Peer review – report Tunisia 2018

Funded by
European Union
Civil Protection

Peer review

Tunisia 2018

2018-2019 Programme for peer reviews in the framework of EU cooperation on civil protection and disaster risk management.

Funded by
European Union
Civil Protection

ECORYS 90 Years Answering tomorrow's challenges today

Fraunhofer INT

Contents

Acknowledgements

The time and expertise dedicated by the peers was essential for completion of this report. The peer review team was composed of three peers:

- **Ms Isla Hurley Brunt**, Head of Recovery & Human Aspects, Civil Contingencies Secretariat, UK Cabinet Office, The United Kingdom;
- **Mr Tom Neumann**, Division II.6 – International Affairs, Directorate II – Risk Management, International Affairs, Federal Office of Civil Protection and Disaster Assistance, Germany;
- **Mr Ayman Maani**, Director of Planning and Organising Department, Jordan Civil Defence, Jordan.

Figure 1: The Peer Review Team, Tunisian colleagues and civil protection volunteers during the field visit to Jendouba (© ONPC, 2018)

Ms Livia Stella and Mr Yves Dussart supported and took part in the mission on behalf of the European Commission's General Directorate European for Civil Protection and Humanitarian Aid Operations (DG ECHO).

A consortium led by Ecorys Nederland B.V. assisted the Commission in carrying out the peer review. Mr Philip Sendrowski from Fraunhofer INT and Ms Brigitte Slot from Ecorys Nederland B.V. were project managers for Tunisia, and provided technical and administrative support to the peers throughout the review process. The team was further supported by Ms Elodie Salle from Ecorys Nederland B.V., who provided extensive technical and administrative support to the mission.

The peer review team was given excellent access to Tunisian officials throughout the mission. We would like to extend our sincere thanks to all those who generously made time to meet with us and who shared their perspectives on their work, their achievements and the challenges they face. Our thanks also go to those who designed the review programme and made the practical arrangements. It is our hope that this report accurately reflects the strengths of the Tunisian approach, alongside those areas where we have made recommendations for change. We wish our Tunisian colleagues every success in the work ahead.

The Peer Review was financed by the European Union.

List of abbreviations

Abbreviation	Definition
BBK	German Federal Office of Civil Protection and Disaster Assistance
CBRNE	Chemical, Biological, Radiological, Nuclear and Explosives
CECIS	Common Emergency Communication and Information System
DG ECHO	General Directorate for European Civil Protection and Humanitarian Aid Operations
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
ENPC	*École Nationale de la Protection Civile*
ERCC	Emergency Response Co-ordination Centre
EU	European Union
GIS	Geographic Information System
ICDO	International Civil Defence Organisation
INSARAG	International Search and Rescue Advisory Group
IPCAM	Increasing Preparedness Capacities Across the Mediterranean project
M-USAR	Medium Urban Search and Rescue
MDGs	Millennium Development Goals
MALE	Ministry of Local Affairs and Environment
NGO	Non-Governmental Organisations
ONPC	*Office National de la Protection Civile* / National Office for Civil Protection
PPRD	Prevention, Preparedness and Response to Disasters (PPRD) programme
RPCT	Renforcement des Capacités de la Protection Civile

SNACR	*Schéma National d'Analyse et de Couverture des Risques*
THW	German Technical Relief Organisation
UCPM	Union Civil Protection Mechanism
UN	United Nations
UNDP	United Nations Development Programme
UNISDR	United Nations International Strategy / Office for Disaster Risk Reduction
UNHCR	United Nations High Commissioner for Refugees
VOSOCC	Trans European Services for Telematics between Administrations

1. Introduction

Peer review is a governance tool whereby the performance of the disaster risk management (DRM) and civil protection of one country (the 'reviewed country') is examined on an equal basis by experts ('reviewing peers') from other countries. The process is based on exchange of experience, resulting in non-binding recommendations in this case aimed at improving policy in the areas of DRM and civil protection. The peer review process provides an effective way to i) facilitate exchange of good practices, ii) strengthen mutual learning and common understanding, and iii) deliver credible and trusted recommendations.

Under the EU civil protection legislation, peer reviews can contribute to policy on both prevention and preparedness, and thus cover the whole risk management cycle. The scope of the peer review is defined by the reviewed country, which can opt for either a 'thematic' or 'comprehensive' peer review. Peer reviews strengthen cooperation between participating states and contribute to an integrated approach to DRM by linking risk prevention, preparedness and response actions. The peer review process consequently has the potential to foster wider policy dialogue in Europe, improve consistency and steer progress in critical areas for EU cooperation on civil protection and DRM. After two pilots (in the UK and Finland), a first round of peer reviews took place between 2015 and 2016, covering Bulgaria, Estonia, Georgia, Malta, Poland and Turkey. The peer review of Tunisia is part of the second round of peer reviews, which also covers Cyprus, North Macedonia, Serbia, Algeria, and Portugal.

The concrete objectives of the peer review programme are as follows:

- contribute to improved policy-making on national DRM and civil protection through mutual learning and external assessment by reviewing experts from other countries acting as peers;
- contribute to the development and implementation of relevant EU policies and steer progress in priority actions for EU cooperation on DRM and civil protection, including, where relevant, a contribution to the implementation at national level of the international framework for disaster risk reduction (DRR) (the Hyogo Framework for Action and the Sendai Framework for Disaster Risk Reduction);
- increase the consistency between the different national DRM and civil protection policies and stimulate transferability of good and innovative practices;
- foster policy dialogue in Europe and enhance regional cooperation between countries exposed to common or similar hazards and risks;
- encourage awareness raising through involvement of all stakeholders in the review process and wide dissemination of the results;
- ensure visibility and political commitment at a high level to promote the DRM-agenda.

1.1 Background of the review

Against the backdrop of profound social and political change after the 2011 revolution, the Tunisian authorities are working to build greater national resilience against a range of naturally occurring and manmade risks, which would prove a challenge for any country. Tunisia is subject to a range of naturally occurring hazards, including forest fires, flooding and earthquakes. The country is also in the process of developing its industrial profile, which comes with accompanying risks. More recently, Tunisia has been coping with the aftermath of terrorist attacks, which have had significant impacts on public security and the tourism economy, an important source of national income.

In March 2018, an Administrative Arrangement was signed between the General Directorate for European Civil Protection and Humanitarian Aid Operations - European Commission and the National Office for Civil Protection of Tunisia.

Tunisia has a lot to be proud of in its work to protect against and prevent disasters. During the peer review team's visit to the country, it was clear to them that there is a great commitment, and an earnest desire, across ministries, departments and agencies to strengthen national capability and move towards a greater culture of risk awareness and disaster prevention.

Tunisia has worked with international partners for a number of years to develop local and national capacities. They hope that, by offering training to others, they will move towards a position of leadership in the region. There is a lot that other countries could learn from Tunisia about the mobilisation and training of volunteers, as well as the integration and empowerment of women into resilience efforts.

There is great potential within the Tunisian system to make the public (including the private sector) an ally in understanding and controlling disaster risk and building on new opportunities, whilst also meeting the challenge of increased public expectation. This could foster a new culture of shared national responsibility.

This suggestion extends to the ministries and agencies responsible for understanding and managing risk and preparedness.

1.2 Scope of the review

Tunisia opted to undergo a 'comprehensive' review as part of its participation in the 2018-2019 peer review programme. The comprehensive 2018-2019 review framework incorporates principles developed at both the global (namely the Hyogo Framework for Action and the Sendai Framework for Disaster Risk Reduction) and European (namely the UCPM) levels.

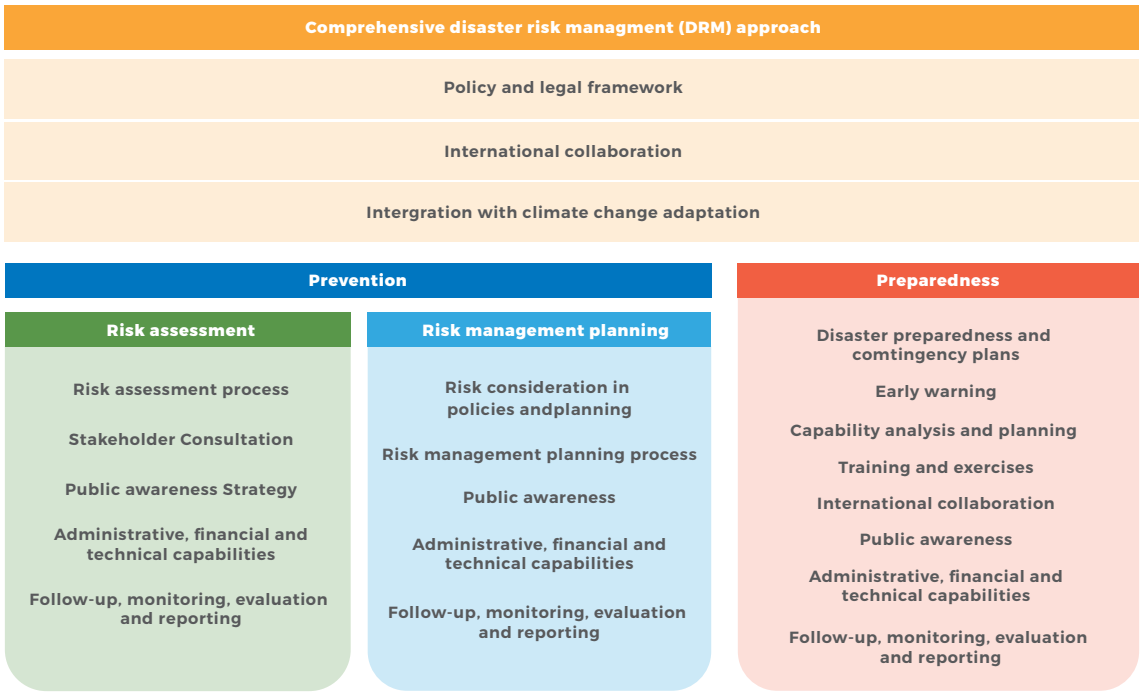
The comprehensive review framework covers several high-level processes, each of which incorporates a range of relevant subprocesses. Guiding questions were developed for each of the subprocesses to streamline the peer review process across participating countries.

The processes covered by the comprehensive review of Tunisia are as follows:

- comprehensive DRM approach;
- prevention (risk assessment and risk management);
- preparedness.

An overview of the processes explored during the peer review is presented in Figure 2 below.

Figure 2: Overview of comprehensive review framework



.

This report identifies good practices and areas for improvement and proposes a series of recommendations. It is for the government of Tunisia to consider and determine whether and how the recommendations should be implemented to contribute to the Tunisian government's policy goals.

The peer programme focused primarily on natural hazards, particularly on forest fires and flooding. Other risks, such as pandemic disease outbreaks, or man-made risk such as Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) incidents, marine pollution, cyber threats or terrorism were not explored in depth with Tunisian colleagues. This report will consequently focus primarily on what was observed during the in-country visit.

1.3 Review process

Once Tunisia's participation in a comprehensive DRM review was confirmed, a call for nominations of experts was sent to countries participating in the UCPM and eligible neighbouring countries. Three peers from EU Member States — Germany, Spain and the UK — were selected to participate, in addition to a peer from Jordan. The peers were supported in their tasks by the European Commission and a project team contracted by the Commission. Unfortunately, the peer from Spain had to cancel at the last minute, so the review was conducted by three peers instead of four.

The peer review mission was conducted over a 9-day period, from 21 November until 29 November 2018. The review opened with a meeting between peers, European Commission representatives, and representatives of several Tunisian ministries and agencies. This took place at the premises of the Office National de la Protection Civile (ONPC). The European Commission representatives addressing the meeting expressed their appreciation to Tunisia for its willingness to participate in the process, and introduced the peer review team. They also highlighted the importance of Tunisia to the EU's external policy.

During the 9-day mission in the country, the peer review team met with and interviewed stakeholders from many different organisations, government agencies and/or authorities, and non-governmental organisations (NGOs). They were also given access to a number of documents, which detailed risk assessments and disaster management in Tunisia. A full list of these documents is annexed (see Annex I).

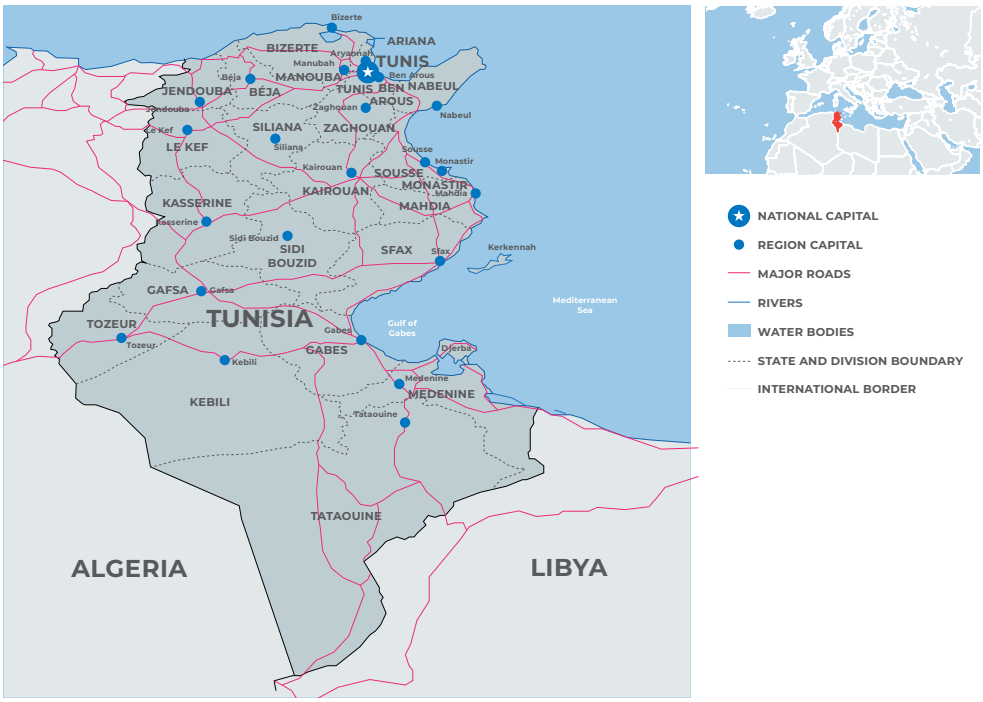
The peer review team presented the findings outlined in the draft report during a stakeholder meeting held in Tunis, on 19 March 2019. Suggestions and input from the meeting were used to update the draft.

This report represents an analysis of the situation in Tunisia as of November 2018. Later developments are not taken into account.

1.4 Country profile

1.4.1 Country Overview

Figure 3: Map of Tunisia



The Republic of Tunisia is located in the north of Africa, with a population of just under 12 million. It is located on the Mediterranean Sea and has a coastline of approximately 1,300 kilometres. The capital city is Tunis, from which Tunisia takes its name.

Tunisia is a unitary state. Next to the national government, the country has three further layers of governance: regions (iklim), 24 governorates (wilaya) and 264 municipalities.

The Republic of Tunisia borders Libya on the southeast, and Algeria on the west and southwest (see map). Striking geographical characteristics include the Dorsal extension of the Atlas mountains in the northwest and the Sahara desert in the south. The 450 kilometre long Medjerda is the longest river in Tunisia, starting in Algeria and flowing along the north of the Dorsal.

Due to its north-south extent, Tunisia has different climate regions. The Mediterranean and more mountainous north experience mild and rainy winters, with hot and dry summers. Further south, the landscape is characterised by a hot and dry central plain, which eventually becomes the Sahara.

In accordance with its geography and climate, Tunisia faces a range of natural hazard risks that differ between regions. Along the Mediterranean coast, there is a risk of flooding. Towards the more arid south, droughts and wildfires represent the biggest risks. Wildfires, especially, occur in the north and centre west parts of the country.

1.4.2 Disaster risk profile

Natural Disasters

Between 1990 and 2018, a number of natural disasters have occurred in Tunisia, with floods the most prominent. The tables below, using data from EM-DAT, show the top disasters between 1990 and 2018, ranked by number of people killed, number of people affected, and economic damage inflicted.[1]

Table 1: Largest disasters by number of people killed

Disaster	Year	People killed
Flood	1990	37
Flood	2009	17
Flood	2007	16
Flood	2018	13
Flood	2003	12

Table 2: Largest disasters by number of people affected

Disaster	Year	Affected people
Flood	1990	152 000
Flood	2018	30 000
Flood	2003	27 000
Flood	2007	6 500
Wild fires	2017	2 000

Table 3: Largest disasters by economic damage

Disaster	Year	Damage (1,000 US$)
Flood	1990	242 800
Flood	2018	36 000

1 EM-DAT is a database on occurrence and effects of mass disasters. It is compiled and maintained by the Centre for Research on the Epidemiology of Disasters – CRED at the School of Public Health of the Université catholique de Louvain. Data is compiled, among others, from UN agencies, NGOs, insurance companies, research institutes and press agencies. Accessed 06 May 2019

Man-made disasters

In the past eighteen years, a number of manmade disasters have occurred in Tunisia. The table below lists the five deadliest disasters by number of people killed.[2]

Table 4: Largest manmade disasters

Disaster	Domain	Year	People killed
Migrant wreckage off coast of Sfax – Kerkennah Islands	Transport accident	2018	87
Sousse attacks	Terrorist attack	2015	39
Bardo National Museum attack	Terrorist attack	2015	22
Ghriba synagogue bombing	Terrorist attack	2002	20
El Fahs train accident	Transport accident	2015	18
EgyptAir Flight 843 crash	Transport accident	2002	14

In 2011, at the outbreak of the Libyan crisis, the European Civil Protection Mechanism was activated to support the Tunisian authorities, the International Organisation for Migration (IOM) and the United Nations High Commissioner for Refugees (UNHCR). This involved providing support with needs assessments and the evacuation/repatriation of Third Country Nationals who had fled violence in Libya, as well as the provision of aerial and sea transportation and funding for transport assets.

In 2017, the European Civil Protection Mechanism was activated for a second time, this time in response to forest fires in the Jendouba and Bizerte Governorates. Copernicus was activated in 2018, when flash floods in the Nabeul region caused extensive damage to buildings and infrastructure.[3]

2 Reuters.com; theguardian.co.uk; Kapitalis.com; aviation-safety.net

3 Copernicus is the EU's Earth Observation Programme.

1.4.3 Hazard exposure

The INFORM[4] Index 2019 hazard and exposure score for Tunisia is 3.2 on a scale of 0 (no hazard) to 10. As the tables above show, floods have historically been a major risk for Tunisia. In addition, droughts and earthquakes also present considerable risk.

Because of Tunisia's varied geography and climate, regions differ significantly in terms of the types of hazards and risk levels. The table below provides an overview of the main hazards, risk levels and regions affected.[5]

Table 5: Hazard exposure in Tunisia

Hazard	Risk level	Region(s)
River flood	High	North and northeast (esp. Medjerda and Mellegue basins)
Urban flood	High	Whole country
Coastal flood	High	Along coast (north/east)
Extreme heat	High	Central and south (medium risk in north)
Wildfire	High	Central and north (low risk in south)
Earthquake	Medium	Most of the regions
Tsunami	Medium	Along coast (north/east)
Water scarcity	Medium	Whole country
Volcano	Low	Nabeul area (north east)
Cyclone	Very low	Whole country
Landslide	No data	n/a

4 See http://www.inform-index.org

5 http://thinkhazard.org/en/report/248-tunisia, accessed 18 July 2018

1.4.4 Vulnerability

Vulnerability relates to the set of characteristics and circumstances of a community or system that make it susceptible to the damaging effects of a disaster. It can also be understood as the 'human dimension of disasters'. This section outlines vulnerability along two axes: societal vulnerability and coping capacity. The societal score is composed of socio-economic vulnerability and vulnerable groups. The coping capacity score is composed of institutional aspects and infrastructure.

1.4.5 Lack of coping capacity

Lack of coping capacity derives from structural shortcomings (whether institutional or infrastructural) which limit a country's ability to effectively respond to, and prepare for, disasters. For the purpose of this analysis, this is measured through the lack of coping capacity variable included in the INFORM index.

The 2018 INFORM Country Risk Profile Tunisia also measures 'lack of coping capacity' for disasters. Tunisia scores slightly better than the region in this category and similar when compared to other countries with similar per capita income.

2. Comprehensive Disaster Risk Management (DRM) Approach

Tunisia's previous disaster management systems focused primarily on the response to disasters. More recently, Tunisian authorities have been working on updating their strategies, aiming to align them with the Sendai Framework for DRR in order to develop a comprehensive DRM strategy.[6]

2.1 Policy and legal framework (at national, regional and local level)

2.1.1 DRR legislation and strategies

In 2014, an assessment of the policy and legal DRM framework in Tunisia was conducted, with the support of the United Nations Development Programme (UNDP). The main conclusions drawn were that there was a lack of co-ordination between all entities with DRM responsibilities, an absence of a comprehensive legal DRM framework, and an absence of a DRR strategy on a national level.

The Ministry of Local Affairs and Environment (MALE), as a focal point for the Sendai Framework, took the lead in formulating a national DRR strategy, with the cooperation of all related authorities. The MALE organised a series of workshops to raise awareness on the implementation of the Sendai Framework, as well as to build their capacities to contribute to the formulation of a national DRM strategy. The proposed draft strategy is in line with the Sendai Framework, Millennium Development Goals (MDGs) and the Paris Agreement.[7] It is based on a multi risk-approach, and consists of four pillars and fifteen goals.[8] There is an Action Plan currently under development, which includes short (pre-2020), medium (2021-2025) and long-term (2026-2030) DRM procedures. The strategy has not yet been formally issued.

In 2016, a study was launched to test the feasibility of implementing the national indicators for the Sendai Framework. The results of the study have not yet been approved.

---

6 DRM is defined as "the systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster. [... It] is an extension of the more general term "risk management" to address the specific issue of disaster risks. DRM aims to avoid, lessen or transfer the adverse effects of hazards through activities and measures for prevention, mitigation and preparedness." (UNISDR 2009)

7 Paris Agreement under the United Nations Framework Convention on Climate Change

8 Presentation "The project of National DRR strategy", Ministry of Local Affairs and the Environment.

National Plan

Led by the Ministry for the Interior, the plan to combat and prevent disasters and improve rescue organisation is developed at a national level ('National Plan'). 24 plans, that form integral parts of the National Plan, are developed at a regional level. Following the National and Regional Plans (based on Law No. 39-91), detailed plans are now in place to deal with specific threats.

In case of a disaster, the Minister for the Interior makes the decision to execute the National Plan, while the relevant governor launches the Regional Plan.

The National Plan includes the following elements:

- a sequential programming of predesignated response operations (both public and private) - the latter are assessed based upon speed and effectiveness imperatives;
- a communication network, aimed at fast response;
- co-ordination procedures between regional plans.

Under the National and Regional plans, detailed and colour-coded procedures respond to specific threats.

Table 6: Types of plans

Additional national plans responding to other specific disasters are developed by other ministries and subject to different legislation.

Plan	
Red Plan	For disasters that include a high number of human casualties, requiring rescue and/or medical care.
Yellow Plan	For disasters that are primarily manmade, e.g. technological hazards, which may include hazardous substances.
Blue Plan	For disasters with a hydrological element, requiring water rescue, pumping or emergency flood defences. This plan also includes emergency mass shelter provision for displaced populations.
Green Plan	Focusing on forest fire fighting strategies, equipment and techniques.

Table 7: Specific plans

Specific plans	
National Plan for locust control	Dec. No. 88-1751
National Plan for emergency intervention on marine pollution incidents	Law No.96-29
National Plan for radiological emergencies	Dec. No. 86-433
National Plan to assist aircrafts in distress	Dec. No. 2009-3333

Legal Framework

In addition, Tunisia has a dense legislative arsenal, which enables various departments of the state to work closely with one another in order to address risks to the safety of people, property and the environment. The main legislative texts in which Civil Protection plays an essential role are:

1. Act No. 91-39 of 8 June 1991, on the fight against disasters, their prevention and the organisation of emergency services;
2. Decree No. 93-942 of 26 April 1993, which lays down the procedures for drawing up and implementing the National Plan and Regional Plans for disaster control, prevention and response, and the organisation of emergency services;
3. Decree No. 2004-2723 of 21 December 2004, which amends Decree No. 93-942 of 26 December 2004, April 1993, and lays down the procedures for the preparation and implementation of the National Plan and the plan's regional bodies, relating to disaster response, prevention and relief, as well as the composition and modalities of the National Commission and the regional commissions;
4. Act No. 93-121 of 27 December 1993, establishing the National Office of Civil Protection;
5. Decree No. 94-568 of 15 March 1994, on the administrative and financial organisation and definition of the operating methods of the National Civil Protection Office;
6. Decree No. 99-2428 of 1 November 1999, laying down the terms and procedures for the use of civilian volunteers by the National Office of Civil Protection.

The current system is essentially governed by Act No. 39-91 of 8 June 1991. The law refers to natural hazards of all kinds. These include earthquakes, fires, floods and storms.

The law stipulates that aid and prevention measures shall be organised by a national and regional plan. The corresponding legislative framework can be grouped into three categories;

1. texts of a global nature which normally deal with all disasters;
2. texts, laws or decrees of a selective nature, which deal with certain specific disasters;
3. texts which deal with one or more aspects of a disaster risk in passing through some of their chapters or articles.

Institutional set-up

The **Ministry of Interior** supervises the disaster management system in Tunisia. The following entities are the main entities related to disaster management system.

The ONPC under the Ministry of Interior, established according to Law No. 93-121, has the main responsibility of protecting people's lives and properties against different disasters and threats. Its mandate includes response activities (Ambulance, Firefighting and Rescue), overseeing operations of the National School of Civil Protection, as well as supervision and control of fire prevention and self-protection in facilities. ONCP also participates in the preparation of the national plan for disaster fighting, prevention and rescue organisation.

The **Permanent National Commission**, established according to Law No. 91-39 and headed by the Minister of Interior, is mainly responsible for preparing and implementing the National Plans for disaster response, rescue and prevention. It is composed of:

Table 8: Composition of the Permanent National Commission

Permanent National Commission
Minister of the Interior and local development
Representative of Prime Minister's Office
Representative of Ministry of Transport
Representatives of Ministry of Defence
Representatives of Ministry of Interior and local development.
Representative of Ministry of Development, Investment and International Cooperation.
Representative of Ministry of Agriculture, Water Resources
Representative of Ministry of Finance
Representative of Ministry of Communication Technology
Representative of Ministry of Equipment, Habitat and Spatial planning and development
Representative of Ministry of Local affairs and Environment
Representative of Ministry of Social Affairs
Representative of Ministry of Health
Ministry of Industry and Energy

Regional Commissions are established according to Law No. 91-39, and headed by the Governor. The main responsibility of the Regional Commissions is to prepare and implement the Regional plans for disaster response, rescue and prevention. The Regional Commissions normally consist of the following actors:

Table 9: Composition of the Regional Commissions

Regional Commissions
Governor: President
Regional Head of the National Guard
Regional police chief (Police National)
Regional Director of the National Office for Civil Protection, ONPC
Representatives at the regional level of the Ministry of Transport
Representatives at regional level of the Ministry of Defence
Representatives at regional level of the Ministry of Development and International Cooperation
Representatives at regional level of the Ministry of Agriculture and Water Resources
Representatives at regional level of the Ministry of Finance
Representatives at regional level of the Ministry of Communications Technology
Representatives at regional level of the Ministry of Equipment, Habitat and Spatial planning and development
Representatives at regional level of the Ministry of Local Affairs and Environment
Representatives at regional level of the Ministry of Social Affairs, Solidarity and Tunisians Abroad
Representatives at regional level of the Ministry of Health
Representatives at regional level of the Ministry of Industry, Energy and Small and Medium-sized Enterprises
Representatives at regional level of the Tunisian Electricity and Gas Company
Representatives at regional level of the National Society for the Development and Distribution of Water
Representatives at regional level of the national wastewater authority
Additional experts if needed

The MALE has the following main responsibilities:

1. To propose the general policy of the state in the fields of environmental protection, nature conservation and promotion of the quality of life.
2. To integrate the sustainable development concepts in sectoral policies of the state, as well as the national strategies and plans.
3. To take all necessary measures, in cooperation with all parties concerned, to prevent and avoid risks, and to address possible or foreseeable environmental problem without waiting for them to occur.
4. To act as the designated Sendai framework focal point.

The **Ministry of Agriculture** manages and controls the water system (including dams, river levels and aquifers), monitors the threats posed by locusts and animal epidemics, mitigates the risks of wildfire and provides the initial response to forest fires. Several ministerial commissions manage and evaluate potential drought and flood periods.

The **Ministry of Transport** and its National Institute for Meteorology manages weather alerts and seism tectonic data.

The **Ministry of Health** manages sanitary risks and cooperates closely with the Red Crescent Movement and its first aid capacities.

Under the **Ministry of Defence**, military engineers and the Directorate of Health intervene in disaster situations.

The Ministry of Equipment, Habitat and Spatial Planning supervises the implementation of regulations under its competency, and the rules for restoration of basic infrastructure.

To enhance cooperation, the MALE proposed the establishment of a national platform for DRR, which would coordinate efforts between all actors to cover the whole DRM cycle.

Good practices:

- **G1:** Existing legislation defines the structure of the co-ordination mechanisms on both national and regional levels, and covers almost all kind of threats.
- **G2:** The draft DRR strategy is in line with the Sendai Framework and was developed through a series of consultations with all sector ministries, as well as a diverse representation of local authorities and public/private sector stakeholders.

Recommendations:

- **R1:** Conduct a legislative review of the DRM system, and consider a unified legal framework that covers all DRM functions such as prevention, mitigation, preparedness, response and recovery.
- **R2:** The legislative review and update should take into consideration the inclusion of the private sector, civil society, and academia into the disaster management system.

2.1.2 Collaboration with relevant national stakeholders

The National Commission and Regional Commissions are the main collaboration mechanisms on the national and regional level respectively. They include only relevant public authorities with no formal representation of private sector, scientific communities or civil society. The Minister of Interior (on the national level) or the Governor (on the regional level) can, however, call upon any expert to participate in the prevention or response to different types of disasters.

The law provides that these commissions should gather at least once a year. Meetings are organised on a regular basis (especially before the summer, to prepare for forest fires and before the winter, to prepare for floods).

The cooperation between all stakeholders is good in response to disasters, but regarding prevention and risk assessment there still is a need for more collaboration and sharing of knowledge and data.

Good practices:

- **G3:** The collaboration with relevant stakeholders covers both the national and regional level.
- **G4:** There is a clear definition of the mandate of the stakeholders.

Recommendation:

- **R3:** Enhance the exchange of knowledge between all stakeholders, e.g. by creation of a formal platform for knowledge exchange, and by establishing a national early warning system for all stakeholders at the national level.

2.1.3 Measurability and evaluation of plans

Existing plans are related to the co-ordination of response only. The DRR strategy and the action plans based on it have not been finalised and are not approved yet.

The MALE issues a periodic report about the advances made in implementing the Sendai Framework.

Good practice:

- **G5:** The introduction of a system which sets objectives and indicators, and evaluates plans, is a good start within the new DRR strategy.

Recommendation:

- **R4:** Ensure the approval of the DRR strategy and start the implementation of the strategy. The results of the plan's evaluations should be an important input for further development and refinement of these plans.

2.1.4 Integration of lessons learned

Lessons learned from previous incidents and events are used by ONCP to develop their response capabilities.

Recommendation:

- **R5:** A more systematic approach is required to use the learned lessons as an input to update the existing plans. This could be the driving force to promote new policies and update legislation, where necessary.

2.2 Regional and local collaboration

Regional or cross-border collaboration between Tunisia and its neighbouring countries (Algeria in particular) – if further developed – would be of great interest to both countries. A joint early warning system for flash floods and forest fires would be key fields for this collaboration.

Recommendation:

- **R6:** Regional projects of cooperation could be started (potentially with the help of international partners and donors), such as: regular regional meetings at the operational and tactical level, the development of a regional early warning system, Standard Operating Procedures (SOPs) for humanitarian and civil protection requests, collaboration during disasters between countries in the region, and regional trainings and simulation exercises.

2.3 Integration with Climate Change Adaptation

For several years, Tunisia has been undertaking measures to promote the mitigation of greenhouse gas emissions and the adaption to climate change. The New Constitution guarantees the right to a healthy and environmentally friendly balanced environment, as well as the right to participate in climate protection. The MALE takes a leading role on this topic. A National Strategy on Climate Change (Stratégie Nationale sur le Changement Climatique) provides a vision, alongside strategic objectives to be fulfilled by 2030 and 2050, to address climate change on a national and local level.

Tunisia recently carried out additional studies to assess the potential impacts of climate change to agriculture, water resources, ecosystem and human health. Additional strategies have been published, including the National Climate Change Adaptation Strategy of Tunisian Agriculture and Ecosystems (Stratégie nationale d'adaptation de l'agriculture tunisienne et des écosystèmes aux changements climatiques) and the Climate Change Adaptation Strategy of the Health Sector (Stratégie d'adaptation du secteur de la santé au changement climatique). Further sector-wide adaptation strategies have been developed (water, tourism) and the vulnerability of strategic ecosystems and agro-ecosystems have been specified. The purpose was to raise awareness of key stakeholders on the importance of adaptation, and to identify concrete measures to address climate change challenges in Tunisia.

The efforts of the state to link DRM and climate change adaption need to be strengthened. Climate change will influence the profile of natural hazards, alter underlying environmental risks and introduce new threats. Building a bridge between DRM and climate change adaption is necessary to better understand the extent to which current civil protection practices reflect future adaptation needs, and what changes are required in this context.

Good practices:

- **G6:** The new constitution of Tunisia stipulates the state's commitment to environmental protection and prevention of pollution. This opens the door to update laws and policies in the field of climate change adaption.
- **G7:** The formulation of a national strategy for climate adaptation, as well as support for strategies that focus on certain sectors, reflects the importance Tunisia attaches to this challenge.

Recommendations:

- **R7:** Continue efforts to overcome institutional/sectoral barriers, in order to facilitate the exchange of knowledge, experiences and information on sustainable development, climate change adaptation and DRM.
- **R8:** Foster coherence between the policy processes related to sustainable development, climate change adaptation and DRM.
- **R9:** Generally make use of synergies through sectoral arrangements.

3. Prevention[9]

In recent years, Tunisia has put a lot of emphasis on the protection of its population, national assets and cultural heritage from the impact of natural and manmade disasters. It has established a strong culture of response, where citizens and the state react in times of disaster. Considerable efforts are being taken to move towards a culture of prevention, and to encourage all concerned stakeholders to anticipate an event before it becomes reality.

The state has adopted the Sendai Framework for Disaster Risk Reduction with an aim to substantially reduce disaster risk, and loss of life, livelihoods and health as a result. It acts to protect the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries.

Tunisia is well aware that an overall process of risk identification, risk analysis, and risk evaluation is the key to comprehending the nature of risks, and to whether the risk and/or its magnitude are acceptable or tolerable.

The country has strengthened ONPC as its civil protection authority in an important way, with additional financial resources, and personal and emergency equipment. International cooperation has been expanded to support domestic efforts.

3.1 Risk assessment

Due to the exposure of the country, Tunisia has extensive experience in risk assessment. Due to its natural and manmade environment, Tunisia is potentially exposed to multiple disasters, including earthquakes, locust invasion, forest fires and epidemics. There are also risks related to atmospheric and hydrological disturbances, such as storms at sea, sand storms, violent storms, snowstorms, flooding and droughts. Technological risks must be added, as well as risks resulting from terrorism. Due to Tunisia's varied geography and climate, hazard exposure differs considerably between Tunisian Governorates in terms of the types of hazards and their risk levels.

Following the industrialisation the country experienced after independence, the risks and dangers the country faces have multiplied and diversified, requiring the Civil Protection services to expand their missions and responsibilities.

9 Prevention is divided into risk assessment and risk management planning. Risk assessment "means the overall cross-sectoral process of risk identification, risk analysis, and risk evaluation undertaken at national or appropriate sub-national level" (UCPM, Decision 1313/2013/EU). Risk management, in contrast, is the "systematic approach and practice of managing uncertainty to minimise potential harm and loss" (UNISDR 2009). Based on risk assessments and their analysis, it comprises the implementation of strategies and specific actions to control, reduce, and transfer risks. It can be complemented or preceded by an assessment of the country's risk management capability.

3.1.1 Risk assessment process

The Ministry of the Interior supervises the disaster risk assessment system. The ONPC is the main entity responsible for civil protection in Tunisia. It is responsible for organising civil protection at the national and regional level. This includes responding to accidents, calamities and disasters, as well as conducting prevention activities.

Multiple other relevant authorities are involved in disaster management, and especially in risk assessment. The list below shows the main actors as identified during the mission:

Table 10: Relevant authorities involved in DRM and risk assessment

Ministry	Task
Ministry for Local Affairs and the Environment	Responsible for the implementation of the Sendai Framework
Ministry of Defence	Military engineering and health management for military assistance in disaster situations
Ministry of Equipment, Habitat, Spatial Planning	Ensure compliance with the regulations within its jurisdiction and the post-disaster recovery of the basic infrastructure
Ministry of Agriculture	Management of the hydrographic network and the alert ratings of the dams and river levels, locust alert, risk of animal epidemics, as well as floods and forest fires
Ministry of Health	Management of sanitary risks and in close cooperation with the Red Crescent Movement and its first aid capacities
Ministry of Transport through the National Institute of Meteorology	Issuing of weather warnings and information on seismic tremors

The various competent ministries and respective subordinate/associated authorities carry out risk assessment processes independently and according to their legal jurisdiction.

3.1.2 Collection and use of data

Statistical databases with historical data have been developed within the jurisdiction of different Ministries. The MALE started the DesInventar Initiative, in cooperation with the United Nations Office for Disaster Risk Reduction (UNISDR), to collect historical data on all damages resulting from disasters between 1982 and 2013. This project helped to identify, assess and monitor disaster risks, and strengthen early warning. It provides risk maps and related information to help decision-makers, the general public and vulnerable communities to deal with national risks. The database allows the presentation of the different types of hazards for each of the 24 Governorates. The results are published on the UNISDR prevention web site.

The ONPC carried out a comprehensive national risk analysis the end of 2016, supported by France. The results were published in 'The National Risk Analysis and Coverage Scheme 2017 – 2021' (Schéma National d'Analyse et de Couverture des Risques - SNACR). At present, there is no legislative or regulatory text requiring the development of such a comprehensive scheme of national analysis, nor coverage of risks relating to civil protection. In the context of the modernisation of the Organic Budget Act, which requires tighter budgetary management, ONPC wanted to propose a structuring document. This would include a strategic scope, enabling decision-makers to carry out their allocation choices whilst taking into account risks and available budget.

The SNACR provides risk assessment for large-scale forest fires, earthquakes and tsunamis, ground movements, flooding and dam failures, extreme weather events, industrial risks and ship fires. The document gives operational guidance on how to cover these risks, and on how to optimise response operations. The document determines the general policy of ONPC, and forms the basis for elaboration on further operational regulations and master plans for personnel management, training, infrastructure and multi-year equipment procurement.

The data used for the ONPC risk analysis stems from:

- the Geographic Information System (GIS)-based database of the operational room of ONPC;
- monthly reports prepared by the Major Risks and Planning Department;
- studies and statistical data carried out by specialised state departments, like the National Traffic Observatory or the National Institute of Statistics;
- official reports of Governorates and Municipalities;
- annual reports of Public Health and Forestry.

By considering risk assessment, it builds the basis for the development of regulations and master plans that define objectives. It is a decision-making support tool, and serves as a basis for the development of a unified operational regulation. This will set the procedures for engaging intervention resources throughout the whole country.

A large number of interventions for the same type of event allow a representative study of the operational activities of rescue units. The approach used in the SNACR allows the calculation of the resources required for appropriate operational coverage, in line with the defined objectives.

ONPC has the ambition to update the risk description section of the SNACR at least once every two years, and revise the statistical and analysis-evaluation section every five years. This would enable them to review and confirm decisions taken, and concerns, in particular, new rescue centres and their human and material resources.

Updates will take into account; the development of public policies, with regard to budgetary missions and objectives; societal changes related to increased demands for relief; the evolution of risks, particularly technological and the evolution and growth of urban and industrial areas.

ONPC has started to assess technological risks. The results are published in the document 'La protection civile face aux risques technologiques'. In cooperation with the MALE, biological hazards are also under risk investigation. The National Institute of Meteorology analyses meteorological and seismic risks, as well as the risks of air and maritime pollution.

The methodology for risk analysis used by the different authorities is quite diverse. Additionally, assessments are updated in different ways. The methodology of ONPC is based on a continuous and permanent cycle of identification, analysis and evaluation, and the treatment of civil protection risks according to the operational objectives. This assessment is updated on a regular basis, while other assessments are not being updated frequently.

Table 11: Departments and authorities involved in the risk assessment process

Hazard(s) and Risks	Department/Authority involved
Earthquake	Ministry of Interior (ONPC , Governorates) Ministry of Local Affairs and Environment Ministry of Transport (National Institute of Meteorology) Ministry of Equipment, Housing and Territorial Development. Ministry of Health Ministry of Social Affairs Ministry of Industry and commerce Ministry of Energy, Mines and Renewable Energies
Tsunami	Ministry of Interior (ONPC , Governorates) Ministry of Local Affairs and Environment Ministry of Transport (National Institute of Meteorology) Ministry of Equipment, Housing and Territorial Development. Ministry of Health Ministry of Social Affairs Ministry of Industry and commerce Ministry of Energy, Mines and Renewable Energies
Floods	Ministry of Interior (ONPC , Governorates) Ministry of Local Affairs and Environment Ministry of Transport (National Institute of Meteorology) Ministry of Equipment, Housing and Territorial Development. Ministry of Health Ministry of Social Affairs Ministry of Industry and commerce Ministry of Energy, Mines and Renewable Energies

Coastal erosion and sea level rise	Ministry of Interior (Governorates) Ministry of Local Affairs and Environment Ministry of Transport (National Institute of Meteorology) Ministry of Agriculture, Hydraulic Resources and Fisheries
Forest and wildfires	Ministry of Agriculture, Hydraulic Resources and Fisheries (General Directorate of Forestry) Ministry of Interior (ONPC , Governorates) Ministry of Transport (National Institute of Meteorology) Ministry of Local Affairs and Environment Ministry of Social Affairs
Risks for human health	Ministry of Health Ministry of Agriculture, Hydraulic Resources and Fisheries Ministry of Interior (ONPC , Governorates) Ministry of National Defence Ministry of Transport (National Institute of Meteorology) Ministry of Local Affairs and Environment Ministry of Agriculture, Hydraulic Resources and Fisheries
Land desertification	Ministry of Agriculture, Hydraulic Resources and Fisheries Ministry of Interior (Governorates) Ministry of Transport (National Institute of Meteorology) Ministry of Local Affairs and Environment Ministry of Agriculture, Hydraulic Resources and Fisheries
Risks for water resources	Ministry of Agriculture, Hydraulic Resources and Fisheries Ministry of Interior (ONPC , Governorates) Ministry of Local Affairs and Environment Ministry of Transport (National Institute of Meteorology) Ministry of Health
Risks for biodiversity	Ministry of Health Ministry of Agriculture, Hydraulic Resources and Fisheries Ministry of Interior (ONPC , Governorates) Ministry of Local Affairs and Environment Ministry of National Defence Ministry of Social Affairs Ministry of Transport (National Institute of Meteorology)

Risks for Energy Supply	Ministry of Energy, Mines and Renewable Energies Ministry of Industry and commerce Ministry of Interior (ONPC , Governorates) Ministry of National Defence Ministry of energy mines and renewable energies Ministry of Equipment, Housing and Territorial Development Ministry of Industry and commerce
Marine pollution	Ministry of Local Affairs and Environment Ministry of Energy, Mines and Renewable Energies Ministry of Industry and commerce Ministry of National Defence Ministry of Interior (ONPC , Governorates, National guard) Ministry of Health Ministry of Agriculture, Hydraulic Resources and Fisheries Ministry of Transport
Technological risks	Ministry of Interior (ONPC , Governorates) Ministry of National Defence Ministry of Energy, Mines and Renewable Energies Ministry of Industry and commerce Ministry of Local Affairs and Environment Ministry of Health Ministry of Transport

Good practices:

- **G8:** The SNACR is a strategic document, in terms of organisation and planning, based on risk assessment. It draws up an inventory of major risks that may result in damage to and loss of the safety of persons, property or the environment, to which ONPC must provide an operational response. It therefore assesses the adequacy of intervention resources, and resources for the coverage of these risks, and proposes solutions for their optimisation.
- **G9:** The SNACR contains recommendations relating to the objectives to be achieved in terms of operational management, adapted equipment and skill base, according to the risks they face on a daily basis (or during significant events). It identifies areas that are not covered by relief assistance within the timeframe set by the objectives of operational coverage. It proposes a list of intervention centres, which will be standardised in terms of equipment and personnel, created in accordance with the assigned indices and adequate to carry out search and rescue missions.
- **G10:** The SNACR allows achievement of the organisation's performance objectives, moving from a logic of means to a logic of results. This document also takes into account the decentralisation process currently underway in the country.

Recommendations:

- **R10:** Concerning the coverage of particular and major risks, there is a need to continue strengthening regional directorates with specialised units. These would support response activities of the regular intervention units and reinforce operational rooms at regional/local level, where appropriate. They would also review if sufficient resources were allocated in emergency health services.
- **R11:** Enhance understanding of disaster related data and forecast, and how to analyse them, through focussed training for relevant stakeholders.
- **R12:** Strengthen cooperation with regards to maritime incidents and marine pollution, both within Tunisia and within the region.

3.1.3 Stakeholder consultation

The stakeholder consultation is coordinated through the aforementioned commissions at the national and regional level. Informal committees cover the local level.

The process of risk assessment on a national level is coordinated by the National Commission, under the supervision of the Minister of the Interior. The process of risk assessment on a regional level is coordinated by the respective Regional Commissions, under the supervision of the Governor, who reports to the National Commission. The National Commission gathers information from different national services and assists Governors in the implementation of early warning systems and disaster management. ONPC acts as permanent secretariat to the commission on all levels and provides technical expertise and policy documents.

Tunisia is in the process of rethinking its existing DRR system, to make it an essential and overall element in the development and planning of future national policies. The lack of a coherent strategy and methodology is one of the weak points in the existing system. A new institutional framework has been announced to coordinate and implement the state's risk assessment and management process, though it has not yet been established.

The national system established for overall risk management does not make it possible to connect all relevant actors and to cover all phases of the cycle DRM in a comprehensive approach. It is characterised by a high degree of dispersion and an entanglement of normative benchmarks that do not reflect a coherent and harmonious approach in risk management. The current system does not favour a global integrative approach, but a segmented and compartmentalised approach -even for specific risks such as flooding. Risk management, in turn, becomes fragmented and incomplete, distributed between several authorities with no real possibility of co-ordination, besides the commissions.

Recommendation:

- **R13:** Tunisia does not yet have a national platform for the reduction of disaster risks. Preliminary discussions about this have, however, already taken place between the various partners regarding the design of such a project. Such a platform requires an appropriate legal framework. It should also involve stakeholders from different background, e.g. representatives of government, the community scientific or civil society. Efforts in creating such a multisectoral national platform for DRR under the umbrella of the Prime Minister's Office should continue.

3.1.4 Public awareness

Tunisia realises the importance of strengthening public education and raising awareness in assessing risks. Efforts towards this include annual awareness raising campaigns (e.g. regarding floods). One project with France has created so-called 'Vigilance Maps', which include warnings on disasters and advice for actions to take. These are to be made publically available.

The current legal framework allows the population to be informed. Different information campaigns exist at national, regional and local levels, carried out by different Ministries, to create a culture of prevention.

ONPC puts a lot of emphasis on maintaining a good relationship with the media. Awareness-raising campaigns for the general public are predominantly conducted through newspapers and TV. Radio broadcasts also play an important role.

Various public services collect information on risks and their nature, intensity and recurrence. The results of these risk assessments are, however, not systematically available to all DRR actors, including civil society. The Meteorological Institute provides information concerning weather events and risks of seismic activities. ONPC and the Forest Authorities organise periodical seminars at regional and local level, to inform the population about risks. All actors hope to contribute to a disaster resilient society.

Recommendations:

- **R14:** A major effort remains to be made towards the development of a special media plan for DRR. This would respond to crises, targeting all population groups, in rural areas as well as in urban areas, and be applied at national, regional and local levels. As highlighted by local actors, all actors involved in DRM would benefit from training in this regard.
- **R15:** Promote and organise regular educational awareness activities and training at local level to inform the population about risks, responsible prevention, preparedness, mitigation and response behaviour (especially with regard to flood risks).
  The risk landscape is changing in Tunisia and it is important to educate and inform the public and civil society accordingly, beyond the traditional local knowledge.

3.1.5 Administrative, financial and technical aspects

Risk assessment is the responsibility of the state. The related expenses do not appear, however, to be budgeted anywhere. Their financing is furthermore not broken down according to the areas of responsibilities.

Within the budgets of the ministries, the disaster related expenses aim primarily intervention and recovery. This allocation is global and is not broken down.

Stakeholders reported that the budget of DRR is not sufficient to cover all the necessary activities by the concerned administrations. To compensate for the small amount of funding, the state uses bilateral and international cooperation. A better approach to DRR requires a more precise delimitation of competences between the prevention functions and those that are related to disaster and post-disaster management. It also needs to provide a dedicated budget for DRR, and integrate it into development plans and with finance law on the annual management of the budget of the state.

Recommendations:

- **R16:** Ensure proper funding for civil protection authorities and stakeholders to maintain and extend capacities.
- **R17:** Enhance knowledge transfer, e.g. by sharing examples such as risk maps, among the relevant sectors and stakeholders to avoid duplication.

3.2 Risk management planning

Tunisia aims to strengthen its ability in risk management planning. The country has conducted a review of legislative regulations, and an investigation of stakeholders in this context. Currently, the legal framework does not cover all phases of the cycle with the same level of emphasis. There is a big emphasis on preparedness, while prevention is lacking in regulations and harmonisation.

Systematically, the country implements international standards on risk management planning. Tunisia is actively involved in the Africa-Arab Platform on Disaster Risk Reduction to assess progress, and reaffirm commitment towards the implementation of the Sendai Framework for Disaster Risk Reduction. There is large potential for cooperation between the work of the EU and the work of Tunisia in this field.

3.2.1 Risk consideration in policies and planning

National legislation ensures that plans are in place to prevent disasters. Tunisia's legislative framework for risk management planning seems to remain, however, relatively embryonic with regard to risk management planning. It is characterised by the virtual absence of specific legislative texts concerning this topic.

While every ministry involved follows its own DRM strategy, there is no harmonised national DRM strategy yet. Furthermore, there is no system to monitor the implementation of the Sendai framework which has the right to issue directives. It would help to better pool resources between ministries, to assess the implementation across the different sectors and to share best practices.

At the institutional level, DRM planning is organised around the National Commission. At regional level, the Regional Commission, chaired by the Governor, is responsible for drawing up the Governorate's regional plan and monitoring its implementation. It is composed of representatives of all ministers involved in the National Commission.

As the chairman of the Regional Commission, the Governor can request additional experts for the purpose of risk management planning when the need arises. At the local level, but beneath the regional level, volunteer committees are sometimes created to assist the Regional Commission. Within their own regional prevention jurisdiction, Regional Commissions prepare themselves by creating and updating their own DRM plans.

Many risk management planning actions are carried out with the support of bilateral/international cooperation. France and Germany support the country in a considerable way. The support gained by bilateral and multilateral projects plays an important role in flanking the country's DRM efforts sustainably.

At the regional level, Tunisia needs to manage certain risks in consultation with neighbouring countries, including locust invasion, specific health risks, forest fires and floods. Cooperation with Algeria needs to play a significant role within this context. In sharing a border, both countries tackle cross border disasters, like forest fires and flooding, on a regular basis. Water mis-management at dams, or the risk of dam failure in Algeria, may expose Tunisia to some potential severe damage. The Libyan civil war also effects Tunisia directly. Cooperation with other Maghreb and Sahel countries is essential to fulfil the country's risk management planning.

After each major event, the concerned departments of each ministry involved collect data on the loss of human life, livestock, infrastructure and buildings. The findings are often reported in a sectoral way by each ministry. The data obtained by the different actors is, however, not stored in a centralised database and is not shared, either. A feedback loop is not established by the regulatory system in force, and this partitioning of responsibilities does not promote the development of a standardised format for further risk assessment. There is no systematic assessment report on the socio-economic impacts of disasters, nor is there an evaluation report on the effectiveness of measures put in place to mitigate the possible effects of hazards. Stakeholders reported that assessments are often carried out under pressure, without the definition of an appropriate methodology.

Recommendations:

- **R18:** Support the development of risk management planning through specific legislation.
- **R19:** Facilitate the implementation of the Sendai framework with the creation of a system to monitor and assess implementation across different sectors, and to share best practices.

3.2.2 Risk management planning process

The Permanent National Commission ensures that a large number of ministries are represented. It thereby allows the co-ordination of national government services in DRM.

The Regional Commissions meet with their representatives on a regular basis to ensure risk management planning dialogues on regional level.

The areas of responsibilities within a commission are the following:

1. **Governor**: chairman, staff management and making decisions.
2. **Public Safety / Order (Police) / Guard National**: guarantee of public safety, fight against crime, close accident scenes, support rescue work, determination of closing times, monitoring of stationary traffic, speed monitoring, monitoring of the transport of dangerous goods, noise abatement, arrangement of traffic signs and equipment, handling of administrative offence procedures.
3. **Telecommunications**: guarantee of communication by cable and by radio or mobile network, ensure network security and technical facilities for communication between the authorities involved.
4. **ONPC**: secretariat of the commission, rescue work, extinguishing work, providing technical consultation.
5. **Health**: ensures normal operations in all hospitals, provides personnel to treat injured and affected people and evacuate/transport to other hospitals, senior citizen centres, health reporting, epidemiology, infection protection, provision of medicines and care for the dead.
6. **Social**: provision of material, clothing, food, beds, blankets and mattresses for emergency shelters, social affairs in general, senior citizens' aid, homeless help, asylum aid, youth.
7. **Education, schooling, culture**: ensure continuity of work in schools, issue orders to close schools, make decisions to use schools as emergency shelters, school administration, kindergartens, museums and other cultural sites, city archive, opera, theatre.
8. **Building administration**: planning, traffic development, urban development, surveying, cadastre, building supervision, housing.
9. **Environment**: ensuring the safety of the environment, protection of the environment, control of water sources in case of contamination, water supply, water disposal, sewage treatment plants, waste disposal.
10. **Public relations and press**: guarantee of press work for the staff, assessing of information, communicating staff decisions to the public, VIP support.
11. **Energy supplier and electricity**: ensuring the supply of electricity in the affected locations and securing alternative energy sources, electricity supplier, district heating.
12. **Finance**: helps the staff in their work by providing funds to implement decisions.
13. **Military and Armed Forces**: guarantee of personnel and logistical assistance and protection of the affected areas, helps the staff at work by providing personnel and materials.

14. **Industry**: material aid and energy supply, control of industrial sites in the event of accidents, measures to contain the accident.
15. **Economy and trade**: control the supply to markets with goods and food of a daily and necessary need, guarantee of continuity in stock camps, city advertising, hall administration, congress administration.
16. **Veterinary**: measures to ensure the safety of livestock, creation of groups of veterinarians to control livestock, ensure vaccination and supply of medicines, food hygiene, animal disease control, animal welfare, food controls.
17. **Finance**: guarantee of funds to enable logistical assistance, cash, taxes.
18. **Railway network and rail traffic**: ensuring the safety and transport of passengers, decision to stop all travel in case of danger.
19. **Waste water and water disposal**: ensuring the cleanliness of the sewage system and rainwater in case of flooding.
20. **Water supply**: guarantee of drinking water supply.
21. **Agriculture**: measures to secure and protect agricultural land and forests (people, animals, trees, etc.).
22. **Tourism**: ensuring successful tourism operations and deciding to stop tourist traffic, securing the tourist institutions, ensuring the supply of necessary goods and continuity of service in the institutions with electricity, water and communications.
23. **Justice**: decisions to solve the crisis (traffic-free zones, road closures).
24. **Regional development**: ensuring statistics on human and material damage, ensuring continuity of projects, assisting the staff by providing material where necessary.
25. **Civil Engineering**: infrastructure planning, traffic development, urban development, surveying, cadastre, building supervision, housing.
26. **Transport and traffic**: ensuring the transport of citizens and the people concerned, ensuring the smooth flow of traffic.
27. **Port Directorate**: deciding to stop work in the ports (unloading, loading, storing etc.), ensuring work in ports, securing ships and crews (depending on disaster).
28. **Meteorological service**: guarantee of meteorological services, monitoring weather conditions and providing the staff with the necessary information.

All above representatives, within their responsibilities, assist the Governors in the processes of risk management planning.

As a permanent secretariat for the commissions, ONPC organises exercises which train in risk management and educate representatives in crises management. The aim is to further improve, at strategic level, both comprehensive co-ordination and decision-making culture. ONPC develops scenarios for the exercises and assists the commissions in order to assess and react to them.

The National School of Civil Protection (*École Nationale de la Protection Civile – ENPC*) was built in 2012, and plays an important role in educating and training on DRM. Among other things, ENPC provides space to conduct these exercises.

Besides the relevant public authorities for DRM, on national and regional level there are several NGOs ready to assist the state in providing help and expertise. They are strategically integrated into the DRM system via the commissions, and operationally docked to the respective authority. Tunisia is willing to strengthen voluntary assistance within its national civil protection system.

Supported by Germany, Tunisia has established voluntary associations all over the country to assist ONPC in DRM. The state is creating an adequate training structure for volunteers and has defined the framework status, rights, guarantees and duties of those involved. The associations are equipped with resources for prevention and preparedness purposes. Efforts are under way to further include these associations in the operational structure of ONPC.

Good practices:

- **G11:** Education and training are central tools to have prepared for crisis. By means of systematic further education, the knowledge and experience of individuals, staff and bodies could be maintained and improved. As a component of national crisis prevention, exercises for the National and Regional Commissions are extremely important to guarantee a comprehensive and effective inter-departmental cooperation. ONPC officers prepare these exercises.
- **G12:** Building up the ENPC as a national hub for education in civil protection was an important milestone in strengthening the country's capabilities. ENPC could act as an academy, not only for civil protection officers but also for all other relevant stakeholders. Equipped with the necessary infrastructure, Governors already train at the ENPC in a professional work atmosphere to better fulfil their legal obligations.
- **G13:** Volunteers could play a vital role in supporting the state's efforts. They could contribute to preparing for and responding to emergencies by supporting statutory agencies. The development of voluntary civil protection associations helps to include civil society in the process of risk assessment and risk management planning. The gender balance reached in the Tunisian voluntary associations is exemplary (about 40 % female).

Recommendations:

- **R20:** Continue to invest in conducting exercises for the commissions on regional and national level. Continue the development of the ENPC.
- **R21:** Further invest in building up a comprehensive network of voluntary associations to assist civil protection efforts.

3.2.3 Public awareness

Tunisia does not yet have any clear procedures defined for the exchange of information on DRM processes, nor to inform the population about it. The Ministry of the Interior informs about progress on the national level, while Governors inform about the work of commissions on the regional level.

Every ministry has its own system for raising public awareness; these include utilising television segments, radio broadcasts and newspaper articles.

Monitoring networks are in place under the jurisdiction of the different national authorities. These include assessing the risks of dam failure, locust invasion and epidemiological outbreaks. The National Institute of Meteorology, under the Ministry of Transport, has a network that covers the whole country. It is equipped to provide information to different operators, like air and sea navigation, as well as to all citizens, on a wide range of hydro meteorological and earthquake risks.

ONPC informs the population about DRM through media. The Press and Public Relations Office put emphasis on maintaining good relations with the media, for the purpose of risk and crisis communication.

Several DRR training sessions are regularly provided in schools, high schools and universities. Some specialised associations organise training courses in emergency and disaster medicine.

Following the industrialisation which Tunisia experienced after gaining independence, risks and potential threats have multiplied and diversified, requiring an expansion of the mission and responsibilities of the Civil Protection services. For some years now, ONPC has organised training courses in the field of prevention, for the benefit of engineers and senior technicians working in design offices, engineering organisations and other operators of critical infrastructure.

DRR educational modules have been introduced, in recent years, in the work of academic institutions. Some training courses are established at the Master's level. Research on risk management is conducted in governmental organisations or universities. This research is oriented towards study and knowledge of hazards. They could, however, focus more on vulnerability and resilience as factors involved in risk analysis.

Good practices:

- **G14:** Strengthening local capacities in sparsely populated areas through awareness raising and training, following the analysis of risk assessment and re-lief intervention data recorded in the various Governorates over the last years.
- **G15:** The promotion of business continuity planning in the private sector, consid-ering steps of risk management planning.

Recommendations:

- **R22:** Risk education is not yet part of the official programmes established by the Ministry of Education. In terms of scientific research, DRR and DRM does not benefit from specific programmes. The current research conducted does not cover all relevant risks. The development of risk education and the dissemination of a culture of prevention in schools and universities requires the strengthening of the network of trainers, especially at regional and local levels, and the provision of a specific and dedicated budget.
- **R23:** Effort still needs to be made in raising awareness among national bodies in charge of national scientific research policy. This requires input from all re-search departments. DRR would benefit from being considered within the National Research Programmes. DRR measures should be established in partnership with countries who have a tradition of DRR research.
- **R24:** There is ongoing dialogue with research institutes that can enhance disaster resilience. However, this dialogue could be further enhanced.

3.2.4 Administrative, financial and technical aspects

The ministries involved on the national level lack a sufficient, dedicated budget line for DRM. Each governmental organisation has to deal with its respective risks within its own given budget. As a result, Tunisia uses a variety of budgetary resources. Additionally, budgetary cuts are putting a strain on the system and affecting DRR policies.

DRM activities are taking the decentralisation process into account. Regional and local levels adapt national guidelines under consideration of their own hazard exposure. The decentralised approach follows constitutional requirements, and aims to improve the participation of regional and local actors. The regional commissions do not, however, have a sufficient, dedicated budget for DRM either. They currently need to make cuts in other sections in order to invest in this area.

3.2.5 Follow-up, monitoring, evaluation, and reporting

Strategic exercises on national and regional level are appropriate assets to strengthen DRM co-ordination and capabilities with the commissions. ONPC provides policy training for its officers in order to gain necessary expertise for the consultation of the other stakeholders involved in risk management planning. The absence of a national platform, however, remains a barrier to a comprehensive approach at inter-ministerial level. Strengthening the National and Regional Commissions alone is not sufficient to obtain improved collaboration.

The reporting and information flow between authorities on DRM measures, both within the work of the commissions and outside of it, is based mainly on traditional communication methods, such as phone calls and written reporting. Hydrological data, vital for dam and flood management, is shared between the authorities involved, but not with the possibly affected population in real-time. The same applies to the spread of forest fires. The need to extend risk and crisis communication systems to include the population is key in strengthening risk management efforts by the state.

Tunisia has a code of land use, planning and urban development that takes into account the recurrence of many natural hazards. It stipulates that infrastructure must comply with certain criteria for resistance to natural hazards. The spontaneous urbanisation of some urban areas creates additional risks which need to be considered in the process of risk identification. The authorities are, however, facing practical difficulties and challenges at the local level in enforce these norms; transgressions and informal settlements have multiplied.

Recommendations:

- **R25:** Further invest in the enhancement of risk awareness and risk communication, early warning systems and mechanisms facilitating land use compliance.
- **R26:** Entirely integrate disaster prevention into municipal land-use planning by providing additional resources that could play a central role in enhancing community resilience, e.g. maintaining and protecting critical infrastructure.

4. Preparedness

4.1 Disaster preparedness and contingency plans

4.1.1 Development of plans

There is a clear structure of national and regional responsibility in the creation of emergency plans for natural hazards and non-malicious manmade accidents (e.g. industrial accidents). At the national level, the ONPC has led efforts to determine which of four overarching 'colour' emergency plans applies (red, yellow, blue, and green).

In addition to the national 'colour' plans, there are specific plans governing some key risks: locust management, marine pollution and air accidents. In a disaster scenario, the plans may be used simultaneously to address the situation. At present there is ongoing work to digitise the national plans, as they are only available in paper format. Plans are updated every two years.

4.1.2 Emergency laws

A number of laws and decrees govern emergency preparedness in Tunisia. The primary piece of legislation is Law No. 91-39 of 8 June 1991, on preventing disasters, combatting them and organising rescue services. The law focuses on emergency planning and response activity by national and regional authorities.

The law sets out several national and regional structures, with key actors being the Minister of the Interior and the 24 regional Governors. The national and regional commissions may establish working groups (referred to in the law as 'sub-committees') as needed for the purposes of planning for emergencies. Governors have a responsibility to establish regional structures and to have a good understanding of the resources available locally to undertake emergency management.

From discussion with Tunisian colleagues, it is clear that local practice typically follows the current legal requirement, with regional Governors having significant autonomy in decision-making about preparedness in their areas. A Governor would, ideally, consult with the Ministry in advance of activating the appropriate regional plan in the event of an emergency. They are empowered to act immediately, however, if there is no time for consultation due to the level of risk. They must inform the Ministry as quickly as possible afterwards if a plan has been activated.

The 1991 law puts significant emphasis on the power of the national or regional authorities to requisition equipment, buildings and services in the context of disaster response. It references the right to fair compensation, and penalties for those who refuse to comply with a requisition order.

One benefit of the requisition approach is that it extends to allowing authorities to ask individuals and organisations with relevant experience or significance to participate, even if they would not typically participate in a national or regional commission.

The peers did not have the opportunity to discuss, in detail, how this aspect of the current law is implemented in contemporary practice. It may be valuable for Tunisian colleagues tasked with updating the law to consider whether the overarching power to requisition private property remains necessary, given the progress that Tunisia has made since 1991 in developing and equipping its regional and national emergency management services. Different potential approaches include the strengthening of pre-emergency engagement and investment at Governorate level, and the capabilities offered through public private partnerships (PPPs). This is providing that there are appropriate contractual frameworks in place to ensure that PPP response and early recovery contracts remain cost effective for the authorities. This could contribute to a more sustainable, democratic and inclusive approach to emergency management, which encourages innovation in addition to providing access to resources.

The 1991 law does not place any requirement on the authorities to communicate with the public about risk or about disaster preparedness, and does not make reference to actors from beyond the professional emergency preparedness community (e.g. the military, trained volunteers and private sector organisations).

Subsequent decrees have attempted to address this, which is a pragmatic, if slightly fragmented solution (see section 2 for a list of key decrees which expand the reach of the 1991 law). The legislation does not state how the recovery phase of a disaster will be managed, nor set out any suggestions for regional or national structures to manage recovery issues which span the responsibility of multiple Ministries and their internal departments.

There are a range of recognisable causes of disasters which are not covered by the legislation, including; greater numbers of foreign visitors, potentially bringing disease from across the world; increased levels of industrial activity and the building of industrial facilities to process hazardous materials; the rise of new international terrorist campaigns and conflicts in neighbouring and regional countries.

Another gap in the law is in the recognition of new vulnerabilities, such as cyber risk. Tunisians increasingly use internet services in the workplace and on personal devices. Use of the internet and mobile telephones brings many advantages, but also brings the risk of cyber disruption due to either malicious intervention or system failure. This can have challenging secondary impacts at the local and national levels. Disaster management legislation and planning activity must keep pace with technological developments and anticipate new risks.

Many of our Tunisian colleagues within Ministries and the ONPC expressed the view that there is a need to modernise and expand the existing core law that governs emergency management. A wide variety of views and expectations were expressed by different national actors about what changes should be made to the law. It was not clear from our discussions how the goals of each relevant actor will be fully understood by others and co-ordinated to create a new, or updated, law which meets the requirements of all stakeholders with an interest in Tunisian civil protection.

Good practice:

- **G16:** It is clear from discussions with a range of colleagues across Ministries, departments and agencies that there is a desire for greater collaboration, supported by the current legal framework, and recognition of the benefits that collaboration brings.

Recommendations:

- **R27:** Consider basing future legislation on the emergency management cycle, with clear responsibilities for Ministries, Governors and relevant agencies to collaborate at every stage.
- **R28:** Future legislation could include recognition of a wider range of incidents experienced by the public as 'disasters', and could include the impacts of manmade/malicious threats (industrial accidents, maritime, terrorism, malicious cyber activity, or major critical infrastructure disruption) alongside naturally-occurring hazards.
- **R29:** Consider exploring alternative approaches to the requisition of private property, which make best use of the capabilities and resources available across the private and public sectors in the modern Tunisian context.
- **R30:** Consider the formulation of a cross-governmental working group to agree the necessary elements of a new or updated emergency law, and to achieve maximum benefits from any changes made.

4.1.3 Flexibility

It was the peer review team's observation that the Tunisian emergency management system is based on a clear sense of ownership at the national and regional levels. Governors have a mandate to prepare for any natural hazard emergency that occurs in their area; at the national tier, there are clear divisions between Ministerial and Departmental owners of the main risks considered as part of this review.

This delineation of ownership of risk scenarios has benefits, with agencies and Ministries avoiding duplication of disaster ownership. It also provides clarity about which organisation is responsible for which risk, or aspect of emergency management. It was apparent, however, that this strong sense of division can discourage proactive collaboration and sharing of resources between some Ministries, agencies or Governorates where joint working might lead to a more efficient or effective outcome for disaster planning, response and recovery, and risk management.

Good practice:

- **G17:** There is a clear division of responsibility for differing aspects of emergency preparedness between Ministries and organisations.

Recommendation:

- **R31:** Consider how organisations at the national and regional levels might overcome divisions of responsibility, and seek to develop a more collaborative working culture, in order to understand risks and prepare for, respond to and recover from disasters.

4.1.4 Collaboration with stakeholders

The 1991 law allows Governors to include any relevant public or private sector organisations (or individuals) in civil protection activity, as required to address the risk. This is a pragmatic approach. It was not clear how consistently it is carried out across the different Governorates and in line with different risk profiles and organisations in different areas.

Whilst there are some barriers to cross-Ministry/organisational working (see section 3.13, Flexibility), an example of good practice can be found in the two set meetings of the national committee to review preparations in advance of the annual forest fire and flood seasons. Corresponding meetings are held in the relevant Governorates in advance of each season. These meetings help Governorates to interpret and understand the forecast, check plans and capacities and ensure that all stakeholders with a role to play in preparedness are aware of their responsibilities.

Good practice:

- **G18:** The cross-Ministry and regional-level preparatory meetings, held in advance of the flooding and forest fire seasons, are a good example of joint work to prepare for recognised, recurring risks.

Recommendation:

- **R32:** Consider how this model of good practice (biannual preparatory meetings for specific high risks) could be replicated for other recurring risk scenarios.
- **R33:** Consider how any future laws will preserve the ability of civil protection authorities to seek and include relevant expertise from the public and private sectors in civil protection activities.

4.1.5 Civil-military collaboration

The Tunisian military are represented on the national and regional commissions. This review focused primarily on civilian organisations, but references were made to the use of military capabilities for a number of specific risks. One example was for forest fires, with air force capabilities based at Bizerte (an area at risk) potentially on stand-by to assist civilian authorities in the event of a major fire.

Another example of collaboration with the military was discussed in the context of CBRN response capacity. This is defined as a cross-ministerial issue, where the initial response by civil protection resources can be augmented with military support if it is beyond civilian capacity to manage.

This approach is in alignment with other countries where firefighters (and other civilian responders) may call upon the armed forces to support CBRN response to a large or complex incident. Tunisia's industrial profile has expanded in recent years, so an increase in CBRN and hazard management capacity is proportionate and appropriate.

Good practice:

- **G19:** An established role for the military in partnership with civilian civil protection leads and recognition of the potential support available from military forces for a number of risks.

4.2 Early warning/hazard detection

4.2.1 Early Warning systems in place

Automated hazard detection and warning systems appear to be quite limited in Tunisia, although there are ambitions to install them (particularly for hydrological risks, such as major dams). Efforts to do this, to-date, have been limited by budget constraints and a lack of co-ordination across Ministries and agencies.

4.2.2 Dissemination

General warning messages about developing disaster situations are distributed to the public via media channels - typically television and radio. The regional Governor may ask media outlets to carry messages about the risk, or could choose to call a press conference to explain what is happening and encourage the population to take action. There is no requirement in the main law of 1991 to do so (see above).

There is no system through which the national or regional authorities can systematically warn significant local institutions such as schools, hospitals or large local employers that there may be a hazard approaching/occurring. This leaves relevant authorities unable to advise them to take actions that will protect people and their property, and maintain business continuity/operational capacity. This is also true of sites that might be adversely affected by an approaching risk (such as factories, companies, processing plants and hazardous sites).

It was not clear whether operators of hazardous sites, such as industrial plants, are routinely required to have the means to rapidly inform those nearby that they may be in danger and should take action. There is significant reliance on word-of-mouth dissemination of information across communities, and traditional knowledge of disaster impacts.

It may be worthwhile to consider a requirement for the installation of basic siren systems around sites deemed to be hazardous, particularly if they are close to densely populated areas.

There is no existing generic, all-risk public alerting system at either the national or regional levels in Tunisia. Several Tunisian colleagues mentioned a desire to see one developed, perhaps using an SMS-based system. Recent data suggests that 91% of adult Tunisians use a mobile telephone.[10]

10 WORLD BANK Voices and Views, Middle East and North Africa [online] The World Bank Group (02.08.2013) article accessed 25/11/18

The familiarity of the population with mobile technology and access to personal devices means that, in coming years, the general public may expect to receive notifications about approaching dangers in the same way as they receive push notifications from social media platforms or commercial/news applications. Such an alerting system would likely need to be operated at the national level to ensure proper use, in partnership with Governors and their civil protection resources, and with a strict set of protocols around thresholds for alerting.

Tunisia currently has several emergency numbers for different services, but no single emergency number. This could pose a problem for tourists and business travellers in case of emergency. A national emergence number could run in parallel to existing numbers.

Recommendations:

- **R34:** Consider the mandatory inclusion of basic warning sirens at hazardous sites (such as dams or industrial plants), particularly those situated near to high concentrations of people. Maintain existing sirens.
- **R35:** Consider the installation of monitoring/early warning systems at sites which could pose a risk to the public, such as dams, and ensure their funding.
- **R36:** Invest in training for the workforce of critical infrastructures on behaviour in crisis events, including how to assess and communicate the situation.
- **R37:** At Governorate or municipal level, consider the pre-identification of places where large numbers of people gather, or which have particular significance to the local economy or local infrastructure. Develop a protocol for targeted, rapid warning of approaching hazards so that owners/operators can take appropriate actions to protect people and property, and maintain business continuity.
- **R38:** Consider the development of a national emergency alerting system that takes advantage of high levels of mobile telephone usage, considering how it could be used in disaster situations and for risk education/prevention campaigns (see further below).
- **R39:** Explore the creation of a single national emergency call system (112). Further invest in emergency call centres and explore cell broadcasts.

4.3 Capability analysis and planning

There is clear evidence of the use of contemporary experience and historical evidence to identify future emergency response needs (e.g. the projected number of rescue units required in specific areas). Particular focus is currently being put on training to deal with CBRN incidents, and the positioning of specialist response units in different areas of Tunisia based on need and the local demographic.

4.4 Training and exercises

4.4.1 Training and exercises (national)

The Tunisian DRM structure has a clear system of 'white' plans, which practice exercising crisis response plans. Examples discussed during the peer review visit included the regular exercising of forest fire fighting plans in the month of May each year in advance of the forest fire season, and in response to the inspection process carried out each year to understand which areas are likely to be at highest risk.

Tunisia is currently working towards International Search and Rescue Advisory Group (INSARAG) classification for a Medium Urban Search and Rescue module. They aim to complete the classification process by early 2021. Although this is an international standard, it is primarily intended for use as a framework to guide the development of Tunisian national capability. This is an interesting and pragmatic approach, with dual benefits for Tunisia's domestic capability and the capacity to contribute to international response in years to come.

Good practices:

- **G20:** Clear recognition across different organisations (and risk owners) of the importance of testing and exercising plans, command structures and equipment.
- **G21:** Pragmatic use of a recognised international training standard (INSARAG) to enhance national capability and develop international capability simultaneously.

4.4.2 EU CPM modules and expert capabilities

Tunisian experts are increasingly participating in the UCPM training programme. This provides a valuable opportunity for Tunisian civil protection experts to work alongside their international peers. It also gives Tunisian experts insight into a variety of national approaches to civil protection, and demonstrates the emergency response capacity available through the EU mechanism.

Tunisia does not currently operate civil protection modules in the EU style, although there is recognition of the benefits of this and a long-term ambition to do so. The ONCP is currently working with the German Technical Relief Organisation (THW) to train mixed professional and voluntary teams to operate 10 high capacity pumps, which will be distributed to a number of areas at risk of flooding.

Recommendations:

- **R40:** Continue to nominate Tunisian civil protection experts and trainers to participate in the EU-CPM training programme.
- **R41:** Enhance training for existing tools, such as Copernicus[11] or EFFIS[12].

11 ***Copernicus*** is the EU's Earth Observation Programme.

12 European Forest Fire Information System (EFFIS)

4.5 International collaboration

Since 2011, Tunisia has proactively sought opportunities for international collaboration beyond its immediate neighbours. There is bilateral cooperation with France on a range of projects. Germany has been working with the Tunisian authorities through the Federal Office of Civil Protection and Disaster Assistance (BBK) and THW since 2012. Their focus has been on the field of crisis management and building voluntary responder capacity, in terms of both human resources and access to equipment.

4.5.1 Regional collaboration

Tunisia has established an initial partnership with neighbouring Algeria, focused particularly on flood management and early warning around the major dams near national borders. There is a desire to make this partnership more operational and to extend it to forest fires, as the two countries share a border to the west of Tunisia, which includes forest fire zones. Conversations with Tunisian colleagues indicate a shared desire to achieve a greater degree of collaboration with Algeria, whilst recognising that the Tunisian and Algerian national approaches to emergency response differ in degrees of overall centralisation at the national level. This would influence any working arrangements agreed.

Recommendation:

- **R42:** Pursue greater collaboration, where possible, with Algeria in all aspects of the disaster management cycle, including harmonisation efforts and Standard Operating Procedures. Flood management, forest fires and early warning are key priorities.

4.5.2 International planning

Tunisia does not have significant experience of requesting or hosting international assistance, or of collaboration via co-ordination platforms such as the Common Emergency Communication and Information System (CECIS), operated by the EU Emergency Response Co-ordination Centre (ERCC), or the UN-Virtual On-Site Operations Co-ordination Centre (VOSOCC)[13].

The current legal framework in Tunisia does not include provisions for requesting, receiving or integrating international support, nor for in-kind assistance and specialist operational modules. Although the Ministry of the Interior leads in civil protection matters via the ONCP, any request for international assistance in emergencies must be addressed via the Ministry for Foreign Affairs, requiring co-ordination between the Ministries.

Tunisian Host Nation Support (HNS) arrangements for incoming teams are due to be enhanced through the Increasing Preparedness Capacities Across the Mediterranean (IPCAM) project, and should be consolidated.

13 The Virtual OSOCC (VOSOCC) is a real-time online co-ordination platform that allows information exchange early in an emergency. Specific features of the VOSOCC allow responders to exchange information such as baseline country information (including relevant socio-economic and demographic information), entry points and other logistical aspects, relief team status, assessment information, cluster activities, civil-military co-ordination arrangements, environmental risks and security.

Although all national governments should invest time and resources to develop self-sufficiency in risk identification, management and disaster preparedness, a pre-identified system for rapidly requesting expert help from neighbouring countries or from the global emergency response community is a very valuable element in contributing to the overall resilience of the country. Part of the process of establishing this is to identify how requests for assistance will be made, but this is accompanied by a need to understand how arriving resources will be integrated into domestic efforts and how incoming support will be distributed. In the case of specialist modules, there is also a need for support to be provided by the host nation during their deployment in-country.

Recommendations:

- **R43:** Strengthen national capabilities in rapidly requesting and integrating international assistance in the event of a disaster which overwhelms, or threatens to overwhelm, regional and national disaster response capabilities.
- **R44:** As part of familiarisation with international systems, consider training relevant officials in the use of information sharing platforms, such as the VOSOCC, and communication with the EU ERCC. Make use of international/EU guidelines on Host Nation Support (HNS) and the interaction of disaster response teams during an international response.

4.5.3 Collaboration with International Organisations and partners

Tunisia is an active member state of the International Civil Defence Organisation (ICDO) and meets with other ICDO member states on a regular basis.

Tunisia has collaborated extensively with international partners in the field of preparedness since 2014. The IPCAM projects (phases 1 and 2), funded by DG ECHO, provided a platform to intensify and strengthen working relations, co-operation, transfer of knowledge and good practice in the field of preparedness at the cross-border and regional levels. Within the Prevention, Preparedness and Response to Disasters (PPRD) (South) programme, Tunisia received training and pursued an exchange of experts.

The practical results of internationally supported DRM projects, conducted at a local level, have the potential to disseminate considerable benefits across Tunisia[14].

The Administrative Arrangement between DG ECHO - European Commission and the National Office for Civil Protection of Tunisia was signed in March 2018. It provides access to training for experts in Tunisia, sets up joint emergency response plans and also provides access to the EU's Copernicus satellite system.

14 See, for example, on-going projects financed by DG ECHO and implemented by the United Nation Development Program (UNDP) to support two municipalities Ain Draham, and Tataouine and the project implemented by Expertise France in support of the municipalities of Boussalem and Tataouine.

4.6 Public awareness

4.6.1 Public awareness strategy

4.6.1.1 Education and Awareness Strategy

There is recognition by Tunisian colleagues working within civil protection and in Ministries that more could be done to educate the public systematically about risk. There is also recognition of the need to encourage a greater risk awareness and prevention culture in Tunisia more generally. Some place-based risk education projects have been carried out, in partnership with the UNDP and UNISDR programmes, in urban areas which are at risk of natural and industrial hazards. These were, however, small-scale and had limited funding.

On a number of occasions the peer team observed a significant reliance on local memory to provide the population of an area with risk awareness. Some of the colleagues interviewed expressed the expectation that the local population would naturally be aware of local risks, because of direct experience of them. This approach is not aligned with the trend of urbanisation noted by UNDP colleagues and some regional Governors, who observed that people moving from rural areas to urban centres do not know what the risks will be, and may inadvertently put themselves or others at risk. Strong local memory does not necessarily encourage preventative action, particularly in places where there might be a transient population (tourists, migrant workers, nomadic communities) or where a culture of community-led action is limited. Proactive and sustained engagement by the authorities may be needed to achieve better local awareness and encourage preventative action in areas at risk.

One successful example of engagement with a place-based community is in the fight against forest fires, where the authorities have pursued a more partnership centred approach to working with forest-dwelling communities. The main responsibility and authority in forest fire prevention and response remains with the authorities, but changes to the national forest code have given people living and working within forests greater rights to use the natural resources of the forest for personal and commercial purposes. This grants those communities a greater sense of shared ownership, and encourages them to see government authorities as an ally in protecting their homes and sources of income.

An interesting discussion took place about the potential inclusion of a clear mandate to do more to educate the public in a revised national law. This would be valuable, but would require agreement from a range of stakeholders to ensure its inclusion, as per the recommendation above (section 3.1.2). It was not clear whether the public are told that seasonal meetings regarding common environmental risks (such as forest fires and flooding) are taking place, but they could be, as part of a broader public communication strategy to facilitate public awareness, demonstrate positive preparatory activity by the authorities and encourage greater participation in volunteering schemes (particularly for forest fire fighting).

Good practice:

- **G22:** Forest communities are incentivised by the link between risk and threat to their homes and livelihoods made clear and recognised in law, encouraging a sense of partnership and shared responsibility for DRM.

Recommendations:

- **R45:** Consider how the populations in places at risk of hazards can be more systematically engaged and informed about risk.
- **R46:** Consider how the principle of engaging and incentivising the public to be-have in a more risk-conscious way could be achieved for risks beyond for-est fires, by emphasising mutual benefits rather than focusing on penalties and discouraging public behaviours which exacerbate existing risk.

4.6.2 Crisis communication system

4.6.2.1 Emergency Communications and the role of the media

The main conduit for information to the public is via the main media channels, but this is primarily in the context of emergency response, not risk management.

It is positive to see that there is a strong link between the authorities and the media sector, but there may be too much reliance on traditional broadcast media and particular TV channels, such as the national nightly news bulletin at 20:00hrs. It may be worthwhile investing time in building a broader relationship with the media and appointing communications leads within the ONPC and key Ministries, who can work in partnership to promote a common message about risk and the link to public safety, local economics and the need for social responsibility.

Some of the Tunisian colleagues we met during the peer review demonstrated a strong grasp of the opportunities offered by using social media platforms to communicate with the population, particularly to encourage volunteering.

Tunisia is a literate society and web-based social networks are popular, particularly amongst the young, with an estimated 83% of Tunisia's 3.4 million Facebook users being under 35 years of age.[15] This receptiveness amongst younger citizens to technology, and use of personal devices to access information online, offers a significant opportunity to national planners.

Technology-based communication campaigns could be used to; encourage a stronger culture of risk awareness; encourage risk management behaviours by the public (such as extinguishing cigarettes properly in areas vulnerable to forest fires) and to highlight positive examples of community resilience and risk prevention activity in different areas of the country. A national campaign could be co-ordinated by the regional commissions under the Governors (perhaps by using the capabilities of young people who have joined volunteering associations), and can offer support in risk management and emergency preparedness, as well as emergency response.

As well as offering an opportunity, it is likely that direct communication by the authorities on matters of public safety will come to be routinely expected. Tunisian colleagues noted in conversation with the peer team that, in the post-revolutionary era, the public now expect greater, more transparent communication from the authorities. Possibilities for local cell broadcasting during emergencies could be explored.

15 WAMDA 12 key statistics on how Tunisians use social media (28.04.2013) https://www.wamda.com/2013/04/12-key-statistics-on-how-tunisians-use-social-media-infographic, last accessed 25/11/18

Good practices:

- **G23:** Partnerships with the media and recognition of changed social attitudes and the need to meet changing public expectations, post-revolution.
- **G24:** Recognition of the potential offered by social media and other non-traditional media platforms as a way to reach the population, particularly the youth.

Recommendations:

- **R47:** Consider how communications leads from the ONPC and key partner Minis-tries could work in partnership more frequently to promote common mes-sages about risk and the link to public safety, local economics and the need for social responsibility.
- **R48:** Consider how social-media literate Tunisian citizens might offer support in achieving a consistent social media presence across the country in risk awareness and for emergency preparedness activities, as well as in emergency response. A pro-active monitoring of activities on social networks could also contribute to an increased situational awareness for the authorities.

4.6.3 DRM integrated into school curricula, education material and relevant training

4.6.3.1 Capacity building strategy

One of the guiding principles advocated in the Sendai Framework for Disaster Risk Reduction (2015 - 2030) is that 'it is necessary to empower local authorities and local communities'.[16] Communities who understand the risks they face can be incentivised and motivated to take action, both in risk management activities and, when emergencies occur, in response. This has the dual benefit of strengthening public safety and, in many cases, aiding responder efforts during response to and recovery from an emergency. Law No 91-39 of 8 June 1991, on combating and preventing disasters, and organising rescue services, does not recognise the community as a partner in public safety. It is very 'top-down', focusing entirely on the activities of Ministers and Governors. This has influenced the development of Tunisian national systems, and limits recognition of communities as being actors and partners in resilience in their own right. There is only limited authority and budget at municipal level for capacity building. The pilot projects, which were carried out in a number of urban areas (see above), recognised this, and there is a clear recognition by officials within the Ministry for the Environment and Sustainable Development that strengthening the capability of Town Halls would have benefits for public risk awareness and local preparedness. It may be beneficial to work with regional Governors to discuss how the municipal (and lower) levels could be brought into DRM partnerships more frequently.

More positively, considerable work is being done by the ONPC in the field of recruiting, training and retaining volunteers. This is following a change in official attitudes towards NGOs and volunteering after the revolution. There are volunteering associations in 18 of the 24 Governorates, with volunteers trained in first aid, firefighting and rescue skills (voluntary activity is primarily focused on training for emergency response, reflecting the overall national focus on response readiness, rather than risk management).

16 Sendai Framework for Disaster Risk Reduction (2015-2030) Section III 'Guiding Principles' (para 19 (d)

This work has been carried out with international partners, particularly Germany's BBK and THW agencies. Tunisian colleagues noted that volunteering is viewed positively by the public; the majority of those who volunteer for civil protection training are between 20-30 years old and do so out of a sense of civic responsibility, and because it may help to improve their future employment prospects. Notably, 40% of the volunteers are female, with women encouraged to join and perform a variety of professional and general roles. Many of the volunteer associations and their members are active on social media, which positively highlights their work and that of civil protection.

Tunisian colleagues noted that there is a desire to make better use of the professional skills brought by civil protection volunteers in risk management and capacity building, as well as in response.

Good practice:

- **G25:** A strong, well-developed system of civil protection volunteering has been established in Tunisia, with support and commitment from national authorities. This could provide a good foundation for future capacity-building work with communities.

Recommendations:

- **R49:** Consider how regional civil protection structures (reflecting Law No 91-39) might be used as a conduit to encourage greater capacity at the municipal level, within existing budgetary constraints.
- **R50:** Consider how to extend coverage of the volunteering associations to all Governorates, and how to make best use of the skills that volunteers bring from their personal and professional lives.

4.6.3.2 School curricula, higher education and scientific research

Risk education is not yet part of the official programme established by the Ministry of Education. The development of risk education and the dissemination of a culture of prevention in the school environment requires the strengthening of the network of trainers, especially at the regional and local levels.

In recent years, DRR modules have been introduced to many academic institutions. Some training courses are established at the Master's level (e.g. the Professional Master's degree in Geohazards at the Faculty of Sciences, Bizerte, and the Master's in Research at the Faculty of Sciences, Tunis).

In terms of scientific research, DRR does not benefit from specific programmes. The research conducted, by sector, does not cover all risks proven in Tunisia. The definition of its content is often left to the assessment of the research institution, which does not have a sufficient DRR budget. Research on risk management is conducted either in official organisations, such as the National Institute of Meteorology, or in institutions like Universities. This research is more oriented towards study and knowledge of the hazards. It is, occasionally, focused solely on vulnerability and resilience as factors involved in risk analysis.

An effort still needs to be made to raise awareness among national bodies that are in charge of national scientific research policy. This effort calls for all the research departments of the different Ministries.

Recommendation:

- **R51:** Consider the establishment of a DRR National Research Programme, acces-sible by all Ministries and aligned to a national platform for DRM.

4.7 Administrative, financial and technical aspects

4.7.1 Expertise

The ONPC takes steps to ensure that there are sufficient officers available to deliver the functions of the organisation, consider what might be needed in the future and use data gathered from incidents to create an evidence-based projection of requirements. The national civil protection training facility in Tunis has been significantly developed in recent years, in conjunction with a range of international partners. The capacity now available at the school has led to Tunisia being able to offer international training courses and seminars to other Arab and African countries, specialising in specific aspects of emergency management (such as disaster communication), alongside more traditional training in firefighting and rescue skills. This training capacity is a key asset and should be further developed.

4.7.2 Stakeholders

The focus of many of the Tunisian officials and volunteers we met during the peer review visit was primarily on readiness for response. Although there were indications that engagement of wider stakeholder groups does take place, it is not consistent across organisations and risks.

Recommendation:

- **R52:** Consider how the knowledge and experience of local communities, volunteers, private sector organisations and experts from industry might be more involved in planning for emergencies and for risk management.

4.7.3 Financing

A general theme emerging across the variety of stakeholders participating in the peer review process was the need to make best use of the limited budgets and resources available. The ongoing financial hardships faced by Tunisia mean that sustained support from international partners will be needed in order to deliver many of the plans and ambitions of Tunisian civil protection professionals and their colleagues at Ministry-level.

Recommendation:

- **R53:** Consider how dedicated funding for resilience measures across the disaster management cycle may be found and provided to the range of Ministries, Governorates and agencies working on elements of DRM.

4.7.4 Information and communication

Another theme, which emerged throughout the peer review interviews, was that of limitations to information-sharing and truly collaborative working practices between Ministries, departments and agencies. Important work to understand risk is being carried out through studies and projects on an individual organisational basis, but co-ordination of those projects is limited, meaning that opportunities to align objectives are missed and the results of surveys and findings of reports cannot be fully exploited.

There is an opportunity for much greater co-ordination at the national-level, perhaps through a more centralised national platform for DRR and management. A platform (or unit) of this type could be dedicated to this work and could bring together key personnel from across Ministries, agencies and organisations to share information in their areas of expertise, make decisions collectively and agree shared approaches to risk management.

At the centre of this is the need for a common, national, 'all-hazards' risk assessment, which is contributed to by all Ministries and departments. This would be used by all those with a role in understanding risk and preparing for emergencies as a common guidance tool.

Recommendation:

- **R54:** Consider the creation of a dedicated permanent unit or platform, which brings together representatives of all Ministries and organisations with an interest in disaster management or risk assessment, encouraging a more cohesive way of working across the disaster management cycle.
- **R55:** Consider how the commissioning, delivery and use of research studies and projects by different Ministries, departments and agencies might be centrally co-ordinated, perhaps by a dedicated national platform or unit, to agree objectives and achieve maximum effectiveness for multiple stakeholders.

4.7.5 Equipment

Tunisia has received significant support from international partners in recent years, including equipment for use in emergency response. One preparedness project, which has seen investment by the ONPC, supported by France, is Project IDRISSI (2014) on Geographic Information Systems. ONPC GIS capability has been extended to every Governorate, and an agreement is in place for the sharing of data between Ministries. Not all Ministries have provided their base layer data, however, and engagement is not always consistent.

The addition of GIS capability at both the national and regional level is very positive. It offers significant opportunities in understanding the impacts of climate change on the landscape, and of the risk profile across the country and wider geographical area. Tunisian colleagues underlined that incident information is used by ONPC to predict future needs, calculating the need for more equipment and human resourcing.

4.7.6 Infrastructure

The facilities to carry out crisis management and prepare emergency plans vary between organisations and regions. A recurring factor observed by the peer review team was a heavy reliance on personal mobile telephones, and the use of fax machines. Mobile telephones are useful and practical, but it may be worthwhile to consider a more resilient system, in case of loss of service.

Recommendation:

- **R56:** Consider how infrastructure resilience might be improved, particularly in the field of communication, to overcome the current reliance on mobile telephones and facsimiles.

5. Summary of good practices and recommendations

This chapter provides an overall summary of all good practices and recommendations mentioned in the report. Some good practices and recommendations of a similar nature emerged on several topics of the report and were therefore grouped together to provide the general findings of the peer review. The detailed good practices and recommendations can be found in the chapters above. The order of the items does not reflect their importance.

5.1 Good practices

1. Tunisia has recognised the need for a comprehensive DRR strategy and is working towards that end. The draft strategy, in line with the Sendai framework, follows an all-hazard approach, is inclusive and introduces a system of setting objectives, indicators and evaluation. It was developed through a series of consultations with all sector ministries, as well as a diverse representation of local authorities and public/private sector stakeholders. (G1, G2, G3, G5, G7, G16)
2. While Tunisia has previously followed a DRM approach based mainly on response, prevention and climate change adaption now play an increasingly important role. (G2, G6, G7, G8)
3. The need to modernise and update legislation, placing more of an emphasis on collaboration, to deal with the changing nature of crises has been recognised. The new draft DRR strategy, as well as a shift towards prevention, can deliver valuable input. (G2, G16)
4. Roles and responsibilities are well defined within risk management planning and civil protection in general, including ministries, organisations, military and the private sector. (G4, G15, G17, G19)
5. Tunisia has well developed risk assessment procedures. The comprehensive SNACR assesses the adequacy of intervention resources and resources for the coverage of these risks, and proposes solutions for their optimisation. It allows movement from a logic of means to a logic of results, and achievement of the organisation's performance objectives. (G8, G9, G10, G14)
6. There are good examples of joint working and collaboration to prepare for recognised, recurring risks, such as the cross-Ministry and regional-level preparatory meetings held in advance of the flooding and forest fire seasons. (G3, G18)
7. Training and education during the preparedness phase are very important in Tunisia. The ENPC delivers a high standard of education and training for civil protection. Both National and Regional Commissions receive regular trainings, as do political decision makers. Required skills and training needs are assessed through the SNACR. This enhances the country's capabilities in dealing with crises. (G9, G11, G12, G20, G21)

8. Volunteering plays an important role for crisis management in Tunisia. In the future, they could contribute to preparing for and responding to emergencies by supporting statutory agencies. The development of voluntary civil protection associations helps to include civil society in the process of risk assessment and risk management planning. The gender balance reached in the Tunisian voluntary associations is exemplary (approximately 40 % female). (G13, G25)
9. Community involvement in preventing and preparing for crises has gained more importance. Forest communities are incentivised by the link between risk and the threat to their homes and livelihoods, made clear and recognised in law. This encourages a sense of partnership and shared responsibility for DRM. The use of (social) media has also been given more thought. (G13, G14, G22, G23, G24)

5.2 Recommendations

1. Conduct a legislative review of the DRM system, and consider a unified legal framework with clear responsibilities that cover all DRM functions, such as prevention, mitigation, preparedness, response and recovery. The legislative review and update should take into consideration the inclusion of the private sector, civil society, and academia into the disaster management system. (R1, R2, R5, R8, R13, R18, R26, R27, R28, R29, R30, R33, R54)
2. In general, cooperation between all relevant actors needs to be enhanced. Efforts to overcome institutional/sectoral barriers in order to facilitate the exchange of knowledge, experiences and information on sustainable development, climate change adaptation and all aspects of DRM should be continued and strengthened. (R2, R3, R7, R8, R9, R12, R13, R17, R18, R19, R20, R26, R27, R30, R31, R32, R47, R52, R54, R55)
3. Ensure coherence of DRM by involving all relevant authorities, and establish DRM as a crosscutting task. Consider the creation of a dedicated permanent unit or platform which brings together representatives of all Ministries and organisations with an interest in disaster management or risk assessment. This would encourage a more cohesive way of working across the disaster management cycle. (R2, R7, R8, R9, R13, R26, R27, R28, R30, R31, R32, R33, R54)
4. Ensure the approval of the DRR strategy and a national platform for DRR, and start the implementation of the strategy. (R1, R4, R8, R13)
5. Continue efforts to strengthen prevention and preparedness activities and resilience, as well as climate change adaptation and mitigation. (R7, R8, R9, R18, R19, R24, R26, R27, R53, R56)
6. Ensure proper funding for all relevant actors, and efficient use of funds at all levels, e.g. through sharing of tools and knowledge between different stakeholders. (R16, R17, R49, R53)
7. A more systematic approach is needed in order to utilise and understand data gathered and lessons learned as an input to update the existing plans. This could be the driving force to promote new policies and update legislation where necessary. (R5, R11, R32, R52, R55)
8. The decentralisation process taking place at the moment can be used to strengthen the role of regional directorates in DRM, for example by reinforcing operational rooms at local/ regional level as appropriate', enhancing emergency planning, and reviewing whether sufficient resources are allocated to emergency health services. (R10, R26, R37, R49, R52)

9. Public education and awareness raising efforts should be intensified, also making use of (social) media, targeting all population groups throughout the country, but especially communities most at risk (socio-economically and geographically). (R14, R15, R22, R38, R39, R45, R46, R47, R48)
10. Further invest in enhanced risk communication and dedicated DRM research, especially taking into account the changing risk landscape. Consider new methods of communication, such as a national emergency number and cell broadcasts. (R14, R15, R22, R23, R24, R38, R39, R45, R46, R47, R48, R51, R55)
11. Further invest in early warning and monitoring systems, especially near critical infrastructure, making best use of cooperation and synergies with other organisations, the public and the private sector. (R34, R35, R36, R52)
12. Explore the use of (social) media for risk communication, awareness raising, public education and situational awareness. Ensure all relevant actors receive training on communicating via the media. (R14, R25, R39, R45, R46, R47, R48)
13. Facilitate the implementation of the Sendai framework through the creation of a monitoring system to assess the implementation across different sectors and to share best practices. (R9, R19)
14. Continue to invest in training and exercises, not only for crisis management professionals, but also for decision makers and commissions on regional and national levels. Strengthen training regarding international and EU cooperation, e.g. requesting aid through the UCMP, communication with the EU ERCC and use of tools such as Copernicus. (R11, R20, R41, R44)
15. Build on the existing system of volunteerism in crisis management and invest in building up a comprehensive network of voluntary associations to assist civil protection efforts. (R21, R50, R52)
16. Pursue greater collaboration where possible with Algeria, and the region in general, in all aspects of the disaster management cycle. (R6, R12, R42)
17. Strengthen international cooperation and deepen cooperation with the EU; disseminate across Tunisia the practical results of DRM projects conducted at local level. (R40, R41, R42, R44)
18. Strengthen national capability to rapidly request and efficiently use international assistance in the event of a disaster that overwhelms, or threatens to overwhelm, regional and national disaster response capabilities. (R43, R44)

Annex I – Documentation provided during the review

Al Hadid, Rad (2018): IFRC Disaster Response and Preparedness. Présentation. Tunis.

Ammar, Elyess (2018): La région de Bizerte : Direction de la Protection des Prestations Sanitaires de Bizerte. Présentation. Bizerte.

Aounallah, Farhut (2018): Les Catastrophes naturelles en Tunisie. Présentation. Tunis.

Arab, Ridah (2018): La protection civile et la gestion des catastrophes. Présentation. Tunis.

Ataknit, Mohammed (2018): École Nationale de la Protection Civile. Présentation. Tunis.

Barroux, Christian (2018): Renforcement des capacités de la Protection Civile Tunisienne (RPCT) 2017-2019. Présentation. Tunis.

Belkhouja, Abdessatar (2018): Mesures préventives pour protéger les forêts contre les incendies pendant la saison 2018. Présentation. Bizerte.

Belli, Hazar (2018): La RRCen Tunisie : Défis et réalisations au niveau national et locale. Présentation. Tunis.

Ben Abdallah, Samir (2018): Les Missions et les Principales Activités de la Direction de la Géophysique et de l'Astronomie. Présentation. Tunis.

Ben Ali, Khemais (2018): Direction régional de Bizerte. Présentation. Bizerte.

Ben Hammed, Zied (2018): Objectif général du plateau technique. Présentation. Tunis.

Ben Kalifa, Moez (2018): Coopération Tuniso-Allemande ONPC/THW. Présentation. Tunis.

Ben Kalifa, Moez (2018): Instillation du volontariat en Tunisie, Présentation. Tunis.

Ben Naceur, Kais (2018): Coopération Tuniso-Allemande ONPC/BBK. Présentation. Tunis.

Dabbouni, Marouene (2018): Système de stockage, de gestion et d'exploitation des barrages. Présentation. Tunis.

Dachraoui, Moez (2018): Opening Speech for the Peer Review Program. Tunis.

Douzi, Wahid (2018): La protection civile face aux risques technologiques NRBC-E. Présentation. Tunis.

En Salem, Zouheir (2018): Les feux de forêt en Tunisie – problématique et perspectives sommaires. Présentation. Tunis.

Grami, Fadhel (2018): L'institut national de la météorologie – missions et objectifs. Présentation. Tunis.

Hamdi, Wissem (2018): La certification internationale INSARAG d'un module M-USAR de la protection civile tunisienne. Présentation. Tunis.

Khelifa, Sarhane (2018): Coopération tuniso- française – Fond de solidarité prioritaire. Présentation. Tunis.

Khoubayb, Amari (2018): Projet de contrôle des inondations de la Medjerda. Présentation. Tunis.

Korbi, Salah (2018): La salle opérationnelle centrale. Présentation. Tunis.

Korbi, Salah (2018): Schéma National d'Analyse et de Couverture des Risques. Présentation. Tunis.

Noomane, Hamza (2018): Système d'Information Géographique IDRISSI. Présentation. Tunis.

Omri, Ziad (2018): The civil protection and disaster management. Presentation. Brussels.

ONPC (2017): Schéma National d'Analyse et de Couverture des Risques 2017 – 2021. Présentation. Tunis.

Oussama, Ayadi ; Amor Adel, Beni (2018): La gestion de crise et de catastrophe à Jendouba. Présentation. Jendouba.

Riabi, Mounir ; Oussama, Ayadi (2018): Stratégie régionale de gestion de crise et de catastrophe à Jendouba. Présentation. Jendouba.

Sdiri, Ziad (2018): Arrangement administratif entre ONPC et DG ECHO. Présentation. Tunis.

Touil, Jihene (2018): Projet d'Appui au Renforcement des Capacités locale pour la Réduction des Risques de Catastrophes. Présentation. Tunis.

Triaa, Moez (2018): Projet IPCAM

Funded by
European Union
Civil Protection