively given by the Integrated Rescue System Act No. 129/2002 Coll., as amended. From the human resources in the IZS point of view, the important aspect is the training and professional preparation of the rescue units employees. It is a permanent process, which does not end by the reception of the employees and their occupational assignment. On the contrary, by this step, the employee enters to the system of the permanent preparation and training, of which aim is to achieve the required level of the employees' preparedness (Šimák, 2015, p.139). The part of the training is also the periodical check of the knowledge, professional skills and the physical preparedness.

Individual executive units are the administrators of the watercourses, who fulfill their important tasks within the preventive precautions in the period of the flood situations, as well as after the floods. Their professional activity focuses on the assessment of the flood risk, searching for the optimal technical solutions, announcement of the degrees of the flood activity on the watercourses, and the professional cooperation with the managing units (Ministry, district offices in the residence of the region, district offices, and municipalities). The administrators of the watercourses ensure the maintenance of the watercourses, elimination of the obstacles and buildings on the watercourses, realization of the technical precautions by means of the subjects of the water-management construction. Their employees have to possess a professional knowledge from various economic areas and also from the area of the crisis management.

According to Šimák (2015, p. 136), employees operating in the offices, organizations, executive units fulfilling the tasks by the solution of the crisis situations, can work as:

- Professional employees – within organizations operating in the system of the crisis management, or within the organizations, which can be purposely sent to fulfill concrete technical tasks by the liquidation of the crisis situations (construction, transport, or other enterprises)
- Voluntary workers

It is worth to note that significant part of the workers working in the executive units of the crisis management have the character of state employees (policemen, firefighters, soldiers). Regarding to their operation, there apply individual legislative norms. The persons in the crisis management in the area of the flood protection have to fulfill the tasks with high level of professionalism, from the demanding ones requiring the university education, up to the simple

manual works requiring mainly the physical force and manual skills.

In the area of the flood management are used also precautions of the economic mobilization, mainly in the case that in the area of SR is announced the emergency state (Novák, 2010, p. 127). The laws related to the system of the economic mobilization are given by the Economic Mobilization Act of the NC SR No. 179/2011 Coll., as amended. From this field is applied mainly the work obligation, which is possible

to order to the workers of the economic mobilization subjects.

### 5. Findings

On the basis of above introduced analysis of human resources in the flood situations, we have created the synthetic information on the operation of human resources in the flood situations.

**Table 1 Public administration authorities and organizations of the flood situations crisis management**

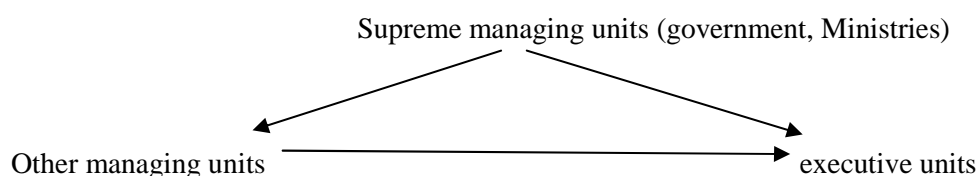
Crisis flood management	
MANAGING UNIT	EXECUTIVE UNIT
government and by it established central flood committee	
state administration central authorities (Ministries and by them created crisis teams and operation groups)	administrator of significant watercourses
District offices in the residence of the region and by them created crisis teams and flood committees	administrators of watercourses, regional police headquarters, regional headquarters of fire brigade and rescue service, IZS units
District offices and by them created crisis teams and flood committees	administrators of watercourses, district police headquarters, district headquarters of fire brigade and rescue service, IZS units
Municipalities and by them created crisis teams and flood committees	administrators of watercourses, municipal and city police, voluntary firefighting units and fire brigades, first aid medical service

Source: Author's work

Above introduced table displays the public administration authorities and organizations operating in the flood situations crisis management. The table expressly shows also their hierarchical organization.

In the crisis management applies the centralization principle and the principle of mutually linked cooperation, which is functional not only on the vertical axis, but also on horizontal axis (Figure).

**Fig. 1 Units operating in the flood situations management**



Source: Author's work

Human resources are applied mainly within the structure of flood crisis management introduced in the table, but also within other supporting systems of crisis situations management, such as the population civil protection system and the system of economic mobilization. The complexity and severity of the crisis management issue, and floods as well, determined the claims on the professional preparedness and responsibility of the workers. Managing units' workers need to have a high level of responsibility, managing and coordination skills. Executive units and their workers should have the ability to act in time, with necessary authority and skills. Both units should have necessary competencies for the execution of their obligations.

Planning of the use of human resources in flood situations should presuppose the sufficient capacity of persons, their technical focus, experience, physical strength and skills. During the crisis situations solving, it is necessary to divide human resources according to their priority tasks. The allocation of human resources can be planned and realized also between the competent institutions.

In general, the transfer of information and communication are significant part of the management. In the case of crisis situations, their significance sharply increases. The cardinal precondition for the effective communication between the units and the parts of the crisis management is the creation of communication plans. Problems with

communication between main stakeholders in flood risk management are discussed in a paper of Thaler T.A. Priest, S.J., Fuchs, S. (2016, p. 849 – 851).

Another important part is a simple access of workers to the information. Only relevant and objective information available in the suitable structure enable a prompt and effective communication among workers in the units of the crisis management.

## Conclusion

Crisis situations of the natural character, such as floods, accompany the mankind within living memory. Despite even nowadays we cannot prevent them, we can prepare for them, and in this way we can eliminate also their devastating consequences. Flood situations management is the part of the state crisis management, within which there is the structure of public administration authorities, which ensure the preparation on the flood situations and the flood course management itself. The system of the flood management by the public administration authorities is supported by organizations and units, which actively perform the flood-protection activities of various characters and kinds. Within these systems work real persons, on which are put high professional and character requirements and demands. In the case of executive units, these requirements are supplemented by their physical strength, fitness or skills. The fulfillment of introduced requirements is related to the continuous professional or physical preparation of the workers. The part of them has the position of the state employees, the second part is

employed within organizations and the final part operates as the voluntary workers. Their different position and tasks have to meet in the case of the solution of crisis flood situations, and should result into the effective cooperation with the objective to prevent, or minimize the threat on lives, health and the property of inhabitants, the environment and the cultural values.

Submitted paper dealt with the human resources, which can be used by the management of flood situations. Their use is expressly stated in the legislative of SR, mainly from the field of the crisis management. In the functioning of Slovak Republic, floods are the exceptional situations, but in the cases that their extent exceeds the area of one self-administration region, they can be solved in accordance to the announced emergency or exceptional state. In such case, on their management participates the system of economic mobilization, which significantly increases the numbers of human resources involved in the solution of the flood situations.

In the end, we can say that the floods and their solution is really the all-society task. This fact is supported also by continuous climatic changes in the area of Slovak Republic. Although we can say that the preparation to these events is sufficient from the state administration managing authorities and the executive units of the crisis management, questionable remains the preparation and informing the public. This problem should be theoretically better elaborated and implemented into the practice. It is clearly the subject for further scientific works and studies.

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