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# ANALYSIS OF THE REGIONAL AND MUNICIPAL DISASTER PROTECTION PLANS FOR THE PILOT CROSS-BORDER REGION (SILISTRA REGION - CALARASI COUNTY)

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AUGUST 2019



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Project „Joint Volunteering for a Safer Life“, e-MS code: ROBG-332

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This report has been commissioned by the Directorate-General for Fire Safety and Protection of the Population - Ministry of the Interior and prepared in the context of a public procurement with the subject: "Risk Analysis in the Cross-Border Region", in implementation of the project "Joint Volunteering for a Safer Life" "JVSF under the Cross-border Cooperation Program Interreg V - Romania-Bulgaria 2014-2020.



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## ABBREVIATIONS

CBR - cross-border region

DGPBZN - General Directorate "Fire Safety and Protection of the Population"

EU - European Union

FMEA - Failure Mode Effect Analysis

GDP - gross domestic product

GIS - Geographic Information System

LAU1 - local administrative unit - municipality

MOEW - Ministry of Environment and Water

NSI - National Statistics Institute

NUTS III - Planning Region

RPN - Risk Priority Number (including priority risk)

RPND - comprehensive risk factor normalized for demographic factor

RPNF - comprehensive risk factor

RPNL - complex risk factor normalized for solvency of a particular municipality

RPNLD - comprehensive risk factor, normalized for the ability of the population to cope with emergencies

SMEs - small and medium-size enterprises

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## 1. Introduction

The purpose of the report is to systematize information on the hazards (threats) and risks of forest fires and floods in the cross-border area (CBR) of Bulgaria-Romania, and in particular Silistra region - Calarasi county, including to analyse, systematise, evaluate and compare:

- Risk management in the CBR;
- Regional and municipal disaster protection plans for the pilot region;
- Prevention measures;
- Capacity for protection and reaction to disaster events;
- Management and communication structures for crisis management;
- Availability of material resources;
- Availability of volunteer organisations, assisting authorities in disaster protection;
- Preparedness and capacity of the population in the CBR to understand the existing and potential threats and risks;
- ability of the affected population to act and deal with a crisis event.

Where possible, the analysis of the collected information is presented graphically, as GIS at municipal level. Municipalities with positive risk assessment scores - low threat or risk, sufficient data availability and presence of specific preventive measures are displayed in green; those with moderate levels of threat and risk, requiring attention and increased focus of prevention in the future are marked in yellow; municipalities with high levels, in combination with lack of data and/or prevention measured are illustrated in red. Graphics were also chosen in light of their easier use to facilitate the development of future training programs and other measures to increase the capacity of the TGR.

The undertaken analysis assesses a specific risk - population risk or human health risk. To achieve comparability under similar circumstances, taking into account the ability of a specific municipality to handle any given risk levels, the risk is normalized to the age dependency ratio of a given municipality. The methodology for risk assessment and prevention is described in detail in the previous report - "Analysis of the scale, frequency, geographical concentration, seasonality and prerequisites for disaster events in the cross-border region".

For the purposes of the report, the "threat of fire" encompasses forest fires only. Fire, as a threat to industrial units or warehouses is considered threat under section industrial accidents and petroleum products - transport, storage and processing.



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## 2. Short description of the pilot cross-border region (CBR)

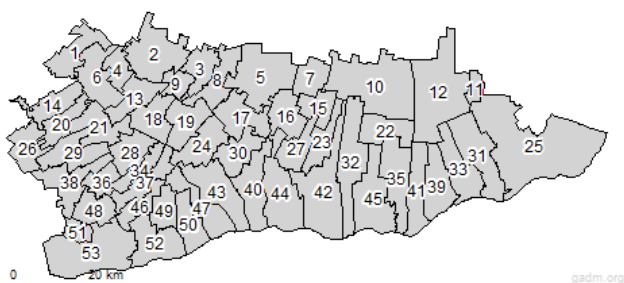
### 2.1. Characteristics of the CBR

The eligible area of the Program covers NUTS III administrative regions or NUTS III and LAU1 equivalent regions located at the border between the two partner countries and covering the following regions:

In Bulgaria: Silistra District (Alfatar, Glavinitsa, Dulovo, Kaynardja, Silistra, Sitovo and Tutrankan municipalities)



In Romania: The administrative division of the territory (as of 31 December 2000) includes 3 cities and 2 municipalities, 50 communes and 160 villages. The county capital is Calarasi (Fundulea, Dragos Voda, Lehliu-gara, Nicolae Balcescu, Dragalina, Stefan Cel Mare, Perisoru, Sarulesti, Fundeni, Valcelele, Vlad Tepes, Lupsanu, Gurbanesti, Valea Argovei, Plataresti, Sohatsu, Stefan Voda, Independenta, Frasinet, Borcea, Frumusani, Alexandru Odobescu, Nana, Vasilati, Ulmu, Jegalia, Ceacu, Unirea, Luica, Model, Soldan, Curcani, Budesti, Dichiseni, Dorobantu, Rosetta, Gradistea, Manastirea, Ciocanesti, Calarasi, Mitreni, Chiselet, Ulmeni, Spantov, Cascioarele, Oltenita, Chirnogi).



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The Bulgaria-Romania cross-border cooperation area, falling within the scope of the analysis, covers 7939.1 km<sup>2</sup> with a total population of 403 483 people. The eligible area in Bulgaria is 2.6% (2851.1 km<sup>2</sup>) of the total territory of the country. Respectively, the covered area in Romania is 5.088 km<sup>2</sup> or 2.13% of the total territory.

The cross-border region is located in Southeastern Europe, in the northeastern part of the Balkan Peninsula. The geographical structure of the cooperation area includes plains, hilly areas and the Danube river basin. The total area of the CBR is 7 934.3 km<sup>2</sup>.

**The Silistra region** encompasses the eastern plateau sub-region of the Danube plain, with the predominant relief being flat. The climate is moderate continental and falls mainly in the Danubian climate sub-region. **Calarasi county** is part of Sud - Muntenia (South - Muntenia) - a development region in Romania. Like other development regions, the area has no administrative powers, its main function being to coordinate regional development projects and to manage EU funds allocation and absorption. The region is located entirely in the historic district of Muntenia, headquartered by the Calarasi Development Agency. The whole territory is located in the southern part of the Bărăgan plain and is crossed by small rivers with deep valleys. On its southern and eastern sides is the valley of the Danube River, which on the eastern side divides into several branches, forming islands. On the west side are positioned the Arge and Dembovitsa rivers, forming a wide valley before flowing into the Danube.

The northeastern area of the cross-border region is parted by the Danube river and the far northeastern part of the Danube plain in Bulgaria. The area is characterized by moderate continental climate. The wind can be categorized with prevailing northeast-northwest circulation, accompanied by snowfall and ice during the winter. Precipitation (450-550 mm) is below average levels (650 mm). The climate of the area in the plain-hilly part is moderately warm and arid, and in the lowland - moderately hot and arid.

CBR water reserves include both surface and groundwater, and in particular the Danube river basin. Apart from the Danube, there are no high-water rivers in the Silistra region. There is only one significant artificial body of water - the Antimovo Dam, Tutrankan Municipality, as well as some shallow eutrophic lakes, the most important of which is Srebarna Lake. Karst lakes can be found often, with highly volatile water regime.

The cross-border region is not particularly rich in natural resources. The Silistra region has limited amount of mineral resources. On the valley slopes of the dry land, rock sections are revealed for building materials - limestone. Careers for the extraction of Cretaceous soft ornamental limestone for lining are found in the regions of Irnik (Sitovo municipality), Podles (Glavinitsa municipality), Zlatoklas (Dulovo municipality). Deposits of kaolin with a reservoir



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thickness of about 18 m (prospective for exploitation) have been studied at Kolobar village. On the banks of the Danube there are deposits of inert materials (gravel, sand).

### 3. Overview of the disaster protection plans

#### 3.1. CBR municipal risk and threat assessment maps

##### 3.1.1. Overview of the risk of floods and forest fires in the CBR

Existing national and regional (at NUTS II, III levels) flood risk assessments in the CBR provide a general overview of the existing risks, which can be categorized as low-to-moderate, with the latter rising in the area of the Danube River basin. **Floods are among the most common natural disaster events in Romania.** The flood risk assessment, analyzed in the context of the implementation of the EC Floods Directive, takes into account the approximate number of potentially affected residents; type of economic activity in the potentially affected area; IPPC installations (see Annex I to Directive 96/61 / EC on integrated pollution prevention and control) which may cause accidental pollution in the event of a flood; potentially affected protected areas, etc.

During the 1960-2010 period, about 400 significant floods occurred, 39 of which are considered significant historical events, based on hydrological criteria and criteria that take into account the extent of the negative effects of the floods. This includes 36 significant historic events for inland rivers and 3 for the Danube, with 375 areas identified as possessing significant risk of inland floods - 24 along the Danube. During this period, 237 casualties were registered (6.6 average casualties / events).<sup>1</sup>

Recent history of floods occurring in Romania demonstrates the major impact of this hazard on both population and infrastructure - floods in 2005 and 2006 affected more than 1.5 million people (93 deaths), destroying an important part of the infrastructure and causing and estimated damage of about EUR 2 billion.<sup>2</sup>

In terms of the **risk of forest fires** and historical data on the occurrence of fires, the Silistra region falls below national average. The total forested territory of the district covers an area of 63,276 ha or 1.51% of the forested territory of the country. The forested part of the forest fund is 59 348 ha, with relatively low afforestation - 20.85%. By category forest areas are divided into coniferous - 0.80%, deciduous - 92.99% and independent areas - 6.21%. Over 8% of the total forest area falls under class I for fire danger.

**In the 2006-2015 period, 48 fires were registered in the forest territories of the Silistra region, with a total of 472.8 ha. damaged. The average annual size of a fire is 9.25 ha - 1.63 times below the national average. The average annual rate of burning of forest territories is**

<sup>1</sup> National Risk Assessment - RO RISK, 2016, National Inspectorate of Emergency Situations, Romania.

<sup>2</sup> Country Report, Conditionality Romania, 2016





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0.07%, or 3 times below the national average. By type of forest fires are divided into peak - 1,17% and low - 98,83%. The years with maximum values of fire activity are 2007 and 2012, when the size of the burned area exceeded the average for the period - 4.7 and 1.8 times respectively.

Analysis of previous evaluations and studies show that:

- On average, 0.008 forest fires occur on an area of 1000 ha, annually;
- On every 1000 ha, 0,75 ha are burned in the forest areas.<sup>3</sup>

In Romania, forests are usually located in the steepest and more inaccessible areas, in the context of worsened soil conditions. Forest fires occur mostly during the dry periods, especially in forests, located in the hilly subcarpathian region. Regarding the time and location of the fires, it was found that the highest registered rates are usually during the spring season (51%), followed by summer (25%), fall (18%) and winter (6%). The seasonality of fires is correlated with dry periods, as well as with agricultural practices for burning plant waste. The size of the forest fund in Calarasi County is 22,000 ha.

Human presence and activity are the main causes for forest fires. This statement is also supported by the intracannual and spatial distribution of fire, which is more common in hilly areas in spring and autumn when agricultural burns occur for vegetation management. In the summer, most forest fires occur in the plains when burning stubble is common in the mountains, due to increased human activity in unpopulated areas. On the territory of Romania, the likelihood and frequency of forest fires has doubled to 341 events / year over the last decade, compared to the historical (1956-2005) average of 175. Climate change is a possible cause of the reported increase. The average area burned has increased by 25%, from 5.2 to 6.5 ha over the same period. Trends in increasing frequency of forest fires and forest areas are consistent with studies showing that climate change is associated with an increased risk of fires.<sup>4</sup>

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<sup>3</sup> Lubenov, K., 2016, Assessment and mapping of forest fires risk in the country

<sup>4</sup> Country Report, Conditionality Romania, 2016



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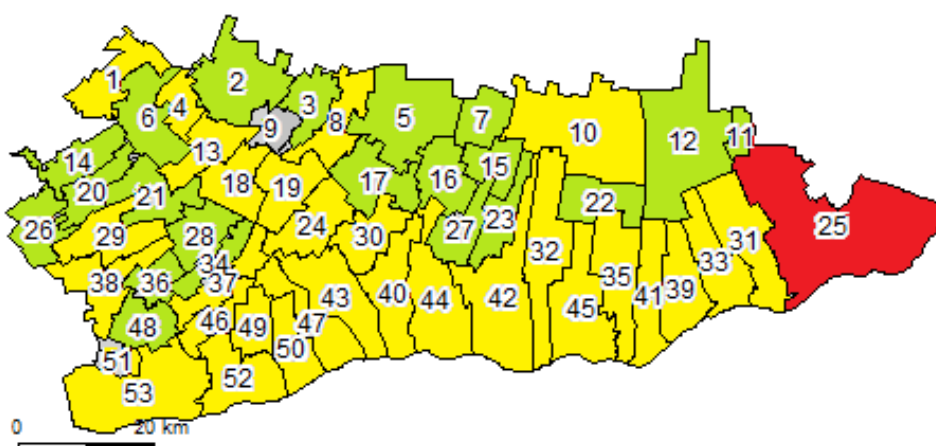
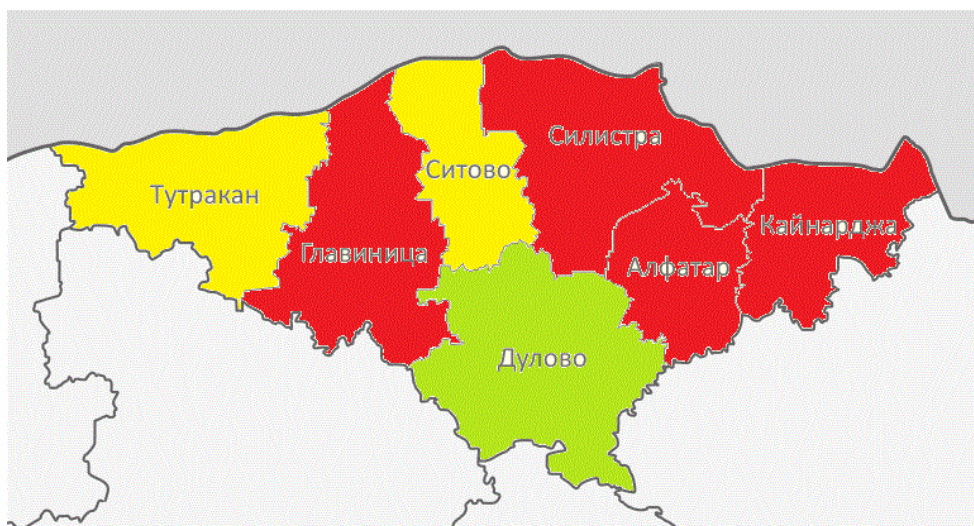


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### 3.1.2. Municipal threat maps - floods

Municipalities in the red are considered to be in most serious threat of floods, in the yellow the threat is more moderate, while in the green it is considered tolerable. In the Bulgarian part, disaster threats originate mainly from torrential rains, as well as along the Danube River. In the Romanian section of the CBR torrential rains and the Dunabe river are also threatening but also pronounced is the threat along the two rivers passing - Ardzhesh and Mostishtya.





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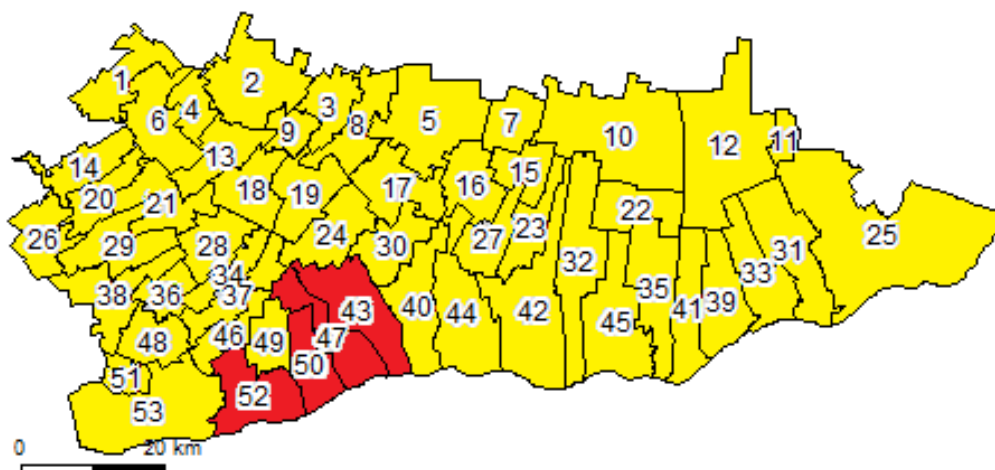
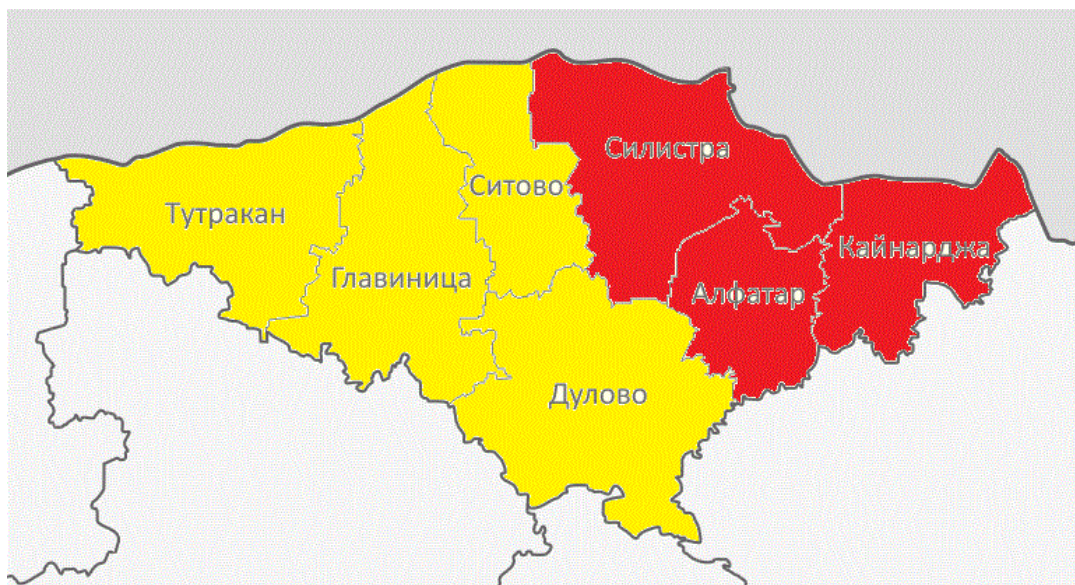


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### 3.1.3. Municipal risk maps - flooding

In contrast to the existing threats, the population flood risk maps note the available prevention measures, described in the disaster protection plans (mostly dykes and their maintenance) and are normalized for the demographic characteristics of the municipalities.



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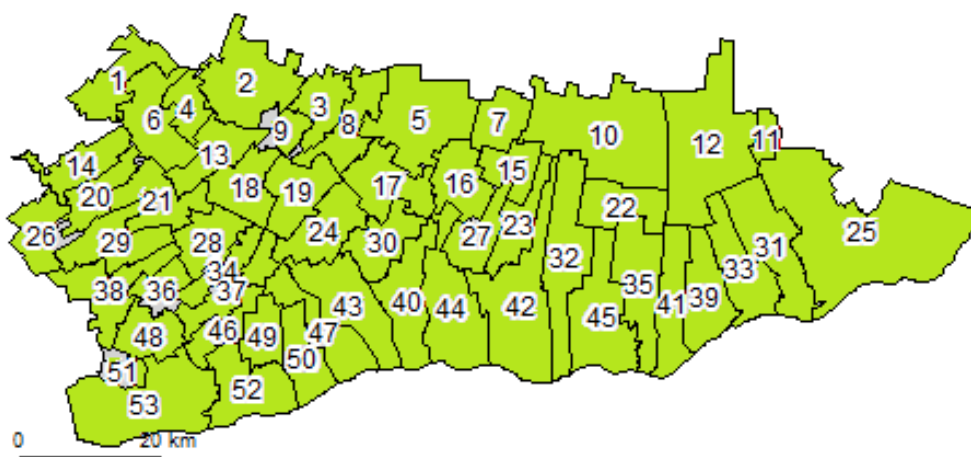


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### 3.1.4. Municipal threat maps - forest fires

The Silistra region and Calarasi county have almost identical geographical and climatic characteristics, but differ greatly in how afforested they are. While in Silistra district forests account for 21.9% of the territory of the district of Calarasi, they are only 4.3%. In absolute values, in Silistra district they are about 624 km<sup>2</sup> while in Calarasi they are only about 218 km<sup>2</sup>, or three times less than those in Silistra. The presence of more forest areas is one of the prerequisites for greater vulnerability of the area to forest fires.



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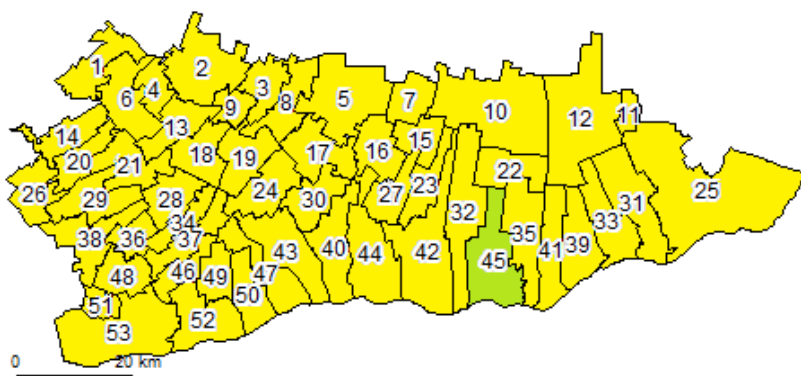


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### 3.1.5. Municipal risk maps - forest fires

The municipal population risk maps take into account the existing prevention measures and technical equipment, normalized for demographic factors. The fact that Alfatar municipality has the largest share of its territory covered by forests, coupled with the lack of regional fire and safety department present, which means lack of physical preventive measures, further increases the risk of forest fires.



A higher threat and risk of drought is identified in the Calarasi county. Given the larger arable land in the county, compared to the region of Silistra, there is a moderate risk of forest fires. Preventive measures and measures for protection of the population are thus required.



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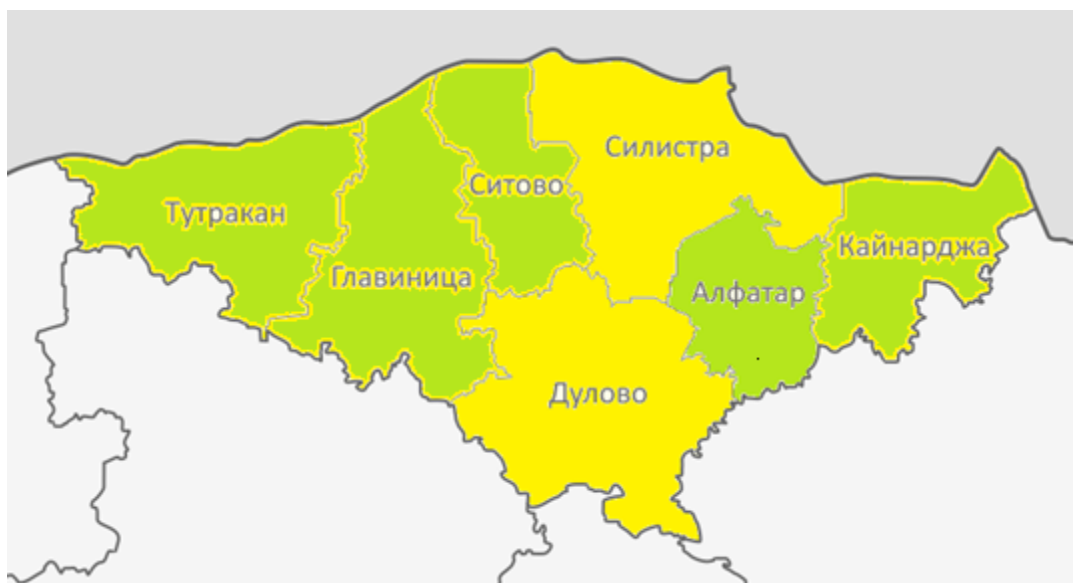
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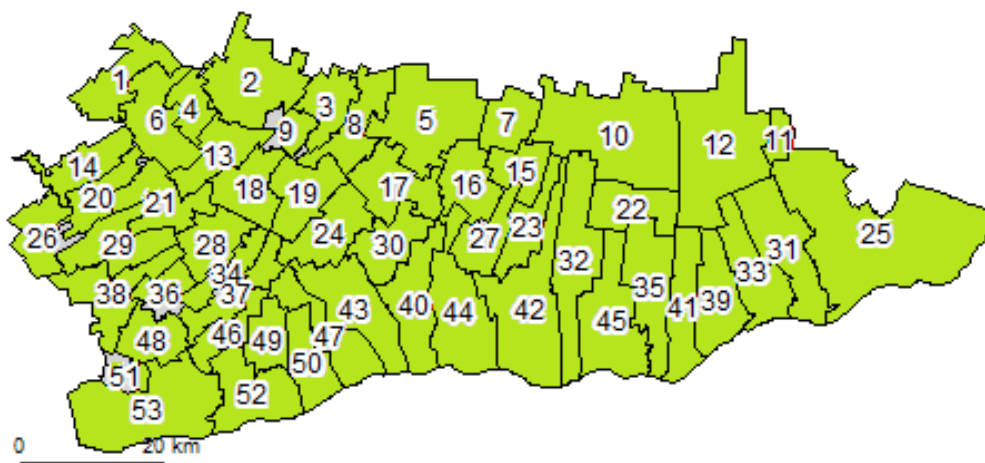
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### 3.2. Municipalities with existing voluntary organizations



The Romanian map is more condensed:



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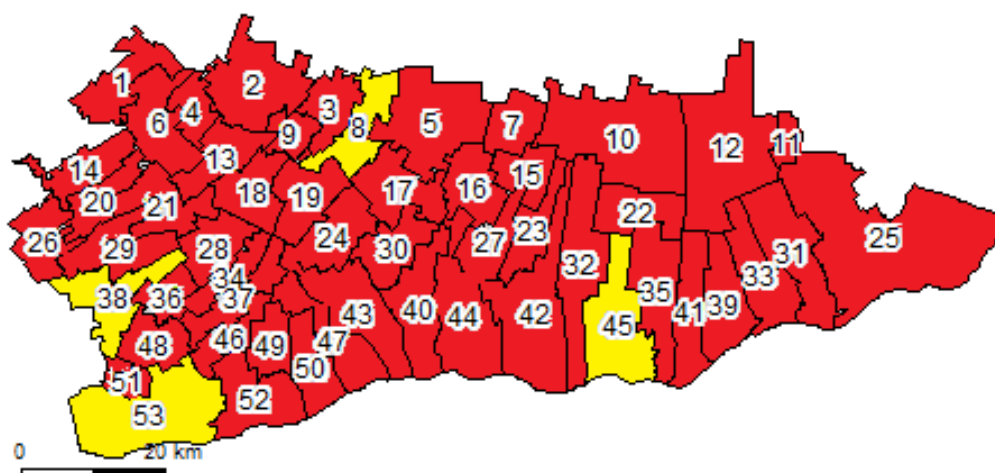
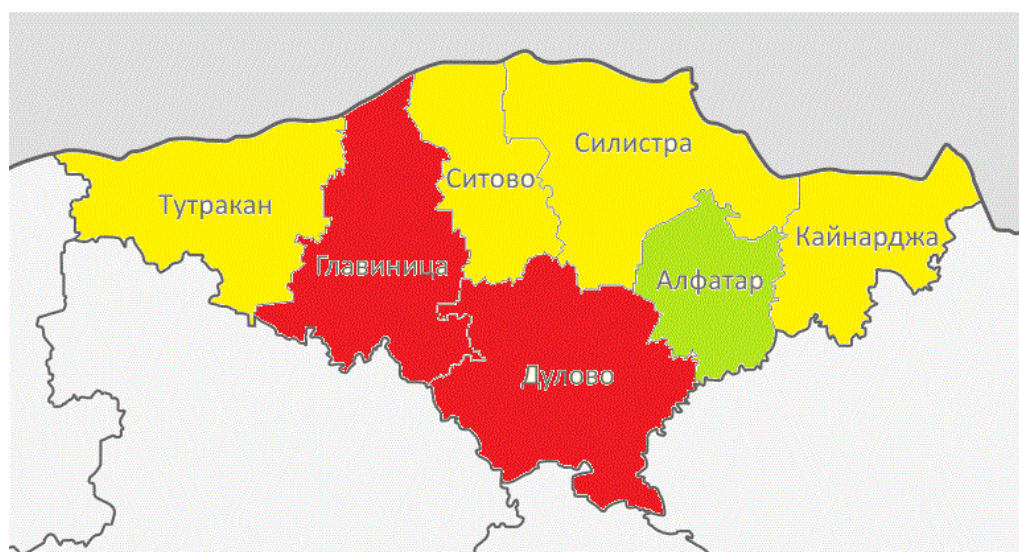


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### 3.3. Municipal disaster protection plans - availability

Municipalities with available and recently updated disaster protection plans, based on document review and information from the in-depth expert interviews, are marked in green. The municipal plans with more formalized content and availability of non-specific prevention measures are highlighted in yellow, while those without a recent update (after 2012) are in red. For Romania, data indicate that there is a long-standing plan, only for the Calarasi region. However, additional data are available from other sources (e.g. National risk assessment, carried under the RO RISK project)<sup>5</sup>.



<sup>5</sup> Available at <https://www.ro-risk.ro/SitePages/Pornire.aspx>



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In certain cases, the municipal plans for protection of the population are up-to-date but lack detailed risk analysis (or do not mention results from such). The measures undertaken to reduce the risk levels and to control their implementation are available for the Bulgarian part of the CBR, while there is no complete and updated plan for protection at county level, for Calarasi, nor for the level of individual municipalities. Nevertheless, the overall plan, for Romania, though not current, lists specific flood protection measures and their status. In the Bulgarian part of the CBR, Alfatar municipality is most aware of the risks and the only one to provide detailed description of voluntary organization (though additional analysis showed that voluntary organizations are present in other municipalities as well), while fire safety related measures are available in all municipalities of the Romanian part of the CBR.

#### **4. Existing measures for preventing and limiting damages from floods and forest fires**

##### **4.1. Disaster prevention and protection measures**

Disaster prevention and protection measures, specifically related to protection of the population, which are included (or should be included) in the regional and municipal disaster protection plans, can be initially divided in two categories:

1. Measures for preventing and limiting damages before the occurrence of the disaster event - prevention measures, based on existing risks analysis; and
2. Measures for limiting the damages and losses after the occurrence of the crisis event - crisis management measures.

In either case, the existing measures may be of a technical nature, through facilities and equipment, communication and information and administrative. The associated financial aspects are not subject of the current analysis, but regardless of the type of measure, it must be effective.

The technical measures, of the first type, include levees along the rivers, plowing fire protection strips, availability of systems for monitoring water levels and temperature anomalies around forest areas, etc. The technical prevention measures of the second type are mainly for the presence of crisis response equipment, physical shelters, specialized hydrotechnical facilities, reservoirs and pumping extinguishing facilities, etc. Communication and information systems include measures to prepare the public and the authorities for understanding the threats and risks, as well as for early warning and notification in the event of a crisis, for guidance and assistance in rescue operations.

Administrative measures are of great importance, as they are key to proper and timely planning. In the first type, they are especially important for spatial planning and urbanization, such as the prohibition or removal of illegal structures and obstacles along the dangerous river basins and gullies, the ban on certain types of agricultural activities in the hazardous areas, close to



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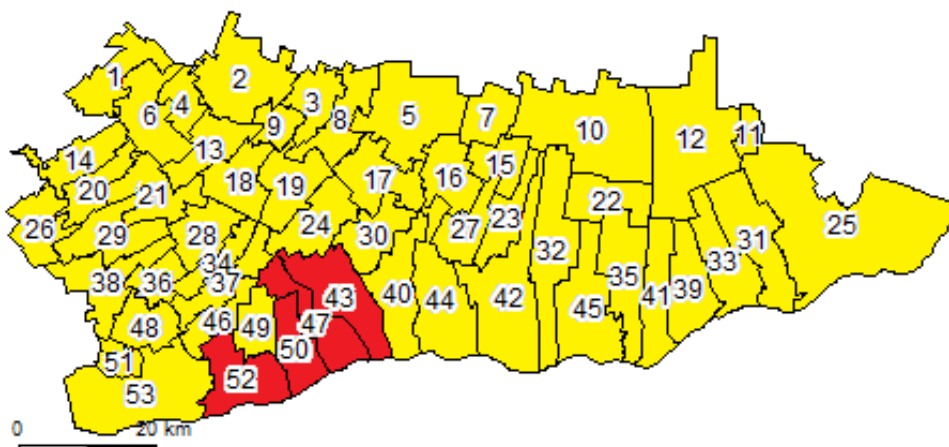


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forest areas, the ban on specific tourist activities in the dangerous months, and others. The second type of administrative measures have to do mostly with the organization and coordination of crisis management activities, organization and structure of rescue teams, preparation of specialized staff and volunteer organizations, preparation and conduct of training sessions, etc.

Critical to all of the above measures is regular actualization, control and maintenance. Regularity requires technical measures to be checked and updated at least once a year, if no shorter time is stipulated by law or other regulations. An illustrative example of the effect of outdated measures are dikes, which prove very telling for levels of risk of flooding along the Dunabe river and the for the Romanian municipalities, which are situated there. As far as the threat of floods is concerned, the most serious risk levels are observed on the territory of Borcea municipality, but the population risk is highest for the municipalities of Oltenitsa, Spantov, Chiselet and Monastirea, due to the fact that the existing dikes are compromised and cannot properly perform their functions.



The available regional and municipal disaster protection plans for the CBR are summarized in the tables below - the full tables are available in the Annex 1. The tables highlight the most important and significant prevention activities and measures for protection of the population. The prevention measures and the crisis management measures and activities are analysed separately. Existing capacities, resources and equipment are not considered here (as they are discussed later on in the report). The tables focus on the risk for the population in the event of floods and forest fires.



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## 4.2. Measures for prevention and protection of the population - Analytical tables

### Overview of the existing disaster protection plans and volunteer organisations

Regions and municipalities				
Municipality	Residents	Disaster protection plan	Date of last actualization	Volunteer organization
Silistra region	111 957	Available, not regularly updated	2012 - the plan foresees an annual update and training activities - it is not clear whether any more recent updates are available, nor whether training activities have been held.	Mentioned, in relation to participation in events after earthquakes and flooding, but no more details available.
Alfatar	2 704	Formal and general; some specific preventive measures tailored to municipal measures for maintenance of facilities and roads and technique training; It is unclear what share of the planned preventive measures were executed or implemented. The plan distinguishes between preventive measures and measures for disaster protection.	2015	Available



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Glavinica	10 243	General, formal	2012	Volunteer organization mentioned, including list of volunteers as an annex. Education is not mentioned.
Dulovo	27 643	General, formal	2012	n/a
Kaynardja	5 115	Available, up-to-date; includes mainly administrative measures without specific indicators	2017	Mentioned to participate in events but nothing more specific. It is not clear from the plan whether such organisation exists formally or whether its members participated in any trainings.
Silistra	47 130	Up-to-date	2017	Mentioned to participate in events but nothing more specific. It is not clear from the plan whether such organisation exists formally or whether its members participated in any trainings. Mentioned regulations for such organizations, but it is not clear from the plan whether they exist in practice.
Sitovo	5 110	Available, from 2013 and recently updated	2017	Mentioned in the organigram but it is not clear from the plan whether such organisations exist in practice or whether their members participated in any trainings.



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Tutrankan	14 012	Available, 2014	2014	Volunteer organization mentioned, including list of volunteers as an annex. Education is not mentioned.
Calarasi County	311 084	Available, 2011	2011	Available



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## Analytical matrix: Prevention measures (see Annex 1)

Област и Община	Анализ на риска	Анализ на Риск наводнения	Анализ на Риск пожар	Технически мерки Наводнение налични (Описание)	Технически мерки Наводнение налични КОНТРОЛ	Технически мерки Наводнение Планирани (Предложени)	Технически мерки Пожар налични (Описание)	Технически мерки Пожар налични КОНТРОЛ	Мерки превенция	Технически мерки Пожар Планирани (Предложени)	Комунал. Инфо мерки Наводнение налични (Описание)	Комунал. Инфо мерки Наводнение Планирани (Предложени)	Комунал. Инфо мерки Пожар налични (Описание)	Комунал. Инфо мерки Пожар Планирани (Предложени)	Административни мерки Наводнение налични (Описание)	Административни мерки Наводнение Планирани (Предложени)	Административни мерки Пожар налични (Описание)	Административни мерки Пожар Планирани (Предложени)	Други
Силистра област	Много общ, само описание грубо на поражения, няма конкретен анализ, по подготвен за пром. Аварии и от Румъния ИЗВОДИТЕ не касат превенцията	Практически липсва, много общ	Много общ, само са изброени териториите на горите по общини с потенциал за горски пожари	Споменати само дигите по Дунав	Няма	Изготвяне на карти заплаха и риск от наводнения и система рано предупреждаване, НЯМА план кога!		Няма	Няма	Няма	Няма	Няма	Инфо за население възможни пожари и правила за действие. (Няма контрол по изпълнение)		Да се направи анализ на риска, но без срок само пожелателно	Подготвеност и прогнози за наводнение	Организационни има описание, но няма план и контрол	Списък на пожароопасни обекти Организация за държавен противопожарен контрол + превантивни мерки, но без срок кога и какви. Карти гори и съгласуване с МЗХ	
Алфатар	Общ	Подготвен за заплахата и има груба оценка на риска	Подготвено описание на заплахата и потенциал за горски. Рискът е оценен грубо	Описани дигите и предвидените съоръжения	Няма	Описани пужки от канализация и защита в някои от населените места	Липсва ПБЗН в гр. Алфатар, но има дете в пожарна	Няма	Няма	Обучение за информиране на население рисковане и действие			Обучение за информиране на население рисковане и действие		Подготвено описание на административни мерки, включително поддръжка, обучение, тренировки и обучения за информиране на населението, отговорни лица.				
Главиница	Формален	Груб за заплахата и слаба оценка на риска, но с високо ниво на риска	Само заплаха	Почистяване на дерета и канали	Ежегодна Проверка на потенциално опасни язовири	Няма	Разораване на минерализована ивица	Няма	Оценка на риска и карти на гори и зем. зем. според пожароопасност			Табели за пожароопасни горски зони			Наблюдение и контрол язовири и диги		Поддръжка на ниви и противопожарни дига		
Дулово	Практически липсва	Няма анализ за конкретната община	Няма изготвен	Няма	Няма	Няма	Няма	Няма	Няма	Общи	Няма	Няма	Няма	Няма	Няма	Няма	Няма	Няма	Формален и без никаква конкретика
Кайнарджа	Практически липсва	Изброени отводнителни канали и евентуално засегнати къщи. Дунав липсва	Изброени горските масиви със заплаха. Анализ практически липсва	Няма освен каналите	Принципно спомената необходимост от комисия за контрол. Няма кога и как действа	Няма	Разораване на минерализована ивица	Няма	Няма	Няма	Няма	Няма	Няма	Няма	Поддръжка плани и инспекция на канали и из. Стени	Няма	Принципите за поддръжка на съоръжения и почистяване	Няма	
Силистра	Подготвен за заплахите, рискът е анализирани общо, но референция към места и страда и с рискова таблица, включваща и готовността за реагиране. НЯМА анализ на резултатите от таблицата!	Анализ на заплахите е подготвен. Рискът по общо но с извадки и с референция към минали събития	Анализ на заплахите, рискът не е анализирани	Диги по р. Дунав	Няма	Няма	Разораване на минерализована ивица и пътна между посеви	Няма	Няма	Няма	Няма	Няма	Няма	Няма	Стандартно описание. Няма конкретно за общината	Да се направят карти на заплаха и риск от наводнения, пожелателно	Изготвяне на карти и съгласуване условия за успешно пожарогасене		
Ситово	Няма общ	Общо местата на заплахите, рискът не е анализирани	Липсва. Споменати само пречиствателите - земеделски стопани	Няма	Няма	Няма	Няма	Описани налични противопожарни водосми - дига	Няма	Няма	Няма	Няма	Няма	Няма	Няма	Няма	Няма	Няма	
Тутракан	Наличен, най-обстоен за наводненията, другите са схематични и общи	Ясни заплахи, отчети са състоянието на технически мерки, досематичен е анализ на риска, но показва къде има необходимост от интервенция	Схематичен	Диги по р. Дунав	Ежегодна Проверка на потенциално опасни язовири. Почистяване на водни съоръжения и др. Контрол на дигите при високи води	Няма	Няма	Няма	Няма	Има с отговорни и методи	Няма	Стандартни, без конкретика	Няма	Няма	Експертиза на съоръжения и опасни обекти, освен останалите стандартни, Обучения	Контрол и проверка и обучение	Изготвяне на карти и съгласуване с Министерствата	Няма	
Район Калараш	Няма общ	Има кратък анализ, с описание на съоръжения и район на заплахите анализ на заплахите и потенциален риск, обобщен за общината	Няма изготвен	Обстойно описание диги, бариаи, годност	Описано състояние	Има фзи на изграждане	Няма	Няма	Няма	Стандартни по ясно описание	Няма	Стандартни, без конкретика, но да не създават паника, след одобрение	Няма	Няма	Мерките са разделени според вода на предупреждаване за наводнение - жълт, оранжев и червен. Наблюдение и контрол язовири и диги и ледоход, Предупреждения а при червен и евакуация	Няма	Има, включително подготовка на населението и информация, ясни отговорности на всички институции и хора (национални и окръжни)	Няма	

## Analytical matrix: Protection of the population (see Annex 1)



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Област и Община	Мерки при управление при кризи														Други
	Технически мерки Наводнение налични (Описание)	Технически мерки Наводнение налични КОНТРОЛ (Предложени)	Технически мерки Наводнение налични Планирани (Предложени)	Технически мерки Пожар налични (Описание)	Технически мерки Пожар налични КОНТРОЛ (Предложени)	Технически мерки Пожар налични Планирани (Предложени)	Комун. Инфо мерки Наводнение налични (Описание)	Комун. Инфо мерки Наводнение налични КОНТРОЛ (Предложени)	Комун. Инфо мерки Пожар налични (Описание)	Комун. Инфо мерки Пожар налични Планирани (Предложени)	Административни мерки Наводнение налични (Описание)	Административни мерки Наводнение налични Планирани (Предложени)	Административни мерки Пожар налични (Описание)	Административни мерки Пожар налични Планирани (Предложени)	
Силистра област	Терени за настаняване, дезинфекция, отводняване	Няма, освен актуализация на плана, но не е ясно има ли такава	Няма	Водонепроницаем дълбоки сондажи и ВиК, но с много малко дигелови рез. Агрегати. Проблем при свързване на тока	Няма	Поддръжка пътища, водонепроницаемост, съоръжения	Привияно споменато Инфо за гражданите е СЛЕД предварително съгласуване с Областния Управител	Няма	Привияно споменато Инфо за гражданите е СЛЕД предварително съгласуване с Областния Управител	Няма	Описание на необходим мерки и отговорности - има и обстойно	Няма	Описание на необходим мерки и отговорности - има и обстойно	Няма	Админ. мерки за стради и диги за земетресения, но без план и срок. Другите общи. РАЗУЗНАВАНЕ и определяне на места (разни дейности и разрушения) трябва да има предварителен оценен план на база на оценка на риска. Такава няма.
Алфатар	Съвместно оборудване и подслон	Няма, освен актуализация на плана, но не е ясно има ли такава	Няма	Недостиг на оборудване за временно настаняване	Пожарен автомобил	Не е ясно	Няма	Информационна система и сирени	Информационна система и сирени	Няма	Оперативен дежурен	Детайлно описание с отговорности и последователност на действия	Оперативен дежурен	Детайлно описание с отговорности и последователност на действия	Детайлно описание дейности и отговорности с последователност и на места с необходимата техника и съоръжения. Не е ясно дали издигнатата техника е достатъчна или не и за кои случаи на наводнение и пожари би била достатъчна
Главиница								Стандартно описание от Обл. План. Няма конкретика.			Привияни действия, без конкретика. Има отговорности поименно, но дали са актуални. Предвидени контрол с наблюдатели, но не е ясно от кога и как действат	Няма	Привияни действия, без конкретика. Има отговорности поименно, но дали са актуални	Няма	Планът не е конкретен. Няма анализ на необходимата техника и съоръжения. Не са ясни връзките и взаимодействие на екипи и администрации при кризи
Дулово	Общите като постановка, няма конкретика	Няма	Няма	Няма	Няма	Няма	Общите	Няма	Няма	Няма	Стандартно описание в пожелателен режим без конкретика и посочени имена	Няма	Няма	Няма	Трудно би послужил за ръководство и справка при настъпване на бедствие
Кайнарджа	Овкательни привияции, без конкретни дейности спрямо място на събитие	Няма	Няма	Овкательни привияции, без конкретни дейности спрямо място на събитие	Няма	Няма	Стандартни пожелателни плюс сирените	Няма	Стандартни пожелателни плюс сирените. Има спомената сайта на общината с мерките за пожарна безопасност.	Няма	Стандартните дейности, без конкретика за общината	Няма	Стандартните, но няма споменати и обучения и проверки за пожарна безопасност.	Няма	Планът не е общ, без конкретика и не биха могли да бъдат разгледани в случай на бедствие и криза
Силистра	Няма	Няма	Няма	Няма	Няма	Няма	Привияно споменато Инфо за гражданите е СЛЕД предварително съгласуване с Областния Управител	Няма	Привияно споменато Инфо за гражданите е СЛЕД предварително съгласуване с Областния Управител	Няма	Описание на дейности и отговорности институции, но няма конкретно за обектите на заплахата и риска	Всичките мерки са с пожелателен характер. Не е ясно как се изпълняват и кой контролира подготовката	Описание на дейности и отговорности институции, но няма конкретно за обектите на заплахата и риска	Няма	Задълженията са описани, но отново няма конкретно име и дали знаят за тези си задължения
Ситово	Няма	Няма	Няма	Няма	Няма	Няма	Детайлно, включително имена и телефони в случай на бедствие	Няма	Детайлно, включително имена и телефони в случай на бедствие	Няма	Привияна организация и ред на събиране и действия с конкретни имена. Съхранява по ясни процедури	Няма	Привияна организация и ред на събиране и действия с конкретни имена. Съхранява по ясни процедури	Няма	Независимо от липсата на анализ на риска и на голяма част от режимите при управление на кризи, планът за действие, който е общ за всички видове заплахи, с е разпределение на задължения и е ясен и конкретен и би бил ефективен при настъпване критично събитие. Няма анализ и описание на ресурсите
Тутракан	Техника и пъски и материали	Няма	Няма	Няма	Няма	Няма	Наблюдение диги и язовири при дъждове и високи води и инфо за всички от постове	Няма	Стандартни по и какво да правят населението	Няма	Привияните от всички, но с позоваване и на предлаганите засегнати места	Няма	Стандартни без конкретика	Няма	
Район Калараш	Ремонти и укрепване на диги и други работи по съоръжения	Наблюдение	Няма	Предоставят се от съответните организации. Няма яснота	Няма	Няма	Стандартни плюс сирените	Няма	Стандартни след разрешение	Няма	Привияни за население с евакуация, много кратко, основно мониторинг и поддръжка на съоръжения и ремонт и възстановителни дейности	Няма	Привияни за всяко ведомство, но с пълен списък и контакти на всички нива, включително и за доброволните формирования	Няма	Няма анализ на риска нито местатакъдето може да се случат нито мерки за предотвратяване и превенция



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#### 4.3. Analysis of the measures included in the disaster protection plans

The analysis of the measures set out in the disaster protection plans shows a serious lack of a detailed risk analysis. Many of the reviewed plans foresee the preparation of threat and risk maps. It is namely the mapping exercise that proves most effective for the purposes of taking fast governance (public management) decisions on protection and crisis management measures. But in many cases geo-referenced information is not available, and even when available, it is subject to aggregation and analysis.

For this major reason - the **lack of specific risk analysis** - the disaster protection plans lack recommendations for prevention measures. In this context, risk analysis does not need to necessarily be an expensive and timely exercise. It can be carried out solely on expert level, at municipal level, and based on a description of possible damage in the face of specific threat. Based on this analysis, measures for protection of the population and measures for reaction in case of disastrous event occurring should be foreseen. In this case, risk maps can be produced at the level of individual municipalities and be comparable to neighbouring ones in the CBR, as analysed in this report.

Another key deficit is the lack of specific information regarding the already existing prevention measures - related to the status and maintenance of available prevention measures. Part of these measures are the plans themselves, but they do not indicate what was envisaged, what was implemented and what would be the impact of this activity.

Another common challenge to effective planning is the neutral nature and formalism of many of the protection plans. From the point of view of compliance of the plan with the specific circumstances in the municipality, the municipalities of Alfatar and Sitovo are more specific and tailored. Others lack specifics, often replaced by extensive descriptions of procedures and activities that are, in most cases, borrowed from the regional plan or the plans of neighbouring municipalities.

Despite the discussed shortcomings, the analysed (where available and up-to-date) disaster protection plans can be useful as a methodological guide. This however is not their primary purpose. For the purposes of prevention and protection of the population, specific plans have to be produced, based on risk analysis, with:

- clear potential consequences and damages;
- prevention and protection measures;
- consistent activities of the rescue teams, equipment and population of the specific municipality and the site of a possible disaster;
- evacuation plans, if necessary;
- up-to-date information on chain of command, rules, assistance and voluntary assistance.

The analyzed plans also lack information on trainings, evacuation and rescue operations exercises. Data on voluntary organizations is not sufficient, despite often mentioned. It is not



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clear what the structure of these organisations is, who participates in them, what is their degree of preparedness, and what is communication/mutual activities with them on part of the authorities. In addition, no horizontal link is established with neighbouring municipalities, for the purposes of mutual assistance and joint prevention, rescue and rehabilitation activities.

## 5. Management of emergency situations, resources and capacity for reaction in the event of crisis - forest fires and floods

### 5.1. Participating structures in the management of emergency situations

Bulgaria	Romania
Operational centers in the territorial unit of General Directorate "Fire safety and protection of the population"	Committees for emergencies
Regional administration	National Committee for Emergency Situations
Regional Management Center	Council of Ministers and other public institutions for emergency situations
Economic operators at regional level	Committee for the Municipality of Bucharest for emergency situations
Municipal administration	Municipal councils for emergency situations
Municipal Management Center	Local councils for emergency situations
Municipality	General Inspectorate for Emergency Situations
Economic operators at the municipal level	Professional public services for emergency situations
Emergency medical treatment centers and other healthcare facilities	Operational centers for emergency situations
Units / structures of ministries in the region	Commander of the action
Rescue system	
Armed forces	
Non-profit entities	
Volunteers ((a) voluntary formations for disaster protection, fire and other	



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emergencies, formally registered in the municipalities and (b) natural and legally associated persons (sports clubs, social groups, etc.))

Source: Feasibility studies on the establishment of the technical solutions necessary to improve the preparation and intervention in case of emergency, 2012

## 5.2. Volunteer organizations

Volunteers have a key role to play in disaster management. In Bulgaria, "a volunteer may be any able-bodied natural person over the age of 18, who is clinically healthy, does not suffer from a mental illness and has not been convicted of a deliberate crime of general nature unless rehabilitated." <sup>6</sup> Recruitment of volunteers is carried out by the mayor of the respective municipality, after a decision of the municipal council, which determines the number of people in any given voluntary organization. The procedure for the recruitment of volunteer candidates is then started, with announcement published in the media and/or on information boards in the municipality.

Voluntary organizations (formations) are created on a territorial basis, for independent action and/or for supporting the main components of the Unified Rescue System (ESS), performing the following basic activities for the protection of the population:

- rescue operations;
- containment and elimination of fires;
- search and rescue operations;
- performing emergency disaster recovery works;
- providing first aid to the victims of fires, disasters and emergencies;
- other protection related operations.

Different types of volunteer training exist (initial basic training, specialized training, training for a manager of voluntary organization, support training) and every volunteer, post registering in a voluntary organization, undergoes an initial basic training. The training of volunteers is provided employees of the territorial structures of the General Directorate "Fire Safety and Protection of the Population" (DGPBZN) - Ministry of Interior, first aid lecturers with medical education and educational qualification degree "Master", volunteers from the Bulgarian Red Cross with relevant qualification or volunteers (trainers) on the spot, in licensed centers for vocational training qualification at the Ministry of Interior or other accredited schools and licensed centers. The trainings are carried out in accordance with programs approved by the Academy of the Ministry of the Interior, in agreement with the Director of the DGPBZN.<sup>7</sup>

<sup>6</sup> Disasters Protection Act, art.40

<sup>7</sup> Regulation on the Procedure for Establishing and Organizing the Activity of Voluntary Organizations for the Prevention or Management of Disasters, Fires and Emergencies and Removal of their Consequences, 2012



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Five voluntary organizations (the first one created in 2007) are currently operational in the region of Silistra, including a total of 63 volunteers in the following municipalities:

- Glavnica;
- Alfatar;
- Kaynardzha;
- Sitovo;
- Tutrankan.

In Bulgaria, there are 234 officially registered voluntary organizations, with a total of 3 115 volunteers. A considerable part, especially in the Silistra region, are also employees of the respective public administrations. It should be noted that, by law, Silistra and Dulovo municipalities are not required to have such a structure, while Tutrankan has recently established its first.<sup>8</sup>

The publicly available data on local level in Romania is very limited, thus there is no information with regards to the number of volunteers on municipal level. Unlike Bulgaria, there are two types of volunteering distinguished in Romania - in addition to the traditional understanding of volunteering, there are (as can be described) professional volunteers. Romanian law also provides for the establishment of volunteer fire and disaster groups (intervention groups) at local level. In contrast to the Bulgarian experience, the existing disaster protection plans, in the Romanian part of the CBR, mention and provide contact information for their volunteers.

### 5.3. Material resources and capacity

Calarasi County	Fire Department Calarasi	Fire truck	4
		Truck rescue activities	1
		Truck for evacuation in smoke, gases and for lighting	1
		Ambulance	1
		Mechanical ladder	1
		Specialized truck	1
		Truck	3
		Pyrotechnic truck	1
		Motopump trailed	1

<sup>8</sup> Regional administration, Silistra, 2018



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		Inflatable boat	1
Group intervention Borchia	Fire truck		2
	Pumps that can be trailed		1
	Inflatable boat		1
Fire Department Oltenitsa	Fire truck		2
	Truck rescue activities		1
	Truck		1
	Motopump trailed		1
	Inflatable boat		1
Group intervention Budesti	Fire truck		2
	Motopump trailed		1
	Inflatable boat		1
Group intervention Kiselet	Fire truck		2
	Motopump trailed		1
	Inflatable boat		1
Fire Department Lehliu Gara	Fire truck		2
	Truck rescue activities		1
	Truck rescue activities off-road (terrain)		1
	Ambulance		1
	Truck		1
	Bus TB		1
	Motopump trailed		1
	Inflatable boat		1
	Fire truck		2
	Truck rescue activities		1



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	Fire Department Dragalina	Ambulance	1
		Truck	1
		Motopump trailed	1
		Inflatable boat	1
Silistra Region	Regional service for fire safety and protection of the population - Silistra	Fire truck	5
		Fire truck with ladder	1
		Small dimensional equipment	9
	Regional service for fire safety and protection of the population - Kaynardzha	Fire truck	1
		Small dimensional equipment	2
	Regional service for fire safety and protection of the population - Tutrakan	Fire truck	2
		Small dimensional equipment	7
	Regional service for fire safety and protection of the population - Glavinica	Fire truck	1
		Small dimensional equipment	2
	Regional service for fire safety and protection of the population - Dulovo	Fire truck	2
		Small dimensional equipment	6
	Rescue group - Silistra	Trucks rescue activities	3
		Specialized truck	2
		Small dimensional equipment	16



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Source: Feasibility studies on the establishment of the technical solutions necessary to improve the preparation and intervention in case of emergency, 2012

The analysis of the resource data above with the information, available in the disaster protection plans, especially those more recently updated, shows that the **municipal plans do not describe or evaluate the existing capacity, material and technical capabilities or resources needed for firefighting, water pumping, water supply to the public, and other rescue and rehabilitation activities.** However, a share of the municipal plans include description of the available equipment and vehicles, municipal or private property, which can be used in activities to protect the population in the event of disasters.

**This structure of the municipal disaster protection plans does not answer one critical question - Are there sufficient resources available to the local fire safety department and structures, the Ministry of the Interior, the municipalities and private organization to perform effective disaster relief activities?** No report provides such an analysis and assessment of what would be required in addition to provide material security and human resources for rescue activities. Again, consideration should be given to the risk assessment, as it will show where and what would be needed and whether these funds will be available within a certain critical period of time after a potential disaster occurs in a specific location.

Municipal plans, based on risk analysis and available capacity in the municipality, may envisage appropriate partnerships for assistance and cooperation with material resources and people from neighboring municipalities, aligning these plans with the district disaster protection plan and the risk analysis scenarios of the different municipalities. Such ex-ante scenarios and co-ordination of aid options will help to increase synergies in CBR, can reduce disaster response times, contribute to more efficient and efficient use of available capacity, as well as less potential damage for the population and the economy.

## 6. Conclusions and recommendations

- Common for the CBR`s disaster protection plans is the lack of in-depth risks analysis. Another common deficit is the lack of specific prevention measures, as well as the procedures for their control/implementation. The prevention measures` planning, as well as the planning for crisis management measures, should be namely based on risk analysis, in order to be effective, efficient and adequate in case of disastrous event occurring, and in order to limit the potential damages for the local population and the economy.
- District and municipal disaster protection plans lack an analysis of the existing (current) capacity of available equipment, material and human resources, adequately corresponding to the risk levels in the given municipality/region. A thorough analysis can envisage cooperation measures between municipalities, within the CBR, including provision of equipment and human resources. This will shorten the response time and



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help for more effective investments in the future, as a means of protecting the population in the event of disasters and accidents.

- Municipal disaster protection plans are not updated regularly and there is no analysis of the effect of the prevention measures taken, if any. New measures, or lack of updates to old ones, result in risk alteration (in this case an increase).
- The plans are not specific to the circumstances and threats to the municipality. Many of them are very detailed in theory and principle procedures, but formalized with lack of specificity for the municipality, its capacity, material, human and technical resources at its disposal.
- Plans are often not tailored as information material for the population, to prepare them to avoid severe consequences in cases of crisis occurring.
- Completely missing are any measures for raising awareness, in a way that provide understandable and easily accessible to the population information, related to the threats, consequences or risks, including how residents can prepare and respond in the event of a crisis. Training of volunteers as well as efforts to increase their numbers and training play a key role here.
- Completely missing for the disaster protection plans are evacuation plans with routes and temporary accommodation, tailored to the specific threat in a given settlement or place of threat. Again, this is due to the lack of a thorough risk analysis. One of the most important measures to protect the population in the event of a disaster is also lacking - the supply or availability of drinking water and household water. This measure is essential especially in the event of an earthquake, flood or other serious disastrous event, while forest fires require the provision of water depots in the vicinity of the potential event.
- From an administrative perspective, the plans are very comprehensive, provide methodological steps, but are often overly formalized. A potential solution is the development of shortened versions, manuals, for use in times of crisis. These simplified plans can be made available to the population, as leaflets, raising awareness of specific threats to the municipality.
- Many of the plans lack specific contact information for crisis response and public access, which positively contributes to controlled disaster management and rescue without panic among the affected population.
- The administrative preparedness for reaction is difficult to be assessed for the Romanian part of the CBR, due to lack of publicly available information. However, based on analysis of additional documents and information materials on other projects, as well as data from in-depth interviews, point to the existence of administrative problems, such



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as lack of coordination and regular actualization of protection plans, prevention and communication measures.

- The main recommendation of this report is the adoption of risk analysis on the level of individual municipalities, with the participation of municipal experts and volunteers, in order for the results to be adequate and specific to the local environment. There is a need for identification of measures for prevention and reaction, which have to be reported and updated at least on an annual basis.



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## 7. Annex 1: Analysis of the measures for prevention and crisis management in the CBR

Region and municipalities	Prevention measures																	
Municipality	Risk analysis	Analysis of flood risk	Risk analysis of fire	Flooding technical measures available (Description)	Technical measures available Flood Control	Flooding Planned technical measures (proposed)	Fire technical measures available (Description)	Fire technical measures available CONTROL	Fire technical measures planned (proposed)	Communic. Info Flooding measures available (Description)	Communes. Info Flooding measures planned (proposed)	Communic. Info available measures Fire (Description)	Communes. Info Fire Planned measures (proposed)	Administrative measures Flooding available (Description)	Flooding administrative measures planned (proposed)	Administrative measures Fire available (Description)	Administrative measures Fire planned (proposed)	other
Silistra region	Many common, only rough description of the damage, no specific analysis on comprehensive changes. Conclusions does not concern prevention	Practical missing many common	Very common, only lists the areas of forests by municipalities with potential for forest fires	Mention only the dikes along the Danube	None	Mapping threat and risk of flood early warning system. When None plan!		None	None	None	None		Info population possible fires and rules of action. (No control implementation)	To analyze risk, but without term aspirational	Preparedness and flood forecasts	Organizational have been described, but None plan and control	List of fire-prone objects; Organization for state fire control + preventative measures, but no deadline when and what maps; Forest maps and coordination with MAF	
Alfatar	common	Detailed threat and there is a rough estimate risk	Detailed Description of the threat industrial, field and forest. Risk is assessed grossly	Described dikes and protective equipment	None	Described needs of ditches and protection in some of the settlements	FSPF missing in Alfatar	None	None	1	Training for informing the population risks and action	1	Training for informing the population risks and action	A detailed description of administrative measures, including support, training, drills and trainings to inform the population responsible parties.				
Glavinica	formal	Rough threat and poor risk assessment, but low risk	only threat	Cleaning of gullies and channels	Annual inspections of potentially dangerous dams	None	Plowing of mineralized strips	None	Risk Assessment and maps of forests, according to risk of fires			Signs of fire forest areas		Monitoring and control dams and dikes		Support strips and fire landfills		





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Dulovo	practical missing	No analysis of the specific municipality	no prepared	None	None	None	None	None	None	None	None	None	None	None	None	None	None	Formal and without any specifics
Kaynardja	practical missing	Listed drainage canals and potentially affected houses. Danube missing	Listed forests with the threat. Analysis practically absent	None except canals	Generally referred to the need for Control Commission. No when and how it works	None	Plowing of mineralized strips	None	None	None	None	None	None	Maintenance plan and inspection of canals and dam. Walls	None	The principal maintenance and cleaning equipment	None	
Silistra	Detailed the threats, the risk is analyzed in general, but refers to places and buildings and risk table, including readiness for reaction. No analysis of the table!	Threat analysis is detailed. The risk in general but is available with reference to past events	Threat analysis, risk is not analyzed	Dikes along the river. River	None	None	Plowing of mineralized strips and roads between crops	None	None	None	None	None	None	Standard description. No particular municipality	To make maps of the threat and risk of flooding wishful		Mapping and creating conditions for successful fire	
Sitovo	no common	Total seats threats, the risk is not analyzed	Missing. Mentioned only causes - farmers	None	None	None	None	Describe d available firefighting reservoirs - landfills	None	None	None	None	None	None	None	None	None	
Tutrakan	Available, the most comprehensive floods, others are schematic and general	Clear threats reported condition, technical measures, schematic risk analysis, but shows there is a need for	schematic	Dikes along the river. River	Annual inspections of potentially dangerous dams. Cleaning canals annually and control	None	None	None	None	There is a charge and methods	None	Standard without specifics	None	Examination of equipment and hazardous objects, among other standard Training	Control and inspection and training	Mapping and coordination with the Ministries	None	

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		interventi on			dikes at high water													
Calarasi County	no common	There is a brief analysis with a descriptio n of facilities and area flooding threat analysis and potential risk generalize d for the municipali ty	no prepared	Extensivel y described dams, weirs, fitness	described condition	There are phases of constructi on	None	None	None	Standardiz ed but clearly described	None	Standard without specifics, but not to create panic, after approval	None	The measures are divided according to code flood warning - yellow, orange and red. Monitoring and control dams and dikes and ice formation, and Warnings in red and evacuation	None	There is, including the preparation of public information, clear responsibiliti es of all institutions and individuals (national and regional)	None	

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Measures Risk Management																
Region and municipalities																
Municipality	Flooding technical measures available (Description)	Technical measures available Flood Control	Flooding Planned technical measures (proposed)	Fire technical measures available (Description)	Fire technical measures available CONTROL	Fire technical measures planned (proposed)	Communic. Info Flooding measures available (Description)	Commune s. Info Flooding measures planned (proposed)	Communic. Info available measures Fire (Description)	Commune s. Info Fire Planned measures (proposed)	Administrative measures Flooding available (Description)	Flooding administrative measures planned (proposed)	Administrative measures Fire available (Description)	Administrative measures Fire planned (proposed)	Result	other
Silistra region	Lairages, disinfection, drainage	None, except update the plan, but it is not clear there such	None	Sources deep wells and plumbing, but with very little diesel Res. Aggregates. Problem blackout	None	Support roads, water supplies, equipment	Generally mentioned; Info for citizens after prior consultation with the Governor	None	Generally mentioned; Info for citizens after prior consultation with the Governor		Description of necessary measures and responsibilities - has thoroughly		Description of necessary measures and responsibilities - has thoroughly			Admin measures for buildings and dams to earthquakes, but without a plan and a deadline. Determining locations (various activities and destruction) should have a preliminary assessment plan based on risk assessment. Such gone.
Alfatar	Rescue equipment and shelter	None, except update the plan, but it is not clear there such	Shortage of equipment for temporary accommodation	Fire truck	It's not clear	None	Information system and sirens	None	Information system and sirens	None	operational duty	Detailed described responsibilities and sequence of actions	operational duty	Detailed described responsibilities and sequence of actions		Detailed activities and responsibilities described in sequence and in places with necessary equipment and facilities. It is unclear whether the equipment available is sufficient or not and for which cases of flooding and fires



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																would be sufficient
Glavinica									Standard description of the reg. Plan. No specifics.		Principal activities without specifics. There supervisors name, but not updated. Planned control, but it is unclear how long and how they work		Principal activities without specifics. There are officers by name, but is obsolete			The plan is not specific. No analysis of necessary equipment and facilities. Not clear connections and interactions between staff and administration in Crisis
Dulovo	General as staging, no specifics	None	None	None	None	None	common	None	None	None	Standard Features in desirable mode without specifics and names mentioned	None	None	None		Hardly served as a guide and reference when disaster strikes
Kaynardja	Descriptive principles without concrete actions to place Event	None	None	Descriptive principles without concrete actions to place Event	None	None	Standard wishful plus sirens	None	Standard wishful plus sirens. There are mentioned on the municipal website with fire safety measures.	None	Implies the choice activities without specifics for the municipality	None	Standard, but there are also mentioned training and practice fire safety.			Plans are common, no specifics and would not have helped rapid response in case of disaster and crisis
Silistra	None	None	None	None	None	None	Generally mentioned; Info for citizens after prior consultation with the Governor		Generally mentioned; Info for citizens after prior consultation with the Governor		Description of activities and responsible institutions, but None kaonkretno the objects of threat and risk	Formal measures. Not clear how to perform and who controls the preparation	Description of activities and responsible institutions, but no specifics related to the objects			The obligations are described, but again no specific name and specific duties

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													of threat and risk			
Sitovo	None	None	None	None	None	None	Detailed, including names and telephone numbers in case of disaster	None	Detailed, including names and telephone numbers in case of disaster	None	Principled organization and order of collection and actions with specific names. Shortened but clear procedures	None	Principled organization and order of collection and actions with specific names. Shortened but clear procedures	None		Despite the lack of risk analysis and a large part of the requisites in crisis management action plan, which is common to all types of threats, with distribution of tasks and is clear and specific and would be effective if crisis occurred. No analysis and description of resources
Tutrakan	Equipment and sand and materials	None	None	None	None	None	Monitoring dikes and dams in rains and high waters and info for all of posts. All other standard measures; consistent structure	None	Standard but what do people	None	The principal of all but a reference to suspected affected areas	None	Standard without specifics	None		

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Calarasi County	Repairs and reinforcement of dykes and other works facilities	surveillance	None	Supplied by the respective organizations. None clarity	None	None	Standard plus sirens	None	After a standard permit	None	Principle of population evacuation, very short, basic monitoring and maintenance of facilities and repair and restoration activities	None	Principles for each department, but a full list and contacts at all levels, including voluntary units	None		No risk analysis nor or specific potential locations; no prevention measures
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