



Good practice

Mitigation Planning *Municipal Emergency Plan for Civil Protection* in the municipality of Aveiro (Portugal)

The Portuguese municipality of Aveiro has developed a collective risks mitigation plan, the **Municipal Emergency Plan for Civil Protection (PMEPC)**, a tool for operational planning and mitigation. During its drafting, in close cooperation with the Aveiro University, the process was integrated into the project SECUR-Ria ‘Security Services and Civil Protection’ within the EU Programme ‘Aveiro Digital’.



Aveiro district & Aveiro municipality



Continental Portugal

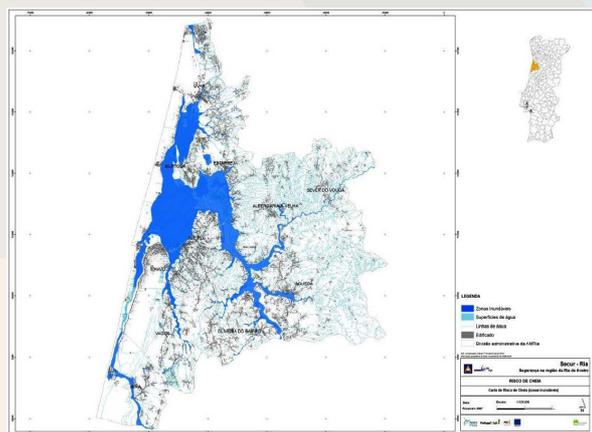
This project had necessarily the support structure on the project SIG-Ria ‘Geographic Information Systems of Municipalities of Ria’ (GIS) ⁴.

A GIS system within the region of Aveiro is a fundamental option for the construction of the integrated management of geo-political and a contribution to the inter-municipal planning and operational capability.

SECUR-Ria project^{1,5}

The project aimed to establish networks of security services and civil protection in the municipal and inter-spaces, linking the entities working in this area: police, civil protection, firefighters, municipal police, the National Institute of Emergency Medical (INEM), among others.

The project involved 11 municipalities and was managed by the former Association of the Municipalities of *Ria de Aveiro* (AMRia) now designated Intermunicipal Community of Aveiro Region (CIRA)² and the *Aveiro Digital*³ Association. CIRA is a public institution of territorial scope aimed at realization of common interests to the municipalities that comprise it.



Flood risk map, SECUR-Ria

The schemes of prevention and planning for emergency situations should be integrated into basic georeferenced and contemplate simulation tools, analysis and risk management. In the detection of emergency situations and operational management of people and vehicles should include the articulation with integrated mobility.

The geographic information systems today are a vital and powerful management tools and support decision making across horizontally almost all the social and economic activities.

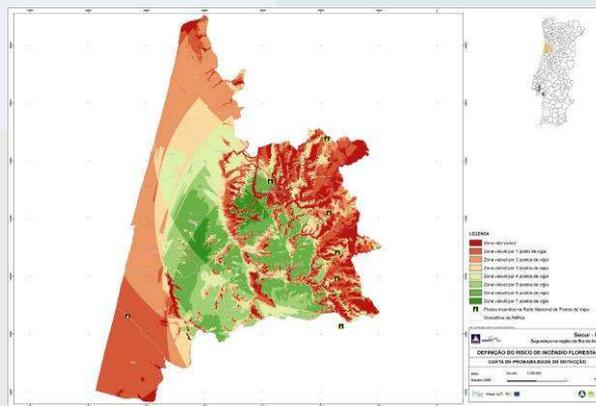
Although the operational safety and civil protection is allocated to a set of entities, educate and inform business and citizens on how to behave in complex situations is an important component in the process of prevention.



Associated with the security and civil protection among other, were also processed various items of information related with spatial planning. One of these issues concerns to the Municipal Master Plan, as they represent the documents that apply to the land management. Another theme corresponds to UNIR@RIA 'Intermunicipal Land Use Plan of the *Ria de Aveiro*', an instrument of territorial development of a strategic nature, aimed at *the articulation between territorial areas which by their interdependence require an integrated coordination*.

Mapping risks

The need for mapping and correlation of various issues involved in both planning and land management, determines its information management, its digital manipulation and structuring of information systems.



Detection probability map (fire risk), SECUR-Ria

Mapping risks produced:

- | | |
|-----------------------------|-----------------------------|
| Coastal erosion risk | Fire risk |
| - Coastal erosion risk map | - Detection probability map |
| - Geologic map | Flood risk |
| - Geomorphological map | - Flood risk map |
| - Coating soil map | Industrial risk |
| - Topographical map | - Industrial risk map |
| - Distance to coastline map | |
| - Erosion rate map | |

Map of security ways and means

This instrument is essential for investment in facilities and security systems and for the management of intervention and emergency situations.

National guideline^{6,7}

Emergency Plans for Civil Protection, depending on the territorial extension of the situation referred to, are national, regional, district or municipal. And they are, depending on its purpose, designated general or special.

General plans are designed to deal with the generality of emergency situations in each territorial and administrative scope. Special plans are intended to be applied in severe accidents and specific disasters, whose nature requires a proper technical and/or scientific methodology, or whose occurrence in time and space is predictable with high probability

or, even with low probability associated, might have unacceptable consequences. In homogeneous risk areas, special plans can be supra-district or supra-municipal.

The Municipal Emergency Plan for Civil Protection (PMEPC) is prepared with the directives issued by the National Commission on Civil Protection (CNPC), in particular:

- Typifications of the risks;
- Prevention measures to be taken;
- Identification of the means and resources mobilized, in situations of serious accident or disaster;
- Definition of the responsibilities incumbent upon agencies, services and facilities, public or private with expertise in the field of municipal civil protection;
- Criteria and mechanisms for the mobilizing and coordinating resources, public or private usable;
- Operating structure which has to ensure unity management and permanent control of the situation;
- Definition of the responsibilities incumbent upon agencies, services and facilities, public or private, with expertise in the field of civil protection.



National Authority for Civil Protection (ANPC) created a methodological guide for development and operationalization of the emergency plans for civil protection, a document intended to assist the development and operation of Emergency Plans for Civil Protection, streamlining the procedures inherent to the entire planning process. These technical specifications would also contribute to the normalization of the structure and content of plans, as well as doctrine production in the area of emergency planning.

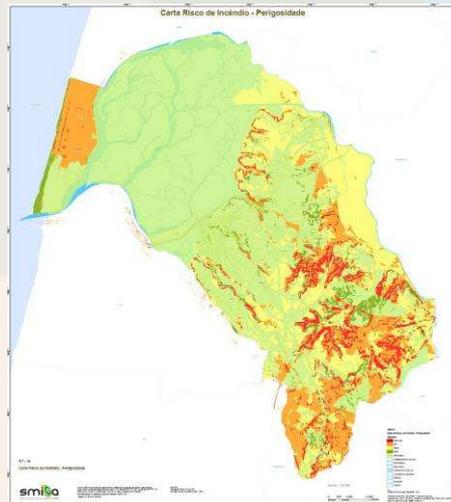
Scope of the Aveiro Municipal Emergency Plan for Civil Protection (PMECPAV) ^{6,7}

Collective risks:
Risks most likely to occur in Aveiro Municipality.
Subject:
Mitigation and disaster preparedness.

Municipal emergency plan must include a risk map and a prior plan of intervention for each type of risk in the municipality, stemming a risk map scale and detail of the plan prior intervention of the nature of the phenomenon and should be tailored to your frequency and magnitude, and the severity and extent of their predictable effects.

Apart from a municipal emergency general plan, special plans can be prepared on risks special intended to be used for specific purposes, such as the Aveiro Municipal Plan of Defense Against Forest Fire (PMDFCIAV) and External Emergency Plan of Aveiro Municipal Stadium.

In the case of extended areas of risk homogeneous over the territory of a neighboring municipality, inter-municipality special plans may be developed.



Fire risk map (hazard), PMECPAV

Risks	Probability	Level of risk
Floods	High	High
Forest fires	High	High
Urban fires	Medium	High
Traffic accidents	Medium	Moderate
Industrial accidents	Medium	Moderate
Railway accidents	Medium	Moderate
Maritime accidents	Medium	Moderate
Transport of dangerous goods	Medium	Moderate
Epidemics / Pandemics	Medium	Moderate
Earthquakes	Medium	Moderate
Cyclones and storms	Medium	Moderate
Dry	Medium-Low	Low
Sea invasion	Medium-Low	Low
Coastal erosion	Medium-Low	Low
Landslides	Medium-Low	Low
Collapse of structures	Medium-Low	Low

Aveiro municipality main risks, Risk Analysis, PMECPAV

Taking into account the severity and probability, the main risks that the Aveiro municipality is subject are shown in the table above.

Partners ^{Annex 1}

PMECPAV was drawn up by the Aveiro municipality with the support of the Municipal Civil Protection Service (SMPC), the collaboration of municipal Civil Protection Agents among other bodies.

Cooperation developed in the following areas:

- Survey, prediction, evaluation and prevention of the collective risks
- Analysis of the vulnerabilities of populations and environmental systems exposed to them
- Investigation in the field of appropriate means and ways to search, rescue and provision of relief and assistance
- Study the protective appropriate forms of buildings, infrastructure services and essentials but also of natural resources



We believe on this crucial issue of sum of capacities, public (with particular reference to the University of Aveiro and governmental entities) and private (companies and associations) entities, as well as the citizens.

The union of the diverse knowledge, experiences, perspectives, resources, etc. which combine, exchange and complete, is a *huge* measure that may provide a mitigation force.

Contents Annex 2

Among others, we point out some vital contents of the plan:

- Background of the emergency planning process (plan previous versions, plan previous activations, public consultation, etc)
- Risk characterization
 - Identification of risks (with the possibility of occurrence, chronology of past events, survey data)
 - Risk analysis (scenarios, probability and severity, risk analysis matrix, level of risk)
 - Analysis of vulnerabilities (potential victims, economic losses to individuals, entities, infrastructure, etc; identify *who* and *what* will be affected with *which gravity*)
 - Strategies for risk mitigation (mitigation measures, inspection, self-protection, organization of intervention forces and recue preparedness, planning instruments)

Eg mitigation measures - flood risk

- Alert and warning systems
- Definition of areas subject to restrictions on municipal spatial plans

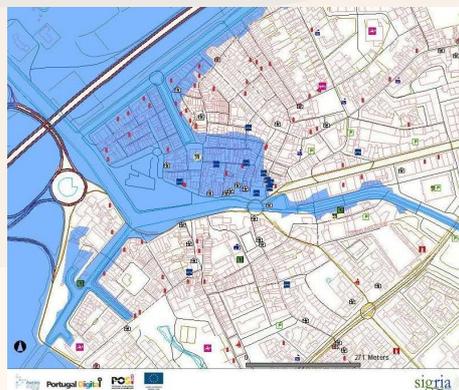
Risk characterization process has the following advantages:

- provide a better understanding of risk
- promote decision making about risk and resource
- reduce the risk to the public, property or the environment
- emphasize prevention activities and risk mitigation

- Response capability (identification of means and resources, update and detailed list of specialists teams in recue and relief operations, individual experts, special equipment, establishments location that can support operations during emergency)
- Response organization (articulation of civil protection agents and other anti-supporting, typify missions and mode of action)
- Disseminate the plan (besides providing the plan to the entities that comprise it, ensure public availability of components unreserved of the plan)



Flood risk map, PMECPAV



Flood risk areas with the location of sensitive spots (eg public buildings, dilapidated houses), PMECPAV, SIG-Ria

Disclosure of all Emergency Plans for Civil Protection of second generation approved by territorial authorities is made through a computing platform on which they are house and available in digital format - Information System for Emergency Planning (SIPE).



Decision process ^{6,7}

PMEPCAV after being drafted by the municipality is approved by the National Commission for Civil Protection (CNPC), upon prior opinion of the Municipal Civil Protection Commission (CMPC) and by the National Authority for Civil Protection (ANPC).



- City Consul as coordinator presented a *draft* plan and requested several thematic meetings with partners.
- At these meetings, through presented scenarios and debates, the plan was adjusted to real capacity of each of the entities in terms of means and resources.
- Plan was designed with the contribution of all.
- PMEPCAV version was approved by resolution at a public meeting of the City Council and made available partially on the official website.
- Received the assent of the CMPC.
- Was delivered in the District Command Operations Relief (CDOS) to later obtain a prior opinion of the ANPC.
- Finally is sent to the CNOS for final approval.

PMEPCAV are subject to regular updating and frequent exercises in order to test its operability.

Lessons learnt

- Integrate all public or private entities that manage, have responsibilities or share goals (eg neighboring municipalities subject to the same risk).
- Only those entities with specific interests take an active part in discussion meetings.
- Question to each entity on the issues that each one understands to be the most difficult.
- Perform mutual aid agreements or protocols, expedites the work and results.
- Also, allows citizens participation.
- Educate and inform business and citizens on how to behave in complex situations is an relevant component in the process of prevention.
- An active link with all (levels) spatial plans in force in the plan area is crucial for a cohesive strategy and a successful implementation of a mitigation plan.
- Interconnection between the municipal emergency plan and municipal spatial plans in place, establishing synergies in identifying risks, vulnerabilities, harmonization cartographic and mitigation strategy.
- Operational and spatial planning must *hold hands* throughout his path.
- Plan is not static. It should be simple, flexible, dynamic, precise and tailored to local characteristics, and mostly open to all contributions and reality changes (social, geographical, technical, logistical, operational, etc) that must be constantly reflected.

Without this crucial issue of combined capacities, togetherness and sharing diverse knowledge, experiences, perspectives, resources, etc., we believe that any mitigation plan will be poorly structured and developed.



Annex 1

Beyond Municipal Civil Protection Service (SMPC) other municipal services and bodies:

- Environment division (DA)
- Forest technical office (GTF)
- Geographic information division (DIG)
- Urban services department (DSU)
- Social housing division (DHS)
- Municipal cemeteries service
- All municipal parish councils (14)
- Aveiro municipal stadium (EMA)

Civil Protection Agents:

- Volunteer firemen Humanitarian associations
 - New Aveiro fire department
 - Old Aveiro fire department
 - Old Aveiro fire department, *São Jacinto* section
 - Industry PORTUCEL volunteer firefighters
- Security Forces
 - National Republic Guard (GNR) *Aveiro & Murtosa* territorial command
 - Public Security Police (PSP) *Aveiro* district command
 - Judicial Police (PJ)
 - Maritime Police (PM)
 - Municipal Police
- Armed Forces (Army/Air Force/Navy)
 - Infantry Regiment n.º 10
- Maritime and aeronautical authorities
 - Aveiro maritime authority
 - Aveiro port authority
- National Institute of Emergency Medical (INEM) and other health services
 - Regional health administration Center (ARSC)
 - Aveiro delegation Sub-regional Health
 - Aveiro district hospital '*Infante D. Pedro*'
 - Aveiro health center;
 - Aveiro Private Hospital CLIRIA
- Portuguese Red Cross
- Security services
- National Institute of forensic medicine (INML)
- Social security institutions (ISS) and Institutions for purposes of assistance and solidarity
 - Aveiro central district of solidarity and social security

- All municipal private social security institutions (24)
- Aveiro Holy house of mercy (Catholic institution)
- Agencies responsible for forests, nature conservation, industry and energy, transport, communications, water resources and environment
 - National Forest Authority (AFN)
 - Dunes Natural Reserve of *São Jacinto* (RNDSJ)
 - Company industrial synthetic resins (CIRES)
 - Portugal Energy (EDP)
 - Gas Company Center (LusitaniaGas)
 - Municipal enterprise mobility (MoveAveiro)
 - National Rail Network (REFER)
 - Portugal Roads (EP)
 - Portugal Telecom (PT)
 - Aveiro Region Waters (AdRA)
 - Aveiro Municipal Urban Services (SUMA)
 - Multi-municipal sewage system of the *Ria of Aveiro* (SIMRIA)
 - Portuguese Environment Agency (APA)
- Services of private security and relief from public and private companies, ports and airports
 - Administration of the Port of Aveiro (APA)
- Research institutions, technical and scientific. Cooperate with senior management, planning and coordination that make up the National System of Civil Protection (SNPC)
 - University of Aveiro (UA)

Other partners

- National Statistics Institute (INE)
- Meteorology Institute (IM)
- Foreign and borders service (SEF)
- Regional Center European Anti-poverty Network (EAPN)
- Commission of Coordination and Regional Development of the Center (CCDRC), Aveiro sub-regional delegation
- Intermunicipal Community of Aveiro Region (CIRA)
- Neighboring bodies and firefighters
- International company of hypermarkets



Annex 2

PMEPCAV structure is divided into 4 parts:

- Parte I - General framework plan
- Parte II - Organization of the response
- Parte III - Intervention areas
- Parte IV - Additional information

Part I - General framework plan:

- 1 - Introduction
- 2 - Scope
- 3 - General objectives
- 4 - Legal Framework
- 5 - Background of the planning process
- 6 - Linkage with planning instruments and spatial planning

Part II - Organization of the response:

- 1 - Concept of action
 - 1.1 - Civil Protection Commissions
 - 1.2 - Operational Coordination Centers
- 2 - Implementation of the plan:
 - 2.1 - Emergency phase
 - 2.2 - Rehabilitation phase
- 3 - Organization and conduct of agents and agencies:
 - 3.1 - Mission of the civil protection agents:
 - 3.1.1 - Emergency phase
 - 3.1.2 - Phase rehabilitation
 - 3.2 - Mission bodies & supporting organizations:
 - 3.2.1 - Emergency phase
 - 3.2.2 - Phase rehabilitation

Part III - Intervention areas:

- 1 - Administration of funds and resources
- 2 - Logistics
- 3 - Communications
- 4 - Information management
- 5 - Evacuation procedures
- 6 - Maintenance of public order
- 7 - Medical services and victims transportation
- 8 - Relief and rescue
- 9 - Mortuary services
- 10 - Protocols

Part IV - Additional information:

Section I

- 1 - General organization of civil protection in Portugal:

1.1 - Civil Protection Structure

1.2 - Structure of operations

2 - Mechanisms of the structure of civil protection:

2.1 - Composition, and convening of the

Commission's powers Civil Protection

2.2 - Criteria and framework for the declaration of the alert conditions, contingency or disaster

2.3 - System monitoring, alerting and warning

Section II

1 - General characteristics

2 - Physical characteristics

3 - Socio-economic characterization

4 - Characterization of infrastructure

5 - Risk characterization:

5.1 - Risk Analysis

5.2 - Analysis of vulnerability

5.3 - Strategies for risk mitigation

6 - Scenarios

7 - Mapping

Section III

1 - Inventory of materials and resources

2 - List of contacts

3 - Models of reports and requests

4 - Models reported

5 - A checklist of updates of the plan

6 - List of registration exercise plan

7 - List of the distribution plan

8 - Legislation

9 - Bibliography

10 - Glossary



Notes & Sources

¹ <http://securria.regiaodeaveiro.pt/>

² <http://www.regiaodeaveiro.pt/>

³ <http://www.aveiro-digital.pt/>

⁴ <http://sig.regiaodeaveiro.pt/>

<http://sig.regiaodeaveiro.pt/sig/sig/viewer.htm>

<http://sig.cm-aveiro.pt/securria/Page.aspx?id=9>

<http://sig.cm-aveiro.pt/portal/>

<http://www2.cm-aveiro.pt/SMIGA/securria/viewer.htm>

⁵ <http://www.regiaodeaveiro.pt/>

Legal framework

⁶ *Bases law for civil protection*. Republic Assembly, Law n.º 27/2006, DR, Series I, N.º 126, July 2006.

Institutional and operational framework for civil protection in the municipal scope, Organization of the Municipal Civil Protection Services and Competencies of the local operational commander. Republic Assembly, Law n.º 65/2007, DR, Series I, N.º 217, November 2007.

Internal Security Law, Republic Assembly, Law n.º 53/2008, DR, Series I, N.º 167, August 2008.

Integrated System of Protection and Rescue Operations (SIOPS), Ministry of Internal Affairs, Decree-law n.º 134/2006, DR, Series I, N.º 142, July 2006.

Bases law for Forest Policy. Republic Assembly, Law n.º 33/1996, DR, Series I-A, N.º 190, August 1996.

Directive on technical standards and criteria for the establishment and operation of emergency plans for civil protection. National Commission for Civil Protection (CNPC), Resolution n.º 25/2008, DR, Series II, N.º 138, July 2008.

Some technical guides

⁷ *Manual to support the development and operationalization of Emergency Plans for Civil Protection*. Technical Notebook PROCIV 3, Risk and Alert Center (NRA), National Authority for Civil Protection (ANPC) & National Directorate of Emergency Plan (DNPE), September 2008.

Risk Characterization Guide in the field of development of Emergency Plans. Technical Notebook PROCIV 9, NRA, ANPC & DNPE, September 2009.

The MiSRaR project

The MiSRaR project is about Mitigation of Spatial Relevant Risks in European Regions and Towns. The project is a cooperation between seven partners in six EU member states:

- the Safety Region South-Holland South, The Netherlands (lead partner)
- the city of Tallinn, Estonia
- the region of Epirus, Greece
- the province of Forlì-Cesena, Italy
- the municipality of Aveiro, Portugal
- the municipality of Mirandela, Portugal
- the Euro Perspectives Foundation (EPF), Bulgaria.

The goal of the project is to exchange knowledge and experiences on risk mitigation in spatial policies. The project will result in a handbook in which the lessons on the mitigation process are described and the good practices from the partners are presented. The Risk Assessment and Mapping Guidelines for Disaster Management of the European Commission will be implemented in the handbook. The MiSRaR project is cofinanced by the European Regional Development Fund and made possible by the INTERREG IVC programme.

www.misrar.eu

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