Flood Services legislative approach in the context of Danube Delta area flood risk management– FLOOD-serv Project

Daniela Petroschi, Iuliana Nichersu, Iulian Nichersu

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ABSTRACT

In 2016, after a week of heavy rains in Europe, at least 18 people died in floods, turning this natural phenomenon into a major concern in terms of economic, social and human right. In the future it is expected that losses in Europe will increase on average about 5 times to the present, in accordance with the risk analysis carried out by different organizations across the continent. It is expected that the proper implementation of the two major directives in water and flood management will prevent the estimated cost of displacing about half a million people about 15 billion euro, 2030, unless further action is taken. Under these estimations, the implementation and further development of Floods Directive and Water Framework Directive seem even more crucial

FLOOD=serv research project set as one of the objectives of WP2 describing and comparing the characteristics and specifications of flood risk management public services in different European countries and especially in the selected regions, focusing on the governance structure at and between different levels (institutional capacity), the strategic use of ICT, the level of participation among stakeholders and the public , the way transparency tools bring benefits to different sections of the population and establishing practices to challenge emerging inequalities.

The purpose of the legislative study is to present an analysis of the legal framework, regulation and organization of flood risk management, contingency planning and response functions in the selected regions. It was documented by parallel descriptions of how the provisions of the European Directives are transposed into the national legislations of selected areas participating in the FLOOD-serv project and it provides key country characteristics and differences of the governance structure of the flood risk management, which are crucial elements for the effectiveness of the societal risk reduction.

FLOOD-serv

www.floodserv-project.eu

INTRODUCTION

The selected regions that are subject of the flood risk management analysis comprise of a wide range of climate characteristics, flood risks and operational approaches:

The Municipality of Genova (GENOA, Italy) the biggest city in the Liguria Region and , characterized by a narrow coastal zone with hills and steep mountains in the backcountry. Genova is the third city in the Northern Italy for number of population for a total of 607.000 inhabitants, which increases to 850.000 considering a wider metropolitan area.

The Council of Vila Nova de Famalicão (CMVNF, Portugal), belonging to the basin of the Ave is one of the districts severely affected by the occurrence of events such as flooding, especially during the winter months.

Tulcea - Danube Delta (IP TULCEA, Romania), the youngest geographical unit in Romania (the first embryo appeared 11,500 years ago) has the general tendency to be in a long lasting and continuous territorial extension. During the 20th century, the Danube Delta has suffered from human interventions that led to dramatic changes in some areas. Flooding is a normal event within the delta's annual cycle and floods normally occur between April aand June, when 33 % of the Danube's annual flow may pour into the delta.

Bilbao (BILBAO, Spain) located on the Eastern Atlantic seaboard, in the Spanish State, and stands 19 m above sea level, covering a surface area of 41.6 km2. In the history of Bilbao have always appeared as a recurring the floods..

Bratislava Self-Governing Region (BSK, Slovakia) is located in the south-western part of Slovakia and has an area of 2,053 km² and a population of 603,699 (2005). Major rivers in the region are the Morava River, the Danube and the Little Danube, the latter with the Danube encircling the Žitný ostrov in the south-east.

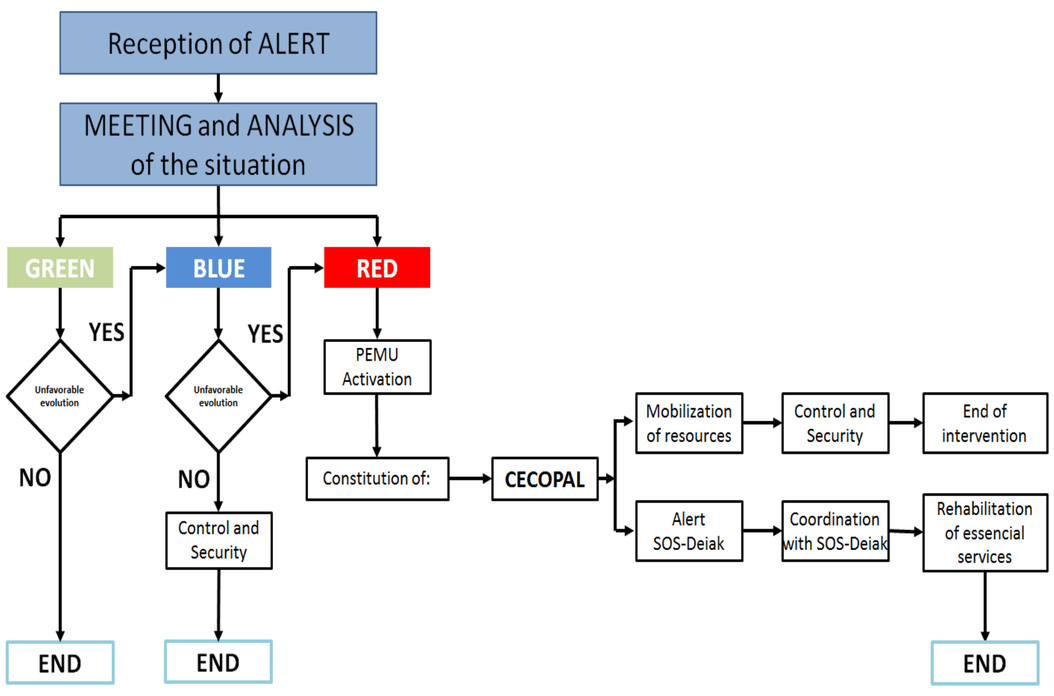

Figure 1. Synoptic structure of decision making process in flood management in BILBAO

Floods Directive three step procedure

The first step- Preliminary Flood Risk Assessment requires Member States to engage government structures, agencies and other bodies to draw up a Preliminary Flood Risk Assessment. This assessment has to consider impacts on human health and life, the environment, cultural heritage and economic activity, with a legislative completion date of December 2011.

The second step in implementing Flood Directive is the **risk assessment**. The information following the risk assessment that was used to identifying the areas at significant risk would then be modeled in order to produce **flood hazard and risk maps**. These maps will be updated by December 2019 and will include details and revaluations on the flood extent, depth and level for three risk scenarios (high, medium and low probability).

The third step in the implementation of the Flood Directive, is the preparation of the Flood Risk Management Plans, meant to indicate to policy makers and the public the nature of the risk and the measures proposed to manage these risks. The FRMP were to be completed by December 2015. The Floods Directive prescribes an active involvement of all interested stakeholders in the process. The management plans are to focus on prevention, protection and preparedness.

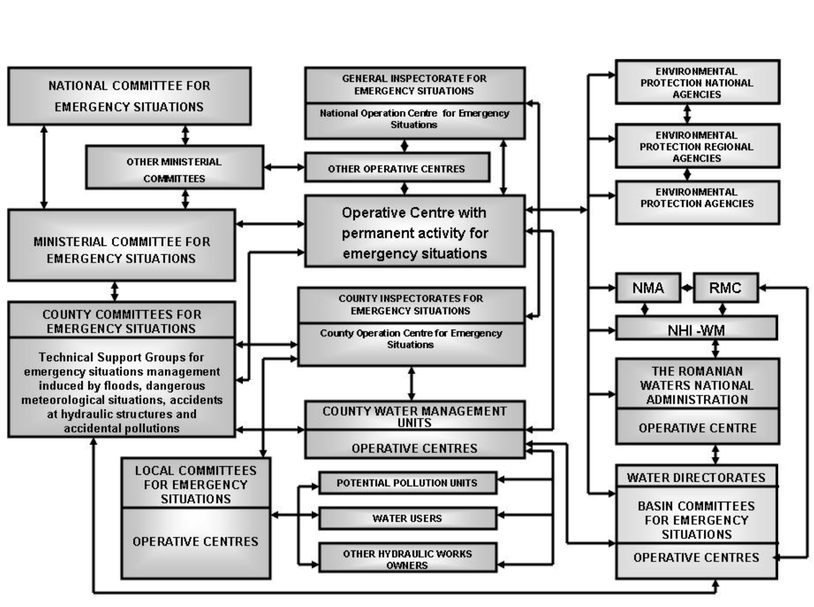

Figure 2. Synoptic structure of decision making process in flood management in DANUBE DELTA

Gaps and Needs

GENOVA- Lack of unitary methodology applied for different level s of flood risk and flood hazard maps- RBD, regional or national.

Vila Nova de Famalicao- Lack of explanation on how to use the maps.In Portugal, flood risk reduction is implemented across multiple stakeholders,namely central administration, local level, private sector, research institutions andONGs (main activities listed below), which has as negative effect the institutional fragmentation

Danube Delta- The affected population is only visible if the hazard map is zoomed in to at least the 1:200,000 scale,but is assessed for each settlement, and is represented by icons of one small-scale person,and one, two or three larger-scale persons, however there is no legend on the map indicatinghow many persons these icons represent in actual numbers.

BILBAO- Most of the Spanish portals have limited appeal and usefulness for potentially interested users (theycurrently focus more on the exchange with technicians from other administrative bodies thanProviding information to the interested public/individuals). This is mainly due to the functionalities/navigation.

BRATISLAVA- All floods are assessed in total i.e. there is no difference made on the maps between flood sources and flood mechanisms. The indication of consequences of floods on the status of water bodies are missing. Information about impacts on cultural heritage is scarce No information on areas vulnerable to floods with a high content of transported sediment and debris flows was provided

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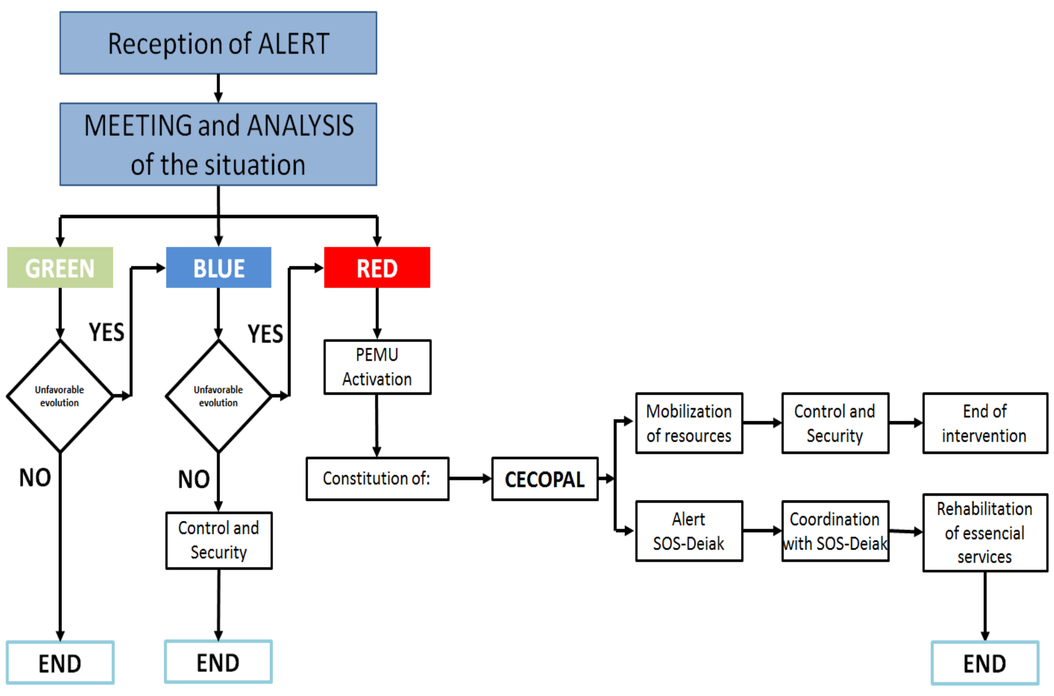

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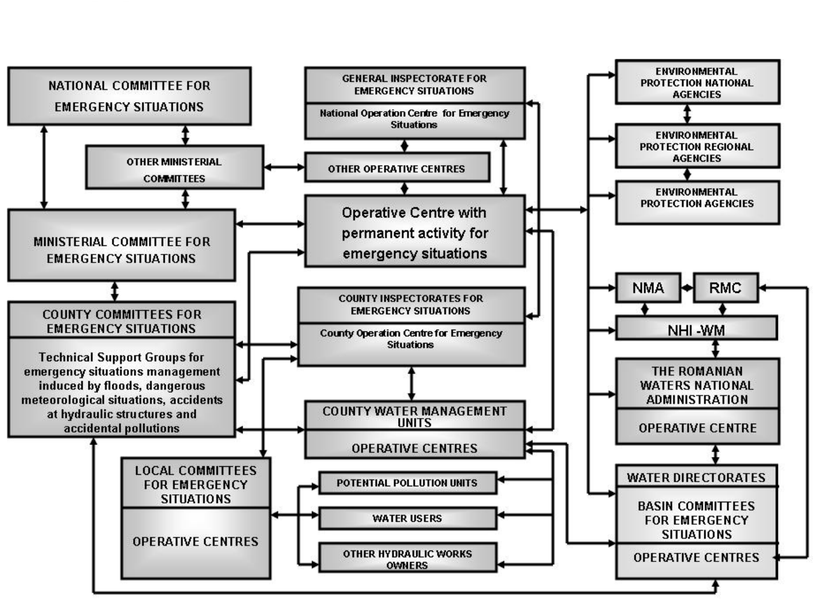

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