



Report on Disaster Risk Reduction

2015-2018

NORTH AFRICA COUNTRIES

An Addendum to the Biennial Report on the Programme of Action for the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in Africa

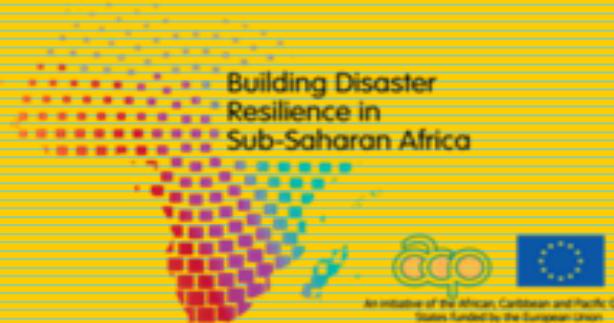


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ABBREVIATIONS & ACRONYMS

ARSDRR	Africa Regional Strategy for Disaster Risk Reduction
ASDRR	Arab Strategy for Disaster Risk Reduction
AU	Africa Union
CCA	Climate Change Adaptations
CRED	Centre for Research on the Epidemiology of disasters
DNRM	Algeria National Delegation for Major Risks
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EMDAT	OFDA/CRED International Disaster Database
GDP	Gross Domestic Product
LAS	League of Arab States
MRF	Monitoring and Reporting Framework
PoA	Programme of Action
PPP	Purchasing Power Parity
RECs	Regional Economic Communities
SFDRR	Sendai Framework for Disaster Risk Reduction
UMA	Arab Maghreb Union (Algeria, Libya, Mauritania, Morocco, Tunisia)
UNDP	United Nations Development Programme

EXECUTIVE SUMMARY

North Africa region comprises Algeria, Egypt, Libya, Mauritania, Morocco, Sahrawi Republic, and Tunisia. All the countries except Sahrawi Republic are members of the League of Arab States. All the North African countries are members of the African Union. Although, there is no coordinated development strategy within the entire region, countries have aligned their socio-economic development strategies with Africa Agenda 2063, the sustainable Development Goals (SDGs), the Sendai Framework for Disaster Risk Reduction, and the Paris agreement on climate change. In 2004, the North African countries and the other African Union member states, adopted the African Regional Strategy for Disaster Risk Reduction (ARSDRR) and its Program for Action. In 2010, except the Sahrawi Republic, the League of Arab States adopted the Arab Strategy for Disaster Risk Reduction (ASDRR). The Arab Strategy for Disaster Risk Reduction was first aligned to the African Regional Strategy for Disaster Risk Reduction (ARSDRR) and Hyogo Framework for Action (HFA) and then to Sendai Framework for Disaster Risk Reduction (SFDRR). In order to implement the Arab Strategy for Disaster Risk Reduction horizon 2030, UNDRR and the League of Arab States (LAS) developed a Programme of Action. The Arab Coordination Mechanism for Disaster Risk Reduction (ACMDRR) in 2018 meeting in Tunis (Tunisia) adopted the programme of Action. This programme of action proposes the implementation of the Arab Strategy in three phases. The first phase 2018-2020: focuses on assessment of risks, creating/strengthening national institutions and development of overall elements of the programme at regional and national levels. The second phase 2021-2025 covers the strengthening of institutions, developing and implementing Disaster Risk Reduction Programmes at national level and starting DRR implementation at selected local (sub-national) levels. The third Phase 2026-2030 covers the delivering on all areas especially strengthening investment, preparedness, response and recovery systems at national and local levels and building DRR systems at all local (city and community) levels.

The aim of this biennial report is to report on the implementation of the seven global targets of the Sendai Framework for Disaster Risk Reduction (SFDRR) and the additional five Africa-specific DRR targets, as outlined in the PoA, within the North Africa region. The seven SFDRR targets as contextualised for the African setting are:

- A. Substantially reduce continental disaster mortality by 2030, aiming to lower the average per 100,000 continental mortality rate in the decade 2020–2030 compared to the period 2005–2015;
- B. Substantially reduce the number of affected people continentally in Africa by 2030, aiming to lower the average continental figure per 100,000 in the decade 2020–2030 compared to the period 2005–2015;
- C. Reduce direct disaster economic loss in relation to continental gross domestic product (GDP) by 2030;

- D. Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030;
- E. Substantially increase the number of countries with national and sub-national/local disaster risk reduction strategies by 2020;
- F. Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement national actions for implementation of the Sendai Framework by 2030; and
- G. Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030.

In addition to achieving the above targets as set out in the Sendai Framework, African countries agreed to develop data by 2020 to measure progress in achieving the following additional targets:

1. Substantially increase the number of countries with DRR in their educational systems at all levels, as both stand-alone curriculum and integrated into different curricula;
2. Increase integration of DRR in regional and national sustainable development, and climate change adaptation frameworks, mechanisms and processes;
3. Substantially expand the scope and increase the number of sources for domestic financing in DRR;
4. Increase the number of countries with, and periodically testing, risk-informed preparedness plans, and, response, and post-disaster recovery and reconstruction mechanisms; and
5. Substantially increase the number of regional networks or partnerships for knowledge management and capacity development, including specialized regional centres and networks.

This is Africa's first biennial report since the adoption of the Sendai Framework and the PoA. The aim of the biennial report is to update on the implementation of the seven global SFDRR targets and the additional five Africa specific targets of the PoA within the North Africa region. Since objective of the study was to provide a report of Member States' and the North Africa region' progress against the targets of the SFDRR and the Africa PoA's additional five targets, the reporting had to also consider the four Priority Areas of the SFDRR as they relate to the various targets. This report is meant to cover all of the North Africa Member States.

The objectives of the report dictated the use of a mixed methods approach. Both qualitative and quantitative data were collected. Quantitative and qualitative data were collected on the targets of the SFDRR, and the PoA. Two surveys were developed and administered online during a regional workshop. In addition, existing databases and in particular the INFORM Index for Risk Management and International Disasters Database (EM-DAT) were used for baseline data.

The qualitative data was analysed and interpreted according to the various targets of the SDFRR and PoA. In all cases, the deeper meaning of the qualitative data was explored, and these reports appear as narratives linked to each Member State at the end of this report. For the purpose of comparison and showing progress against the targets, a North Africa PoA “dashboard” was developed. Thus, a quick reference is provided for Member States of their progress between 2015 and 2018. The indicators of the PoA’s 5 additional targets are linked to the 5-point Likert scale (with 1 representing “no achievement” and 5 representing “comprehensive achievement ”). The overall scores for each sub-indicator were aggregated to provide a final dashboard score for each country. The Likert score points were colour coded to allow for clarity in visual presentation, with red representing no achievement and green representing comprehensive achievement. A total 13 sub-indicators were used to reach the combined scores for 2015-2016 and 2017-2018 respectively. Thus, the closer a Member State moves towards obtaining five, the more progress it is making against the targets.

The data collected on PoA additional targets shows that four Member States (Algeria, Egypt, Morocco and Tunisia) have made progress against the additional Africa DRR targets. Mauritania, Libya and Sahrawi republic reported no additional progress over the two periods.

Disaster risk is related directly to the level of development of the country under consideration. As observed over time, the disaster risk profile is driven by the vulnerability, which can be assessed using some development indicators such as population size, GDP, Human Development Index and poverty line. Table 3 presents a breakdown of the above development indicators by North Africa Member States. These indicators illustrate the degree of vulnerability of the North Africa region.

The development indicators can have both positive and negative impact on the region’s ability to successfully implementing the SFDRR and PoA targets, the Agenda 2030 on Sustainable Development and the Paris Agreement on climate change. This is well reflected in Table 4 later in this report, which shows that the region has experienced, during the two periods 2015-2016 and 2017-2018, a clear increase in number of disasters, deaths, affected people and damage. During 2015-2016, one hundred and fifteen (115) disasters in North Africa region caused the deaths of 4,439 people, affected 843,902 and caused direct economic losses of over US\$ 81 million. During 2017-2018, two hundred and sixty one (261) disasters caused the deaths of more than 8,000 people, affected a total of 6,020,433 people mainly due to drought and transport-related hazards.

Despite the existence of national hydrological and meteorological services, monitoring mechanisms and early warning systems are not improving governments and people’s behaviour in the field. Absence of guidelines for collecting data, on documenting disasters and lack of formal collaboration frameworks between agencies responsible for generating warning and those in charge of prevention of disaster risk are a major challenge.

Key findings

The following are the highlights of findings of this report on the achievement of the SFDRR:

- ✚ **Sendai Target A: Reduce disaster mortality:** In the period 2015-2018 there is an increase in disaster mortalities in the North African region from 4,439 in 2015-2016 to 8,092 in 2017-2018 mostly due to transport-related hazards and floods.
- ✚ **Sendai Target B: Reduce the number of affected people:** For the period 2015 to 2018, there is was an increase from 843,902 affected people in 2015-2016 to 6,020,433 in the period 2017-2018 in North African. In total there has been a significant increase in the number of affected people, thus the region did not achieve target B.
- ✚ **Sendai Target C: Reduce direct disaster economic loss:** The North Africa region suffered more losses from US\$ 81.4 million in the first two years (2015-2016) to US\$ 562 million in the following two years (2017-2018). Thus, target C was not achieved.
- ✚ **Sendai Target D: Reduce disaster damage to critical infrastructure and disruption of basic services:** Member States experienced difficulties in reporting data on damage to critical infrastructure and the disruption of basic services. Comparison with the EM-DAT data shows that this specific indicator is significantly under-reported. Only Algeria reported detailed data.
- ✚ **Sendai Target E: Increase the number of countries with DRR strategies:** Except Libya and Sahrawi republic, all the other Member States have made significant progress in developing, updating, adopting or validating their respective strategies, promulgating laws and revisiting existing plans, strategies and legislation. Only Egypt is implementing the national DRR strategy.
- ✚ **Sendai Target F: Increase international cooperation to developing countries:** All the countries have developed (Exception to Libya and Sahrawi Republic) have developed international cooperation well before 2016 and still going on. Most of the countries have achieved this target F.
- ✚ **Sendai Target G: Increase the availability of and access to multi-hazard early warning systems:** Data from countries is scarce and not detailed. Countries such as Algeria, Egypt, Morocco and Tunisia have a single early warning system either to hydro-meteorological hazards or earthquake risk.
- ✚ **PoA Additional Target 1: Increase the number of countries with DRR in their educational systems at all levels:** Tunisia has made a good progress in integrating DRR in education system curricula. Algeria, Mauritania and Morocco integrated DRR in the primary education level and thus made little progress in this target 1. Libya and Sahrawi republic did not provide any data.
- ✚ **PoA Additional Target 2: Increase integration of DRR in regional and national sustainable development, and climate change adaptation frameworks, mechanisms and processes:** All the North African countries, except Libya and Sahrawi republic with no data) have made progress in the last four-year period as they have adopted a National climate plan to deal with climate in all its aspects. This target 2 is achieved for these countries.

- ✚ **PoA Additional Target 3: Expand the scope and increase the number of sources for domestic financing in DRR:** Most of the Member States did not report on the number of sources for domestic financing in DRR. Except for Algeria, most of the sources for domestic financing in DRR are covered by the Algerian Government. The reason being that this data is not readily available and a single figure for some countries is not possible at this level of knowledge and practice. The multi-sectoral practice of DRR programmes also makes it very complex task to arrive at one single figure with a certain level of accuracy and reliability at national level. Normally, the DRR financing of DRR activities are incorporated in the development projects.
- ✚ **PoA Additional Target 4: Increase the number of countries with, and periodically testing, risk-informed preparedness plans, response and post-disaster recovery and reconstruction mechanisms:** In the North African region, Algeria, Morocco and Tunisia have made a good progress in risk-informed preparedness planning by updating their contingency planning and conducting periodic test. However, some of the Member States as Mauritania, Libya and Sahrawi republic have not mentioned any progress over the last four years. Algeria shows the most progress from 2015-2018.
- ✚ **PoA Additional Target 5: Increase the number of regional networks and partnerships for knowledge management and capacity development:** Except Algeria which mentioned the Periperi U network, a consortium of 12 African universities working for advancing Disaster Risk Sciences, the other countries did not report any data.

From this North Africa regional report, recommendations are made according to the data provided and findings as follows:

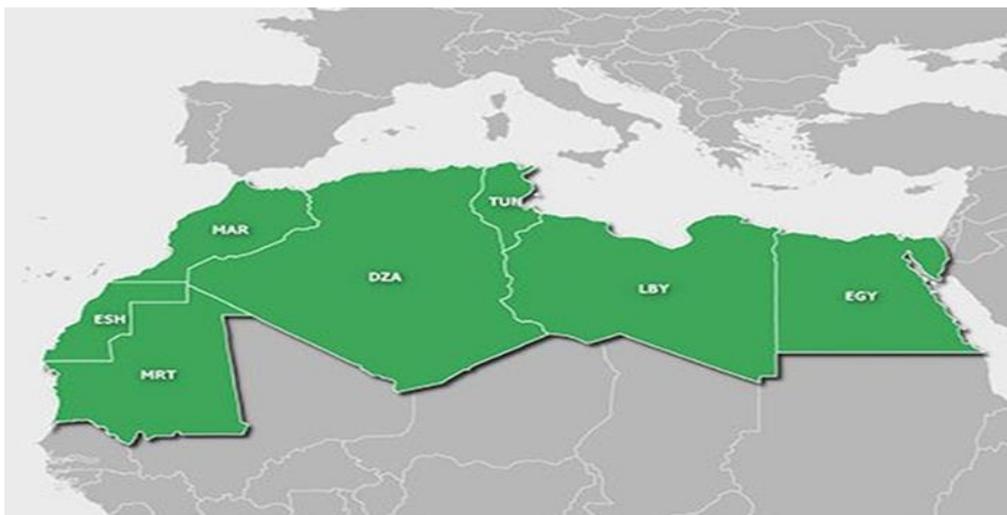
- ✚ Scientists should be more involved in DRR in North Africa countries
- ✚ Need of capacity building for DRR knowledge of the practitioners,
- ✚ Needs assessment on disaster loss data collection for a better design of a capacity building in the subject.
- ✚ A national DRR database should be established where all the DRR information must be collected and validated in a continuous way which will make national data available when needed,
- ✚ Collect disaggregated data on gender, age, children, abilities and vulnerable groups.
- ✚ Update the skills and expertise for the staff in charge of DRR in the countries 'administrations
- ✚ Significant support is needed for national DRR structures to report on losses and DRR funding
- ✚ North African countries should establish a joint plan of action for the region
- ✚ North African countries should convene regular face to face meetings for a better and effective cooperation.
- ✚ Scientists and policy-makers should work together for better DRR solutions.
- ✚ Strengthening of human and material resources

- ✚ Obligation to organize drills at all levels
- ✚ Mission and responsibility updates, upgrading of national capacities at different levels
- ✚ Regularly updating of contingency plans and their digitization,

INTRODUCTION

North Africa region comprises Algeria, Egypt, Libya, Mauritania, Morocco, Sahrawi Republic, and Tunisia. They are members of the League of Arab States, except the Sahrawi Republic. All the North African countries are members of the African Union. Although, there is no coordinated development strategy within the entire region, countries have aligned their socio-economic development strategies with Africa Agenda 2063, the sustainable Development Goals (SDGs), the Sendai Framework for Disaster Risk Reduction, and the Paris agreement on climate change. In 2004, the North African countries and the other African Union member states, adopted the African Regional Strategy for Disaster Risk Reduction (ARSDRR) and its Program for Action. In 2010, except the Sahrawi Republic, the League of Arab States adopted the Arab Strategy for Disaster Risk Reduction (ASDRR). The Arab Strategy for Disaster Risk Reduction was first aligned to the African Regional Strategy for Disaster Risk Reduction (ARSDRR) and Hyogo Framework for Action (HFA) and then to Sendai Framework for Disaster Risk Reduction (SFDRR).

Figure 1: Map of North Africa Countries



In order to implement the Arab Strategy for Disaster Risk Reduction horizon 2030, UNDRR and the League of Arab States (LAS) developed a Programme of Action. The Arab Coordination Mechanism for Disaster Risk Reduction (ACMDRR) in 2018 meeting in Tunis (Tunisia) adopted the programme of Action. This programme of action proposes the implementation of the Arab Strategy in three phases. The first phase 2018-2020: focuses on assessment of risks, creating/strengthening national institutions and development of overall elements of program at regional and national levels. The second phase 2021-2025 covers the strengthening of institutions, developing and implementing Disaster Risk Reduction Programmes at national level and beginning DRR implementation at selected local (sub-national) levels. The third Phase 2026-2030 covers the delivering on all areas especially strengthening investment, preparedness, response and recovery systems at national and local levels and building DRR systems at all local (city and community) levels.

To accelerate and for a better implementation of the Arab Plan of Action, the League of Arab States (LAS) has created the Arab Partnership Group for Disaster Risk Reduction and reorganized the Arab Coordinating Mechanism for Disaster Risk Reduction.

An Arab Science and Technology Advisory Group for Disaster Risk Reduction (Af-STAG) has been created and is working closely with UNDRR, Arab office in Cairo (Egypt). Although considerable progress is made in the last two decades, in terms of disaster risk reduction and management, disasters are still occurring with a certain degree of violence causing human live losses and considerable damage to properties and infrastructures; thus, the ongoing efforts should continue in the framework of the three international agendas.

About this Biennial Regional Report

The African Union's Heads of State and Government in the 28th Extraordinary Summit that took place in January 2017 in Addis Ababa, Ethiopia, adopted the PoA. The PoA outlines how Africa aims to implement the SFDRR on the continent. In June 2018, the African Union Commission (AUC) developed the Monitoring and Reporting Framework (MRF) for the Programme of Action of the implementation of the Sendai Framework for Disaster Risk Reduction (2015-2030) in Africa. The Ministers in charge of DRR adopted the MRF in October 2018 during the Africa Arab Regional Platform on DRR. This monitoring framework is guided by the SFDRR and PoA, and builds on the successes of the implementation of the Hyogo Framework of Action (2005-2015), the Africa Regional Strategy for Disaster Risk Reduction (ARSDRR) of 2004 and its Programme of Action (2005). The monitoring and reporting system is meant to facilitate robust monitoring and reporting of the PoA's performance in relation to its targets. The AUC, as the custodian of the PoA, is required to coordinate and report on the implementation of the PoA biennially. This report is therefore the first biennial report as called for by the MRF.

The MRF has been designed to focus on three levels: the AUC, Regional Economic Communities (RECs) and Member State level. This report will specifically focus on the North Africa countries. The data contained in this report is also aggregated to continental level and thus provides impetus to the Africa Biennial Report on the implementation of the SFDRR and the PoA.

SCOPE AND AIM

The goal of this biennial report is to report on the implementation of the seven global SFDRR targets and the additional five Africa specific targets of the PoA at country and regional levels.

Table 1: Summary of SFDRR targets and indicators¹

Targets	Indicators
Substantially reduce continental disaster mortality by 2030, aiming to lower the average per 100,000 continental mortality rate in the decade 2020–2030 compared to the period 2005–2015;	<ul style="list-style-type: none"> • Number of deaths and missing persons attributed to disasters, per 100,000 population
Substantially reduce the number of affected people continentally in Africa by 2030, aiming to lower the average continental figure per 100,000 in the decade 2020–2030 compared to the period 2005–2015;	<ul style="list-style-type: none"> • Number of directly affected people attributed to disasters, per 100,000 population
Reduce direct disaster economic loss in relation to continental gross domestic product (GDP) by 2030;	<ul style="list-style-type: none"> • Direct economic loss attributed to disasters in relation to global gross domestic product
Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030;	<ul style="list-style-type: none"> • Damage to critical infrastructure attributed to disasters
Substantially increase the number of countries with national and sub-national/local disaster risk reduction strategies by 2020;	<ul style="list-style-type: none"> • Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030. • Percentage of local governments that adopt and implement local disaster risk reduction strategies in line with national strategies.
Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement national actions for implementation of the Sendai Framework by 2030; and	<ul style="list-style-type: none"> • Total official international support, (official development assistance (ODA) plus other official flows), for national disaster risk reduction actions. • Number of international, regional and bilateral programmes and initiatives for the transfer and exchange of science, technology and innovation in disaster risk reduction for developing countries. • Number of international, regional and bilateral programmes and initiatives for disaster risk reduction-related capacity-building in developing countries. • Number of developing countries supported by international, regional and bilateral initiatives to strengthen their disaster risk reduction-related statistical capacity.
Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030.	<ul style="list-style-type: none"> • Number of countries that have multi-hazard early warning systems • Percentage of population exposed to or at risk from disasters protected through pre-emptive evacuation following early warning.

¹ Source: Technical Guidance for Monitoring and Reporting on Progress in Achieving the Global Targets of the Sendai Framework for Disaster Risk Reduction

The PoA MRF outlines thirteen (13) indicators for the five (5) additional targets of the PoA over the period 2015-2030 (see Table 2 below). Of these thirteen indicators, data for nine (9) indicators will be collected at member state level through DRR National Focal Points while data for the remaining four (4) indicators will be collected at REC level through DRR REC Focal Points.

Table 2: Summary of PoA Additional Targets Performance Indicators²

PoA Additional targets	Indicators
Substantially increase the number of countries with DRR in their educational systems at all levels, as both stand-alone curriculum and integrated into different curricula	<ul style="list-style-type: none"> • Percentage of countries with DRR curricula in their educational systems at all levels
Increase integration of DRR in regional and national sustainable development and climate change adaptation frameworks, mechanisms and processes	<ul style="list-style-type: none"> • Percentage of RECs with DRR integrated in regional sustainable development frameworks, mechanisms and processes • Percentage of countries with DRR integrated in national sustainable development frameworks, mechanisms and processes • Percentage of RECs with DRR integrated in climate change adaptation frameworks, mechanisms and processes • Percentage of countries with DRR integrated in climate change adaptation frameworks, mechanisms and processes
Additional Target 3: Substantially expand the scope and increase the number of sources for domestic financing in DRR	<ul style="list-style-type: none"> • Total number of DRR programmes and activities domestically funded • Total cost of DRR programmes and activities domestically funded • Percentage country level disbursement of funds for DRR programmes and activities • Percentage of total cost of DRR programmes and activities domestically funded
Additional Target 4: Increase the number of countries with, and periodically testing, risk- informed preparedness plans, and, response, and post-disaster recovery and reconstruction mechanisms	<ul style="list-style-type: none"> • Percentage of countries with risk informed preparedness plans, response, post- disaster recovery and reconstruction mechanisms • Percentage of countries periodically testing their preparedness plans, response, post-disaster recovery and reconstruction mechanisms

² Source: Monitoring and Reporting Framework for the Programme of Action for the Implementation of the Sendai framework in Africa

<p>Additional Target 5: Substantially increase the number of regional networks or partnerships for knowledge management and capacity development, including specialized regional centres and networks</p>	<ul style="list-style-type: none"> • Number of regional networks or partnerships for DRR knowledge management and capacity development • Number of specialised DRR regional centres established and operational
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The PoA MRF outlines thirteen (13) indicators for the five (5) additional targets of the PoA over the period 2015-2030 (see Table 2). Of these thirteen indicators, data for nine (9) indicators will be collected at member state level through DRR National Focal Points while data for the remaining four (4) indicators will be collected at REC level through DRR REC Focal Points.

METHODOLOGY

The nature of the study necessitated the use of a mixed methods approach. Both qualitative and quantitative data were collected. The main objective of the study was to provide a report of Member States' and RECs' progress against the targets of the SFDRR and the Africa PoA's additional five targets and indicators. Therefore, the reporting had to also consider the four Priority Areas of the SFDRR as they relate to the various targets. During the regional data collection workshops, organized by the AUC, reported data for the targets of the SFDRR was mostly quantitative, whereas it was more qualitative for the PoA. Two surveys were developed and administered online during a workshop (see below). In addition, existing databases and in particular the INFORM Index for Risk Management were used for baseline data.

DATA COLLECTION TOOLS

A number of data gathering tools were used. For baseline information, data relevant to the North Africa region were taken from primary data during the regional workshops, the INFORM databases for the years 2015-2018, and HFA reporting up until 2015. The primary data collection instrument for the North Africa region was a regional data collection workshop which was held from 23-25 September 2019 in Addis Ababa, Ethiopia. Three different data collection tools were used during the workshop. Firstly, Member States were supplied with a PowerPoint template of the various data points on which they had to report. The template was sent to the Member States before the workshop. Each Member State presented its progress against the SFDRR as well as the PoA.

Subsequently, two online surveys were administered during the workshop. Member States were guided through the use of the online survey driven themes guided by the four priority areas, the targets and indicators of the SDFRR and PoA. In all cases the nuanced and deeper meaning of the qualitative data was explored and these appears as narratives linked to each Member State and REC. For the purpose of comparison and showing progress against the targets, a North Africa SFDRR and PoA "dashboard" was developed (see Chapter 4). In this way a quick reference is provided for Member States of their progress between 2015 and 2018. All of the indicators linked to the 5-point Likert scale were aggregated

to provide a final “dashboard” score for each country. In total 13 sub-, indicators were used to reach the combined scores for 2015-2016 and 2017-2018 respectively by the QuestionPro survey tool. The first survey specifically focussed on the SFDRR and the seven mentioned targets. Qualitative responses were also elicited to allow each Member State to give more depth in understanding and motivation to their progress against each target. These qualitative responses have been captured in the country specific report in Chapter 5. The second survey focussed on the additional five targets of the PoA as well as disaster risk reduction institutional aspects including national statutory and regulatory instruments. This second survey was qualitative in nature and allowed for more in-depth reporting on the various aspects. Similarly, for REC level reporting, an online survey was developed mostly consisting of qualitative responses linked to the SFDRR targets and additional PoA targets.

DATA ANALYSIS AND INTERPRETATION

Data analysis involved the following processes: (1) analysis of secondary data sources such as the relevant DRR strategies and country study reports, (2) the quantitative and qualitative data from primary sources was analysed using the QuestionPro analytics engine and (3) the qualitative data was analysed using the various themes guided by the reporting template prepared by the AUC and the lead consultant. Where needed, data was exported for further manipulation and analysis. All data was aggregated to REC level for further analysis.

CHAPTER ONE

RISK PROFILE: NORTH AFRICA REGION

Introduction

The North African countries are vulnerable to natural, industrial and human-made hazards and disasters with considerable impacts on lives, livelihoods and properties. The region of North Africa is exposed to a variety of natural hazards including coastal, urban and river floods, earthquakes, desertification, drought, sand encroachment, rockslides, sand storms, and water scarcity, as well as to industrial and transport-related hazard and epidemics. River flood, urban flood, coastal flood, water scarcity, extreme heat and wild fire are classified as high, whereas earthquake and tsunami are categorized as medium.

The disaster risk profile of North Africa countries (Algeria, Egypt, Libya, Mauritania, Morocco, Sahrawi Republic and Tunisia) has changed in the last two decades from geophysical to hydro-meteorological threats. Both geophysical and hydro-meteorological disasters in the North African region share common features due to the common geological history and climate. In the last decades the earthquake risk was predominant in Algeria, Morocco and Tunisia, but with the rapid unplanned urbanization, population increase, development of critical engineering works, industrialization of cities with modern types of buildings and the concentration of population living in hazardous areas, these risk drivers are shifting the risk profile towards to hydro-meteorological hazards. These hazardous areas are a matter of growing concern as their vulnerability is increasing significantly and considerably, and thus they are likely to contribute to heavier loss of life and seriously increasing the economic losses in future disaster damage. These hazards include various types of floods, drought, sand storm and forest fires which are becoming more and more frequent and destructive.

Coastal cities are also vulnerable hotspots for climate change. Most cities and towns in North Africa are located by the Mediterranean Sea and few in the Atlantic Ocean. Over 70 per cent of the Algerian, Egyptian, Libyan, Moroccan and Tunisian populations live in cities along the coast. The coastal areas of North Africa, mainly Algeria, Libya, Morocco and Tunisia, are also vulnerable to earthquakes, flash floods and tsunamis. Moreover, Sea Level Rise is predicted to affect other major cities in the region including Algiers, Alexandria, Casablanca and Tunis.

Although geophysical disasters are only a fraction of the total disasters experienced by Algeria and Morocco, they can be extremely devastating as 1980 El Asnam and 2003 Boumerdes (Algeria) earthquakes, 1992 Cairo (Egypt) and, 2004 Al-Hoceima (Morocco) earthquake.

Most of North African countries suffered also from destructive floods in the 20th and beginning of the 21st century, for instance in Algeria (Algiers (2001) and Ghardaia (2008)), in Morocco (Mohammedia, Nador and Al-Hoceima (2003)), in Tunisia (Grand-Tunis, Zaghuan and Nabeul (2003)), Mauritania (Nouakchott (2013)), Libya (Tripoli (2013)), Sahrawi Republic (2015) and Egypt (Cairo 2017).

Due to its highly arid desert conditions, the North African region is one of the most vulnerable regions to climate change. Climate change is expected to severely reduce the rainfall/runoff (by up to 50 per cent), and to increase the intensity of droughts and heat waves. Among the most visible and lasting consequences of the climate change events that affect North Africa region are desertification, drought, deforestation, sand storms, strong winds, heat and cold waves and, environmental degradation.

Mauritania, particularly, is also susceptible to epidemics which include Malaria, Meningitis, Cholera, Fever in the Rift Valley, Congo Crimean Haemorrhagic Fever, and Liver fluke, Pleuropneumonia and Foot - and - mouth disease.

The events mentioned above, among others, raised the awareness of both the North African governments and the civil society of the need for the reinforcement of disaster risk reduction policy which started in early 2000s with the launch of the UN International Strategy for Disaster Reduction (UNISDR). Since then, disaster risk reduction has been on the agenda of the government's programmes, and concrete measures have been undertaken in organizations, legislation, institutions, training, education, communication and information. Governments have committed significant efforts to improve their natural risk governance and have aligned their strategies to each international framework for disaster risk reduction policy as the Yokohama Strategy and Plan of Action: 1994-2004, Hyogo Framework for Action: 2005-2015 and the Sendai Framework for Disaster Risk Reduction: 2015-2030 (SFDRR).

Table 3: North Africa region development indicators

Country	Population (Million inhabitants)	GDP Billion (US\$)	HDI ³	Poverty line (%) ⁴
Algeria	42.2	188	0.754	5.50
Egypt	97.4	235.4	0.696	32.50
Libya	6.5	50.98	0.720	"undetermined"
Mauritania	4.4	5.3	0.520	6.00
Morocco	36.0	118.5	0.667	4.20
Sahrawi Republic	0.6	"undetermined"	"undetermined"	"undetermined"
Tunisia	11.6	39	0.735	6.70
North Africa	198.7	637.18	0.682	10.98

Disaster risk reduction is not only about the hazard but it is about population and development of the region. Table 3 illustrates the North Africa countries development indicators, which are directly linked

³ The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living.

⁴ "Algeria - Global Hunger Index - Official Website of the Peer-Reviewed Publication". www.globalhungerindex.org. Retrieved 2018-10-19.

to disaster risk in the region. The rapid and unplanned growth of the population, the Gross Domestic Product, the Human Development Index and the poverty line are the main drivers to influence the vulnerability for most of the countries in North Africa. The poverty line indicator shows that Egypt with more than 30% of its population live under the poverty line; this will have a negative effect to achieve the SFDRR targets, the Africa PoA and thus the sustainable development goals in these countries. The other countries with less than 10% of their respective populations living under the poverty line have more capacity to achieve sustainable development.

Rapid population growth will put an increasing burden on infrastructure and systems that are in many instances already inadequate for public health and safety. Increasing concentrations of people and assets in urban areas will unavoidably accelerate the potential impact of negative events, particularly where planning procedures are inadequate or are not enforced. In many cases cities and towns are already experiencing difficulties in providing basic services such as transport or waste treatment⁵.

Table 4 shows the number of disasters, deaths and affected people recorded during the period 2015-2018. Mauritania is leading North Africa countries with total amount over 4.2 million people affected and 29 deaths mainly from two drought events (EM-DAT). These two-event droughts had a cross-cutting impact on the society in many aspects of livelihoods and sectors of society, such as agriculture, energy, food security, health, water resources, migration and conflicts over resources. Drought has had serious economic, social and environmental impacts mainly in Mauritania. Morocco suffered considerably during the last two years from drought. Algeria is third in terms of the number of affected people mainly by floods. The entire North Africa region recorded over 4,439 deaths and 843,902 people affected during the period 2015-2016, and 8,092 deaths and over 6,020,433 people affected in the period 2017-2018 in many ways (livelihoods, social, economic and environmental). All North African countries have experienced heavy rain and flooding in 2018, causing widespread damage in various places. Extreme temperatures have affected 750,000 people in 2015-2016 and over 1,845,000 in 2017-2018. Floods have caused the death over 35,000 people during 2015-2016. The high concentration, in urban sites of the population and the economic assets is increasing the vulnerability and thus making disasters even more devastating, particularly in coastal areas.

⁵ Natural Disasters in the Middle East and North Africa: A Regional Overview, 2014 The International Bank for Reconstruction and Development / The World Bank

Table 4: Number of disasters and losses per North African countries (2015-2018)

Member State	Number	Total deaths	Total affected	Total damage ('000 US\$)	Number	Total deaths	Total affected	Total damage ('000 US\$)
	2015-2016				2017-2018			
Algeria	*81	*73	*655	*61,459	*228	*314	*5,298	*526,663
Egypt	15	*1,149	*5,392	*20,017	5	*6,813	*16,112	0
Libya	14	3,151	2,737	0	14	875	467	0
Mauritania	1	14	20	0	4	29	4,246,458	0
Morocco	2	34	750,000	0	7	48	1,720,098	0
Sahrawi republic	*1	0	85,000	19.9	*0	0"	"0	"0
Tunisia	1	18	98	0	3	13	32,000	36,000
North Africa Totals	115	4,439	843,902	81,496	261	8,092	6,020,433	562,663

(Source: EM-DAT: The Emergency Events Database - *Université catholique de Louvain* (UCLouvain); Member States' reporting* and self-assessment on the SFDRR and PoA)

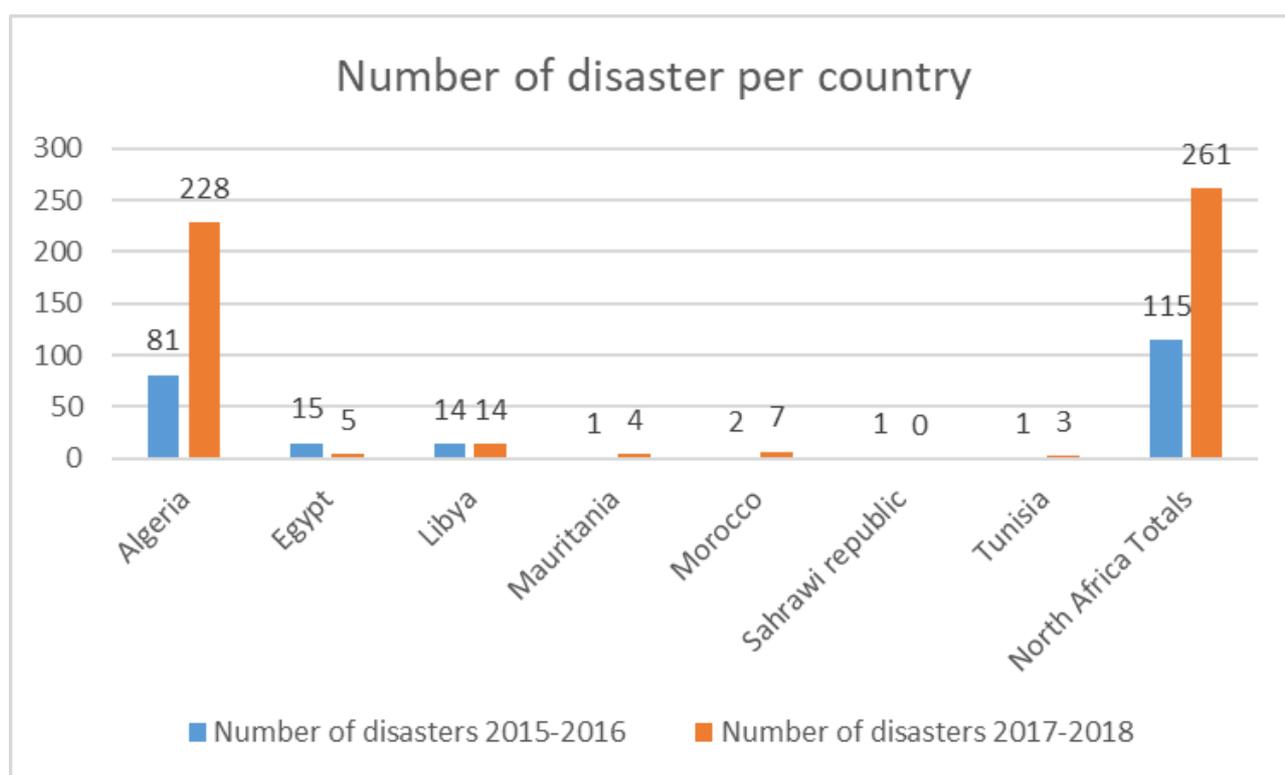


Figure 1: Number of disasters in North Africa Countries

Table 4 and Figure 1-6 illustrate a composite presentation of the recorded number of disasters, human lives losses, population affected and cost of damages observed for the period 2015-2016 and 2017-2018.

Statistics in Table 4 show that there is an increase in disasters deaths, affected people and in total damage. Although, it is not possible based on natural risks for a short period of four years 2015-2018 to draw a conclusion, these indicators are signifying that vulnerability is increasing. Therefore, North African countries should make more efforts to reduce their vulnerability and consequently reduce disaster risk. It is clear that DRR key regional challenges are still to be addressed, such as assessments of regional and national hazards and vulnerabilities and related risk, establishment and harmonization of Disaster Risk Management legal frameworks, improvement of Disaster Risk Reduction and climate change integration into sector policies, and reinforcing capacities on post-disaster needs assessment and recovery framework.

For the purpose of this report the Index for Risk Management (INFORM) was used for baseline information for determining vulnerability, hazards and exposure, lack of coping capacity and ultimately risk. INFORM is a joint initiative of the European Commission and the Inter-Agency Standing Committee Task Team (IASC) for Preparedness and Resilience, in partnership with many UN Agencies, donors, NGOs, and Member States. INFORM is also intended to support global policy processes, including:

- ✚ The Sendai Framework 2015-2030;
- ✚ The 17th Sustainable Development Goals adopted in UN Summit in September 2015;
- ✚ The 2016 World Humanitarian Summit;
- ✚ The 2017 Global Platform for Disaster Risk Reduction; and
- ✚ The resilience 'agenda', around which many organisations are focusing their humanitarian and development work.

The Index for Risk Management (INFORM) is a composite indicator that identifies countries at risk of humanitarian crisis and disaster that would overwhelm national response capacity. The INFORM model is based on risk concepts published in scientific literature and envisages three dimensions of risk: Hazards and exposure; Vulnerability; and Lack of coping capacity. The INFORM model is split into different categories and levels using 54 core indicators to provide a quick overview of the underlying factors leading to risk. The INFORM model uses a linear 5-point Likert type scale which is linked to a specific qualitative "classes" (very low, low, medium, high, very high). These in turn are linked to a quantitative scale giving the minimum and maximum value of the qualitative quantifier (see Table 4 below). Using the INFORM model in this report allows for the creation of a benchmark against which the current report can be measured. As a composite indicator, INFORM ranks countries according to the likelihood of needed international assistance in the near future, creates a risk profile for every country which shows the level of the individual components of risk and allows for trend analysis because the results of INFORM are available for at least 5 years.

INFORM model balances two major forces as identified in PAR model: the hazard & exposure dimension on one side, and the vulnerability and the lack of coping capacity dimensions on the other

side. Hazard dependent factors are treated in the hazard & exposure dimension, while hazard independent factors are divided between two dimensions: the vulnerability dimension that considers the strength of the individuals and households relative to a crisis situation, and the lack of coping capacity dimension that considers factors of institutional strength.

The INFORM risk concept considers all three aspects of Cardona's vulnerability. The aspects of physical exposure and physical vulnerability are integrated in the hazard & exposure dimension, the aspect of fragility of the socio-economic system becomes INFORM's vulnerability dimension while lack of resilience to cope and recover is treated under the lack of coping capacity dimension. The split of vulnerability in three components is particularly useful for tracking the results of disaster reduction strategies over time. Disaster risk reduction activities are often localized and addressed to particular community-level vulnerabilities and institutional capacities. The INFORM score is calculated with a multiplicative equation where each of the dimensions is treated equally:

$$\text{Risk} = \text{Hazard} \times \text{Exposure}^{1/3} \times \text{Vulnerability}^{1/3} \times \text{Lack of coping capacity}^{1/3}$$

In this form the INFORM's score is more susceptible to the Vulnerability and the Lack of Coping Capacity, the internal forces of risk that can be most influenced by the DRR activities. The INFORM model uses a linear 5-point Likert type scale which are linked to a specific qualitative "class" (very low, low, medium, high, very high). These in turn are linked to a quantitative scale giving the minimum and maximum value of the qualitative quantifier (see Table 5 below). Using the INFORM model in this research allows for the creation of a benchmark against which the current research can be measured.

Table 5: INFORM Model and classes thresholds

Risk	INFORM																
Dimensions	Hazard & exposure					Vulnerability				Lack of coping capacity							
Categories	Natural		Human			Socio-Economic		Vulnerable groups		Institutional	Infrastructure						
Components	Earthquake	Tsunami	Flood	Tropical cyclone	Drought	Current conflict intensity	Projected conflict intensity	Development deprivation (50%)	Inequality (25%)	Aid dependency (25%)	Uprooted people	Other vulnerable groups	DRR	Governance	Communication	Physical infrastructure	Access to health system

Dimension	CLASSES THRESHOLDS IN INFORM	
	CLASS	THRESHOLD
LACK OF COPING CAPACITY	very low	3.1
	low	4.6
	medium	5.9
	high	7.3
VULNERABILITY	very low	10.0
	low	1.9
	medium	3.2
	high	4.7
HAZARD & EXPOSURE	very low	10.0
	low	1.4
	medium	2.6
	high	4.0
RISK	very low	10.0
	low	1.9
	medium	3.4
	high	4.9
MAX	10	6.5
	6.4	5.0
MIN	3.5	0.0
	2.0	0.0

North Africa Risk Index (2015-2018)

The overall risk index of the North Africa region has increased from 4.3 to 4.5 over the two periods 2015-2016 and 2017-2018 respectively. For Algeria, Mauritania and Tunisia for the first period for which the risk index decreased significantly. It has increased for Libya and remained stable for Morocco and Egypt. For the period 2017-2018, all the North Africa countries show a decrease in risk. The inform risk index depends on many factors such hazard, exposure, vulnerability and coping capacity, as well as economic and political conditions in the region.

Table 6: North Africa INFORM Risk Index (2015-2018)

COUNTRY	2015	2016	2017	2018
Algeria	4.6	3.9	4.4	4.2
Egypt	4.6	4.6	4.5	4.5
Libya	5.7	6.4	6.1	6.0
Mauritania	5.2	5.0	5.7	5.5
Morocco	3.3	3.3	3.9	3.9
Sahrawi Rep.	undetermined	undermined	undetermined	undermined
Tunisia	2.7	2.8	3.1	3.0
North Africa	4.3	4.3	4.6	4.5

North Africa Hazards and Exposure Index (2015-2018)

For the overall period 2015-2018, the hazard and exposure index for the North Africa region has increased from 4.5 in 2015 to 5.7 in 2017 and decreased to 5.4 in 2018. The index remained stable during 2017-2018 for Egypt, but increased for Morocco. The index increased considerably for Libya, from 6.6 in 2015 to 8.4 in 2018 and this is explained by the overall situation in the country. For the other countries, the period of 2015-2018 is relatively stable which is shown in Table 7.

Table 7: North Africa Hazards and Exposure Index (2015-2018)

Country	2015	2016	2017	2018
Algeria	6.2	3.7	5.5	5.0
Egypt	6.4	6.1	6.3	6.3
Libya	6.6	8.3	8.4	8.4
Mauritania	3.1	3.4	5.2	4.6
Morocco	2.6	2.9	4.5	4.6
Sahrawi Rep.	undetermine	undermine	undetermine	undermined
Tunisia	2.3	2.6	4.4	3.7
North Africa	4.5	4.5	5.7	5.4

North Africa Vulnerability Index (2015-2018)

For the overall period 2015-2018, the vulnerability index remained stable for the North African region, except for Mauritania which decreased comparatively to 2015 and 2016. Table 7 shows that the vulnerability index remains high for Mauritania and this is reflected in the number of disasters, death and affected population during the period 2015-2018. During this four-year period 2015-2018, the vulnerability of the countries of

North Africa remained low, except Mauritania; which may explain the low number of deaths comparatively to the number of events. Unfortunately, the Sahrawi republic did not provide a complete data.

Table 8: NORTH AFRICA Vulnerability Index (2015-2018)

Country	2015	2016	2017	2018
Algeria	3.3	3.3	3.3	3.3
Egypt	3.3	3.3	3.3	3.3
Libya	4.0	4.5	4.1	3.9
Mauritania	6.1	5.4	5.1	5.2
Morocco	2.6	2.4	2.6	2.6
Sahrawi Rep.	undetermined	undetermined	undetermined	undetermined
Tunisia	1.6	1.6	1.4	1.5
North Africa	3.4	3.4	3.3	3.3

North Africa Lack of Coping Capacity Index (2015-2018)

The overall lack of coping capacity index of North Africa is influenced by the high index of Mauritania and Libya. Algeria and Tunisia improved their coping capacity. Egypt and Morocco kept their coping capacity stable during the two period 2015-2016 and 2017- 2018. Libya, did not increase the lack of coping capacity for the second period. There is a clear need for building and reinforcing the coping capacity in North Africa region.

Table 9: North Africa Lack of Coping Capacity Index (2015-2018)

Country	2015	2016	2017	2018
Algeria	4.9	4.9	4.8	4.6
Egypt	4.7	4.7	4.5	4.5
Libya	6.9	7.0	6.7	6.7
Mauritania	7.3	7.0	7.0	7.1
Morocco	5.3	5.2	5.0	5.0
Sahrawi Rep.	undetermined	undetermined	undetermined	undetermined
Tunisia	5.1	5.0	4.9	4.8
North Africa	5.7	5.6	5.5	5.4

Although the INFORM indices provide for a strategic benchmark of progress against risk indicators, it does not address the progress made by Member States in relation to the SFDRR or PoA. In the subsequent chapters, the findings relating to the country self-assessments on the SFDRR and PoA will be presented.

CHAPTER TWO

**ACHIEVING THE SFDRR PRIORITIES IN
NORTH AFRICA REGION**

Introduction

The Monitoring and Reporting Framework for the Africa additional DRR targets PoA also calls for North Africa region specific reporting. The section to follow highlights the region specific progress made against the various SFDRR priorities. The reporting is focused on the assessment achieved by the North Africa countries. According to the information reported by the UMA representatives to the data collection workshop in Addis Ababa (Ethiopia), 23-25 September 2019, the following progress in implementing the priorities is developed in what follows.

Priority 1: Understanding disaster risk

The North African countries (Algeria, Egypt, Libya, Mauritania, Morocco, Sahrawi republic and Tunisia) have undertaken studies in the region to better understand disaster risk in the region. Several studies have been published in scientific journals for all the countries, except for the Sahrawi Republic. However, there is not enough dialogue and exchange of information between scientists and policy-makers.

The secretariat of UMA reported that inter-RECs experience sharing and exchange of lessons learned under auspices of AUC have been realized, by visiting IGAD (methodology centre) and COMESA. Unfortunately, Sahrawi Republic did not provide data.

Algeria has reported detailed information on progress towards the achievement in priority 1, namely: a greater role dedicated to science and technology; upgrading of integrated national and local databases for disaster losses; strengthening the resources of the research centers and studies on risks, particularly earthquakes and floods; involvement of local universities in teaching, training and research on DRR; continuous improvement of the early warning and response mechanisms; preparation of the integration of curricula in the 3 levels of education and vocational training, and also noteworthy to mention is that the government is encouraging the creation of startups focusing on DRR.

Priority 2: Strengthening disaster risk governance to manage disaster risk

An interactive knowledge-sharing platform with risk information and knowledge sharing was established to facilitate improved disaster risk governance. No information was provided concerning climate data or data or hydro-meteorological hazards in the region. There was also no information about any approach to address regional and trans-boundary disaster risk concerns. Coordinating DRR structures and mechanisms across member states was reported, but no detail was provided.

Algeria is updating its national strategy and launching the development of local strategies with the assistance from the United Nations Office for Disaster Risk Reduction of the Regional Office Arab States in Cairo

(Egypt), empowering local authorities by giving them new tasks and strengthening their resources (new law on local authorities), strengthening of the institutional base (new decree establishing delegations at the level of the wilaya (prefecture) and municipality) and also Intersectoral committees in various sectors, working for a better coordination between the different stakeholders and, involvement of the citizen with more awareness and mobilization (encouragement to create and strengthen associations).

Priority 3: Investing in disaster risk reduction for resilience

Most of the North African countries did not provide any information about investing in disaster risk reduction and prevention for resilience. Algeria has put in place a system for a better use of the important financial resources made available for the disaster risk reduction actions with project maturity and accountability, dedicating special funds to the prevention, strengthening risk transfer mechanisms and also encouraging more productive participation of the private sector in the DRR activity.

Priority 4: Enhancing disaster preparedness of effective response and to “Build back Better” in recovery, rehabilitation and reconstruction

The North African countries have generated risk information packages for different cultural, gender, and age groups. These packages will certainly reduce the vulnerability of these groups. Regional multi-hazard early warning systems have been developed/reviewed. Algeria is strengthening the national crisis management unit and watch cells at all levels. This capacity strengthening includes reinforcing the capacity for response, an obligation to organize simulation drills at all levels, reviewing of missions, upgrading of national capacities at different levels, updating continuously the response plans and their digitization, upgrading continuously the emergency stocks and continuously improving recovery and reconstruction plans. Algeria has also updated the contingency plan (ORSEC) at all levels of the administration (National, regional and local) and is published in Presidential decree.

CHAPTER THREE

**PROGRESS TOWARDS ACHIEVING THE
SFDRR TARGETS**

Introduction

This first biennial continental report illustrates the progress made for the implementation of the SFDRR. It is noteworthy to mention that the baseline data for most of the North African countries is incomplete, heterogeneous and deficient in many aspects due mainly to challenges associated with the methodology of collection, treatment and reporting the data at national level. For few countries information for the targets A, B, C of the SFDRR is available and can be used to evaluate the implementation of the SFDRR by countries. The other targets are reliant on the scores allocated to the variable by the respective Member States in this research. Sahrawi republic did not provide data.

3.1 SFDRR Target A: Reduce disaster mortality

The period 2015-2016 compared to that of 2017-2018 shows that there is an increase in disaster mortalities in the North African region from 4,439 in 2015-2016 to 8,092 in 2017-2018 (see Table 10). Most of these deaths can be attributed to floods and transportation/industrial accidents. Most of the disaster mortalities were recorded in Libya in 2015-2016 and in Egypt in 2017-2018.

Table 10: Disaster mortalities per North Africa country (2015-2018)

Country	Number ⁶	Total deaths	Number	Total deaths
	2015-2016		2017-2018	
Algeria	*81	*73	*228	*314
Egypt	15	*1,149	5	*6,813
Libya	14	3,151	14	875
Mauritania	1	14	4	29
Morocco	2	34	7	48
Sahrawi Republic	*1	0	*0	0"
Tunisia	1	18	3	13
NORTH AFRICA TOTAL	115	4,439	261	8,092

(Source: EM-DAT: The Emergency Events Database - *Université catholique de Louvain* (UCLouvain); *Member States' reporting and self-assessment on the SFDRR and PoA)

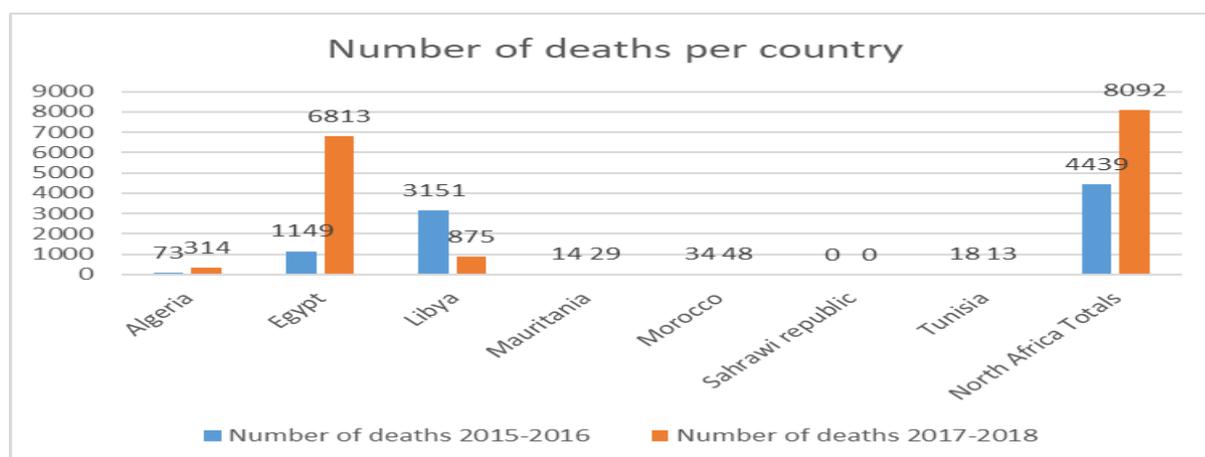


Figure 2: Total deaths due to disasters per country North Africa region (2015-2018)

According to EM-DAT, Libya suffered most mortalities from transport-related accidents. During the two periods, Algeria, Mauritania and Morocco recorded an increase of disaster events as well as the number of deaths, whereas Egypt has recorded an increase of mortalities. The number of disaster events increased considerably in Algeria but increased slightly for Mauritania, Morocco and Tunisia. It is worthy to mention that countries as Algeria and Egypt (*) reported larger number of deaths comparatively to data extracted from EM-DAT during the period 2015-2018. For the North Africa region, the number of disasters increased considerably and so did the number of mortalities. Sahrawi republic provide did not us with data. Although, it is difficult to draw any conclusion for a short period of four years 2015-2018, North Africa countries should make more efforts in disaster risk management to reduce mortalities in their respective countries.

Table 11: Mortalities per disasters in North Africa (2015-2018)

Disaster	2015-2016		2017-2018	
	Number	Total deaths	Number	Total deaths
Drought	0	0	3	18
Epidemic	0	0	0	0
Flood	*29	405	*181	*103
Earthquake	*10	*20	*20	*1
Landslide	0	0	0	0
Wildfire	*5	*19	*22	*194
Transportation	*53	*3,795	*30	*7,758
Storms	3	67	1	18
Extreme temperature	15	133	4	0
TOTAL	115	4,439	261	8,092

(Source: EM-DAT: The Emergency Events Database – *Université catholique de Louvain* (UCLouvain); Member States' reporting and self-assessment on the SFDRR and PoA)

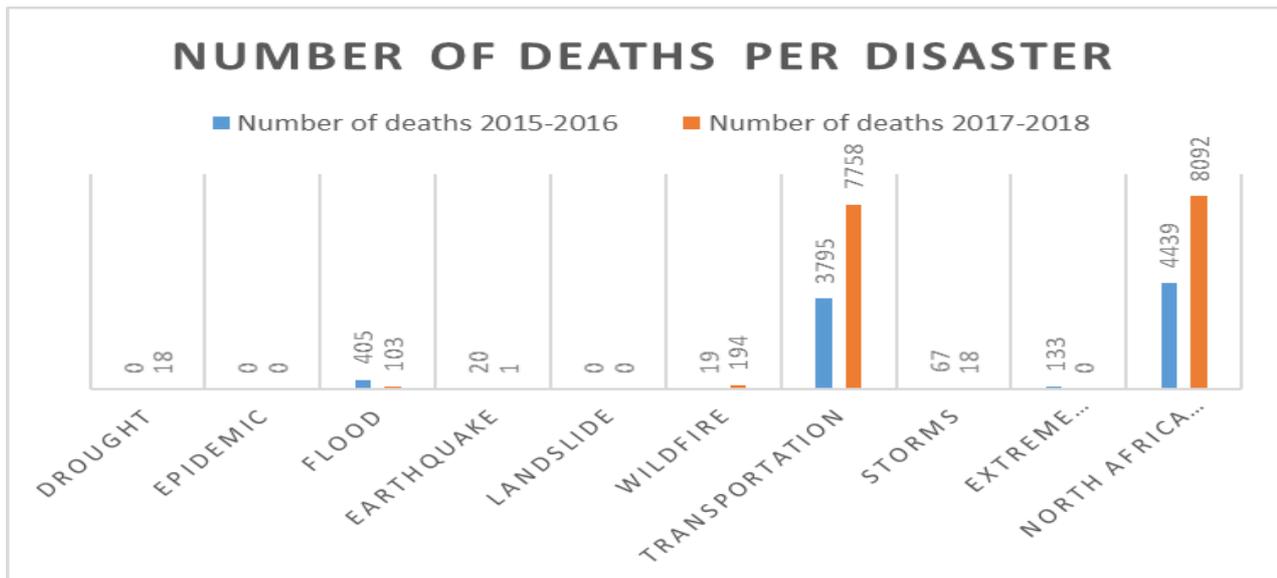


Figure 3: Deaths per disasters in North Africa (2015-2018)

The main cause of mortalities in North African countries is far the transport-related accidents, which caused 3,795 deaths during the period 2015-2016 and increased during 2017-2018 to 7,758 deaths. Mortalities from flood recorded 405 deaths in 205-2016 and 103 in 2017-2018. The North African region has suffered a larger number of disaster and recorded an increase in mortalities in the four-year period of observation. From this data, a trend of disasters and mortalities is progressing; however, the period of observation 2015-2018 is too short to be representative, and to draw conclusions. However, countries in North Africa should make more efforts in disaster risk management to reduce the vulnerability and thus mortalities.

3.2 SFDRR Target B: Reduce the number of affected people

Global Target B of the SFDRR aim to “*substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 in the decade 2020–2030 compared to the period 2005–2015*”. For the period 2015 to 2018, almost 7 million people in North Africa were affected by disasters.

Table 12: Total number of affected by disasters: in North Africa countries (2015-2018)

Disaster	Number	Total affected	Number	Total affected
	2015-2016		2017-2018	
Drought	0	0	3	4, 242,325
Epidemic	0	0	0	0
Flood	*29	35,000	*181	15,200
Earthquake	*10	0	*20	0
Landslide	0	0	0	0
Wildfire	*5	50	*22	2,000
Transportation	*53	25 ,335	*30	15,868
Storms	3	33,407	1	2,040
Extreme temperature	15	750,110	4	1,743,000
TOTAL	115	843,902	261	6, 020,433

(Source: EM-DAT: The Emergency Events Database - *Université catholique de Louvain* (UCLouvain); Member States' reporting and self-assessment on the SFDRR and PoA)

Drought has affected over 4 million people followed by extreme temperature with about 2 million people. Flood has affected over 30 thousand people followed by storms and wild fires with over 2,000 people. There is a considerable increase of affected people in the North African region due to drought and transport-related accidents. Drought affects people in many ways as food insecurity, water scarcity, loss of capital and livelihoods, displacement of people internally and abroad.

Table 13: Total affected due to disasters in North Africa countries (2015-2018)

Country	Number	Total affected	Number	Total affected
	2015-2016		2017-2018	
Algeria	*81	*655	*228	*5,298
Egypt	15	*5,392	5	*16,112
Libya	14	2,737	14	467
Mauritania	1	20	4	4,246,458
Morocco	2	750,000	7	1,720,098
Sahrawi Republic	*1	85,000	*0	"0
Tunisia	1	98	3	32,000
North Africa	115	843,902	261	6,020,433

(Source: EM-DAT: The Emergency Events Database - *Université catholique de Louvain* (UCLouvain); Member States' reporting and self-assessment on the SFDRR and PoA)

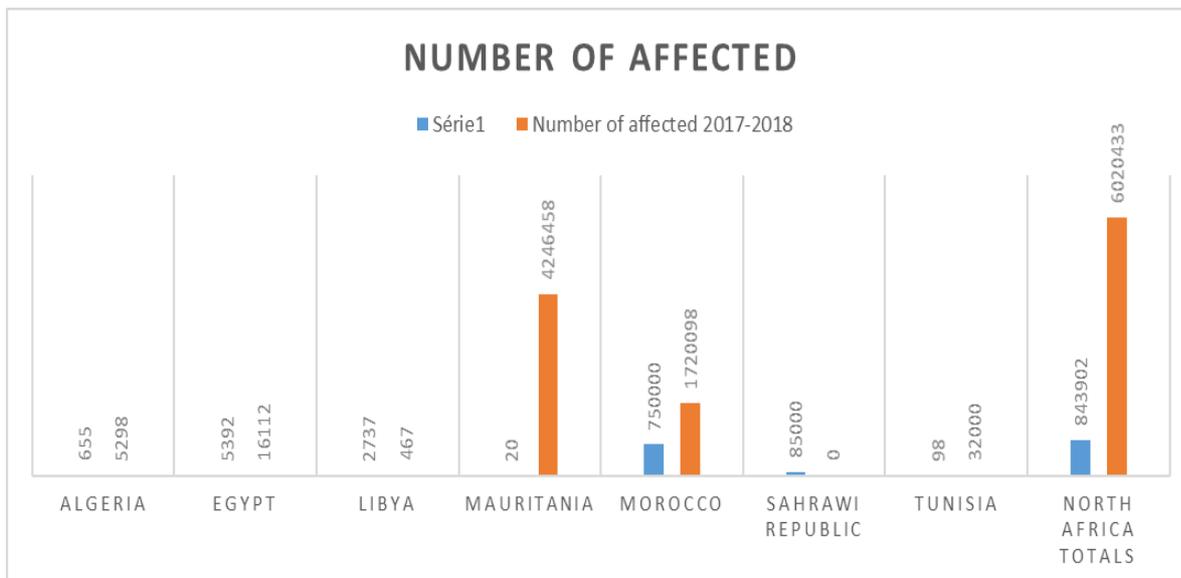


Figure 4: Total affected due to disasters in North Africa countries (2015-2018)

Mauritania, hit by drought, recorded the highest number of affected population of more than 4.2 million, followed by Morocco with 1.7 million people affected due to extreme temperature. Due to drought in Mauritania and extreme temperature in Morocco and to a less extent Algeria, the number of affected people during the 2017-2018 period has increased by almost 8 times that of the period 2015-2016. Mauritania's disaster risk profile is closely linked to its environmental characteristics and climatic factors. All these phenomena are now exacerbated by the acceleration of climate change, poorly managed urbanization, especially in the capital, and the movements of people in search of better living environments. The North Africa countries should plan a detailed study and analysis of the measures to implement for the achievement of Target B.

3.3 SFDRR Target C: Reduce direct disaster economic loss

Target C of the SFDRR aims to “reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030”. For this SFDRR target, there is lack of data from member states due to the challenges they are confronting in evaluating the cost of damage caused by each disaster. Generally, each ministry has the responsibility to evaluate the damage caused to its own sector and to lead the reconstruction of its damaged infrastructures, which, of course, makes it difficult to have an accurate overall total cost of the disaster. This is aggravated by the weak coordination across the sectors. To achieve Target C, it is recommended to raise awareness of the importance of disaster economic data.

Table 14: Total damages (US\$) per disasters in North Africa countries (2015-2018)

Disaster	Number	Total damage ('000 US\$)	Number	Total damage ('000 US\$)
	2015-2016		2017-2018	
Drought	0	0	3	0
Epidemic	0	0	0	0
Flood	*29	21,900	*181	465,286
Earthquake	*10	37,174	*20	97,166
Landslide	0	0	0	0
Wildfire	*5	0	*22	0
Transportation	*53	5,650	*30	211
Storms	3	16,772	1	0
Extreme temperature	15	0	4	0
North Africa Total	115	81,496	261	562,663

(Source: EM-DAT: The Emergency Events Database - *Université catholique de Louvain* (UCLouvain); Member States' reporting and self-assessment on the SFDRR and PoA)

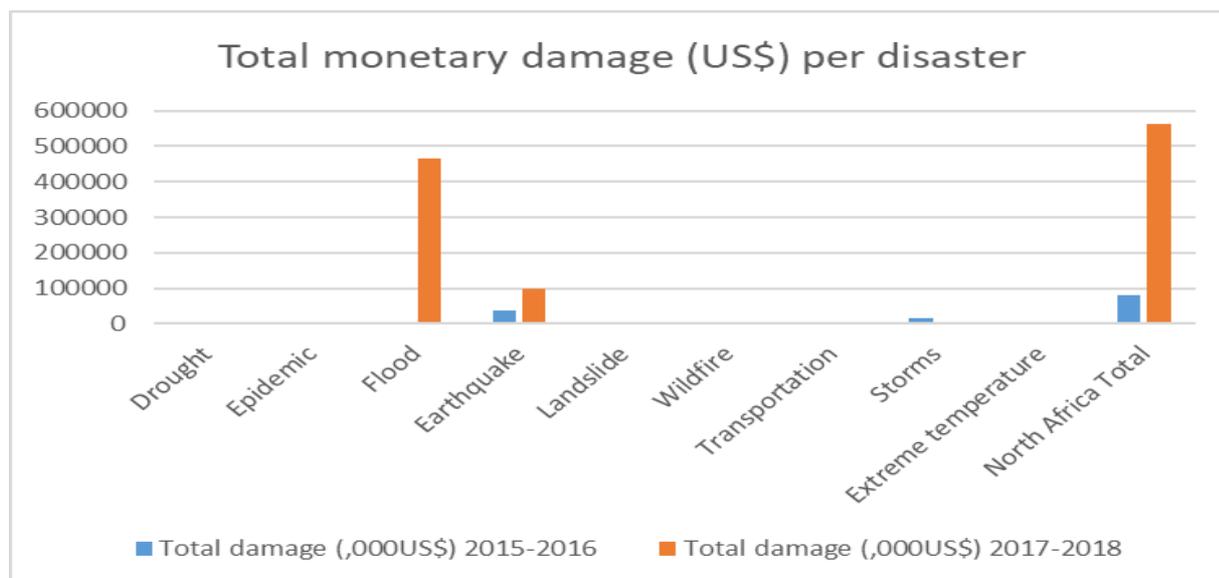


Figure 5: Total monetary damages in North Africa per disaster (2015-2018)

Table 15: Total monetary damages in North Africa per country (2015-2018)

Member State	Number	Total damage ('000 US\$)	Number	Total damage ('000 US\$)
	2015-2016		2017-2018	
Algeria	*81	*61,459	*228	*526,663
Egypt	15	*20,017	5	0
Libya	14	0	14	0
Mauritania	1	0	4	0
Morocco	2	0	7	0
Sahrawi Republic	*1	19,9	*0	"0
Tunisia	1	0	3	36,000
North Africa Total	115	81,496	261	562,663

(Source: EM-DAT: The Emergency Events Database – *Université catholique de Louvain* (UCLouvain); Member States' reporting and self-assessment on the SFDRR and PoA)

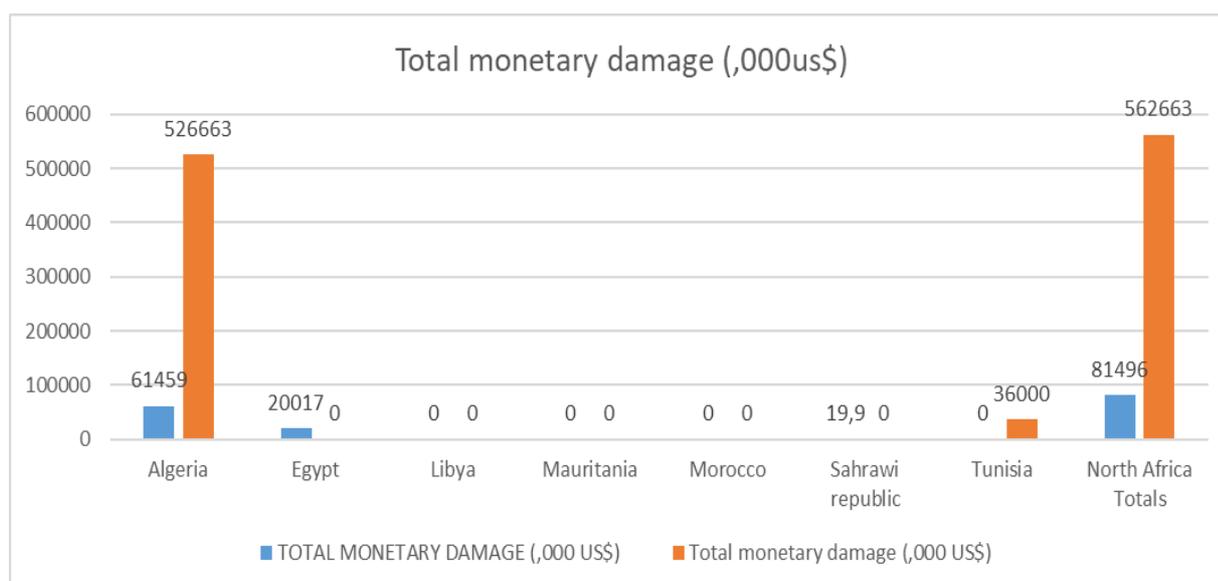


Figure 6: Total monetary damages in North Africa per country (2015-2018)

According to the data provided by the member states during the data collection workshops, it seems that the definition of disaster is not homogeneous among them and thus is actually not enough and incomplete to analyse it, draw conclusions and make recommendations. From Figure 6, one can see that Algeria has suffered most in monetary damages over US\$ 61 million during the period 2015-2016 and more than US\$ 526 million during 2017-2018. The region of North Africa has recorded a monetary loss of over US\$ 81 million during the period of 2015-2016 and more than 562 million during 2017-2018. It is clear that North African country should review their strategy for disaster risk management and make more efforts in implementing adequate disaster risk reduction measures.

3.4 SFDRR Target D: Reduce disaster damage to critical infrastructure and disruption of basic services

Similar to Target C, most of the Member States, because of the data is either scattered in various departments, not collected or not documented, experienced difficulties in reporting data on damage to critical infrastructure and the disruption of basic services. Most member states indicated that lack of knowledge in collecting the data at the country level as it is scattered in various sectors.

There is a clear need of capacity building on reporting data from disaster damaged critical infrastructures and disruption of basic services.

However, only Algeria reported damage to critical infrastructures as 16 health facilities, 80 educational facilities and 17 transportations were damaged or destroyed during the period 2017-2018; total damage was evaluated to US\$ 99,391,003. Regulations in Algeria require to take into account major risks in any spatial planning and urban planning instrument. For the construction of schools, there have been regulations since 1981 which have been continuously strengthened.

For all types of construction requirements for critical infrastructures, the building permit must be approved by the state owned Office of Control Techniques of Construction (CTC). Some member states indicated that lack of capacity and knowledge collecting and reporting up to the national disaster risk management structures are also the reason behind the lack of data on this indicator.

3.5 SFDRR Target E: Increase the number of countries with DRR strategies

The North Africa region, according to the data provided by countries, does not yet have national disaster risk reduction strategies finalized and implemented, except Egypt which is implementing the strategy since 2016. Algeria, Mauritania, Morocco and Tunisia are making good progress in updating, validating or adopting their national DRR strategies. The Maghreb countries have rather regulations and legislation updated /aligned to the SFDRR. Libya and Sahrawi republic did not provide any information about the status of their respective national DRR strategies.

3.6 SFDRR Target F: Increase international cooperation to developing countries

All North Africa countries (except Libya and Sahrawi Republic) reported about the international cooperation they have established in DRR with various organizations. Well before 2015, **Algeria** has developed several international cooperation in DRR, mainly in capacity building, with UNDP, France, Italy, Japan, China, etc. There is a program under implementation, financed by the European Union on local development that benefits 10 municipalities with integrated disaster risk management under the authority of the Ministry of Interior. The General Directorate of the Civil Protection (Ministry of Interior) has a programme of capacity building with the European Union. There are cooperation agreements between the main research centres and other centres in Europe and Japan, mainly for earthquake risk reduction.

The Government of the Arab Republic of **Egypt**, through cooperation with international bodies (such as JICA and the United Nations Regional Office for Disaster Risk Reduction (UNDRR, Cairo Office), is engaged in capacity development.

Morocco developed international relations with Japan International Cooperation Agency (JICA), Swiss Agency for Development and Cooperation (EDA), OECD, etc.

Tunisia has developed cooperation with UNDRR, UNDP, European Union (DG ECHO) expertise for the achievement of the national strategy on DRR and the plan of action. Cooperation with UNDRR in the framework of resilience of cities has led to the implementation of local strategies on disaster risk reduction at the municipalities of Ain Drahem and Tataouine (ongoing pilot projects), the assessment of disaster risk, vulnerability and construct multi-hazard maps in the municipalities of Ain Drahem, Mateur and Great Gabes and, the support for the deployment of an operational, cross-sectoral and integrated system of disaster risk reduction at the municipal level (Tataouine and Bousalem). French-Tunisian cooperation between the Civil Protection (ONPC) and Priority Solidarity Fund (PSF), which has funded the development of the national analysis. German-Tunisian cooperation between ONPC and THW and BBK, which has provided a high-performance equipment for flood protection and training of volunteers in the field of strengthening national capacities in DRR, improving the effectiveness of intervention and prevention, supporting the efforts of ONPC officers in DRR by using well-trained volunteers. This cooperation helped Tunisia to align its policies and regulations with the different requirements of the international conventions and frameworks, precisely the Sendai Framework for Disaster Risk Reduction.

In **Mauritania**, international cooperation remains limited to the technical support from the UNDRR office in Cairo. The country needs both expertise and the funding, in order to complete this process it should be noted that in the country there is no technical and financial support for DRR in an official way.

3.7 SFDRR Target G: Increase the availability of and access to multi-hazard early warning systems

For Algeria, Special Weather Bulletin (BMS) which exists before 2016 and focusses on hydro-meteorological hazards, covering the entire country. Also, an early warning system for earthquakes which is covering the entire country, it exists before 2016.

For Morocco, a multi-hazard Weather Alert System exists. This system aims to anticipate dangerous weather phenomena as heavy rain, strong winds, heat waves, cold waves, heavy snowfall and dangerous marine waves. This system has been in place since the 1990s, with continuous improvements being made. The latest improved version was in June 8, 2018. It covers the entire country and covers the general public and relevant departments. Morocco also has a Flood Risk Management System which is part of the national risk management strategy. It will be set up in 4 pilot areas representative of the different types of floods in Morocco. This system is being installed by the Ministry of the Interior.

Tunisia is implementing a flood risk early warning system on wadi (River) majerda. It concerns only flood risk and covers all the areas (Department) of the wadi of majerda. Also, a multi-hazard early warning system for the municipality of Ain Drahem is being implemented. It covers the entire area of Ain Drahem and even the neighbouring areas.

CHAPTER FOUR

**PROGRESS TOWARDS ACHIEVING THE PoA
ADDITIONAL TARGETS**

Introduction

The North Africa PoA Dashboard represents the overall progress made by countries against the additional Africa PoA targets. The variables linked to a 5-point Likert scale (1 meaning no to little progress and 5 meaning comprehensive progress), as per the requirements of the Monitoring and Reporting Framework. These were in turn colour coded for easy and visual reference (See Table 16). These colours are used throughout this report (in tables) to facilitate reference and understanding.

Table 16: North Africa Likert scale rating of variables

Rating Key	Qualitative criteria
1	No achievement or non-existent
2	Limited achievement
3	Moderate achievement, neither comprehensive nor substantial
4	Substantial achievement, additional progress required
5	Comprehensive achievement

The aggregated scores of the two periods 2015-2016 and 2017-2018 form the basis of comparison. Where no data was reported, a grey colour indicating “n/a” was used. In total 13 different indicators (as per the MRF) were used to arrive at the composite country scores for 2015-2016 and 2017-2018 respectively. The five-point scale allowed for qualitative comparison and thus the rating scale (e.g. 1-5) could be averaged where needed to arrive at an overall score for the period in question.

Table 17: North Africa Countries’ PoA Dashboard

Algeria	Egypt	Libya	Mauritania	Morocco	Tunisia
3,4 2015	1,9 2015	n/a 2015	1 2015	1 2015	2,1 2015
4,4 2018	3,6 2018	n/a 2018	1 2018	1 2018	2,8 2018

Table 17 above shows that Algeria, Egypt and Tunisia have made good progress against the additional Africa DRR targets. Mauritania and Morocco have made no progress, whereas Algeria, Libya and Sahrawi republic did not provide any data corresponding to the progress in additional Africa PoA DRR targets. This table gives an overall evaluation of the progress in additional Africa PoA DRR targets for the respective countries.

4.1 Additional Target 1: Substantially increase the number of countries with DRR in their educational systems at all levels

The absence of information related to member states with DRR in their education systems at all levels does not allow the evaluation of any progress in the field. It is clear that all the countries have integrated DRR into different curricula, but mostly at the primary education level. Algeria has introduced since 2004 (in the wake of Algiers-Boumerdes earthquake of 21 May 2003) modules in the tertiary levels, but still not generalized to all universities in the country. It has also integrated DRR in all levels but with a very limited achievement. Tunisia has also integrated DRR in the curricula and improved the integration for all levels in the second period 2017-2018 which makes it the leading among the North African countries in terms of progress towards this target. In Egypt, there are currently no curricula that include disaster risk reduction, but in the same context, Egypt is making great efforts in the field of disaster risk reduction, which includes the implementation of practical training in all schools of the governorates of the Arab Republic of Egypt which are documented and distributed to districts to be a model to follow. Unfortunately, Libya and Sahrawi republic did not provide any data.

Table 18: DRR integrated in curriculum (all levels) in North Africa

Country	DRR in primary education curricula		DRR in secondary education		DRR in tertiary education		Professional courses		AVG. TOTAL	
	2015	2018	2015	2018	2015	2018	2015	2018	2015	2018
Algeria	1	2	1	1	1	1	1	1	1	1
Egypt	1	1	1	1	1	1	1	1	1	1
Libya	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Mauritania	1	2	1	1	1	1	1	1	1	1.25
Morocco	1	2	1	1	1	1	1	1	1	1.25
Sahrawi Republic	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Tunisia	1	2	1	2	3	3	2	3	1.75	2.5
North Africa	1	1.8	1.2	1.2	1.4	1.4	1.2	1.4	1.15	1.4

4.2 Additional Target 2: Increase integration of DRR in regional and national sustainable development and climate change adaptation frameworks, mechanisms and processes

For Algeria, Disaster risk reduction is an integral part of national environmental policies and plans, particularly with regard to land use planning, climate change, sustainable development and natural resource management. Algeria national climate plan constitutes a revitalization of the environment and

renewable energies sector through an action plan which will take care of "the right of the citizen to a healthy environment and will also translate the international commitments of Algeria" in particular in terms of sustainable development goals. The National Climate Plan includes 156 actions divided into three (3) parts: Climate change adaptation measures (CCA); Climate Change mitigation measures and a part dedicated to the governance of the National Climate Plan. Developed after a consultation of the ministry with 18 sectors, the National Climate Plan includes, among its actions of adaptation to climate change, risk management around the coast, flood risk management, protection of water resources, the fight against forest fires, adaptation to agricultural drought, monitoring the impact of CCA on health, combating desertification and adapting local plans to climate change, particularly in risk management.

From the data collected from Tunisia, the country has legislation/policies that are looking forward to addressing the continental target to integrate DRR in national sustainable development and climate change adaptation frameworks, mechanisms and processes. Furthermore, the National Strategy for Climate Change (2012), the National Strategy for Sustainable Development (2014) and specific regulatory texts are encouraging integrating of DRR in all these domains.

Morocco has elaborated a National Plan for Climate Change Adaptation (PNRC) drawing up to record the actions carried out by the various actors, both in mitigation and in adaptation, and proposing measures to implement.

For Egypt, vision 2030 is the first strategy formulated in accordance with the long-term strategic and participatory planning methodology, developed with broad community participation that took into account the views of civil society, the private sector, ministries and government agencies, and received the active support and participation of international development partners, which included comprehensive objectives. The strategy is based on the concepts of "inclusive, sustainable growth and balanced regional development", which ensures the participation of all in the process of construction and development while ensuring that all parties benefit from this development. Unfortunately, no data has been collected from Libya, Mauritania and Sahrawi Republic countries to allow an assessment of the progress in the PoA.

The insurance sector is a crucial factor in disaster risk reduction. Algeria⁷ has made progress in the insurance sector in terms of legislation and policies. However, the production of natural disaster insurance (Cat-Nat) is slowing down. Gaps linked to the insurance culture not yet sufficiently widespread in Algerian society and lack of means of controlling the obligation (noticeable only at the

⁷ https://www.cna.dz/extension/mydesign/design/mydesign/images/Revue_Assurance_03.pdf

time of real estate transactions and in taxation) are the two main pitfalls to expanding the scope of Cat-Nat (NATural-CATastrophes° insurance.

Tunisia reported that a draft law has been drawn up by the Tunisian Federation of Insurance Companies (FTUSA) in July 2018, for the establishment of a compulsory insurance for natural disaster risks. The law will allow policyholders to benefit from cover in the event of a natural event (earthquake, flood, etc.).

For Morocco, a draft decree implementing law n ° 110-14 of August 25, 2016, instituting a regime for covering natural disasters, was adopted by the Moroccan government council on March 21, 2019. This project sets up a dual compensation system: an indemnity system for victims with an insurance contract and a benefit system for the benefit of other victims not covered by an insurance policy. No data was provided by Mauritania, Libya and Sahrawi Republic.

Regarding legislation and policy frameworks for DRR and CCA, Algeria has provided detailed information and list of legislative and policy frameworks (See Table below). The other countries did not provide any information.

Table 19: Legislative and Policy Frameworks for DRR and CCA

NORTH AFRICA	Legislative Frameworks for DRM	Legislative Frameworks for Climate change (and adaptation)
Algeria	<p>Law 04-20, on the prevention of major risks and disaster management in the context of sustainable development. 2004</p> <p>Law 10-02 approving the SNAT that integrates risk reduction into development plans and strategies; 2010</p> <p>Law 04-05 amending and supplementing the law 90-29 on planning and urban planning; 2004</p> <p>Ordinance 03-12 on the obligation of CAT-NAT insurance and the compensation of the victims, 2003</p> <p>The 03-10 law relating to the protection of the environment in the context of sustainable development, 2009</p> <p>Executive Decree 09-335 laying down the procedures for drawing up and implementing the internal intervention plan by the operators of industrial installations, 2015</p> <p>Executive Decree 15-71 of 11 February 2015 laying down the conditions and procedures for drawing up and adopting special intervention plans for installations and structures, 2015</p> <p>Decree 17-126 of 27 March 2017 Specifying the system for preventing radiological and nuclear risks, as well as</p>	

	the means and methods for combating these claims when they occur, 2017 Executive Decree 19-59 laying down the modalities for the elaboration and management of emergency organization plans, 2019	
Egypt	Undetermined	
Libya	Undetermined	
Mauritania	Undetermined	
Morocco	Undetermined	
Sahrawi Republic	Undetermined	
Tunisia	Undetermined	

North African countries have, besides the policies and legislations, a number of organisations working within the fields of DRR and climate change adaptation. These organizations are listed in Table 24 below.

Table 20: Government organisations for both DRR and CCA in each North Africa country

NORTH AFRICA	National Organisations working on DRM	National Organisations working on Climate change (adaptation)
Algeria	1. National Delegation for Major Risks (DNRM) 2. General Directorate for Civil Protection 3. National Research Center for Geophysics, Astronomy and Astrophysics (CRAAG) 4. National Research Center for Applied Earthquake Engineering (CGS)	National Agency for Climate Change (ANCC), National Agency for Hydrological resources (ANRH)
Egypt	Undetermined	
Libya	Undetermined	
Mauritania	Undetermined	
Morocco	Undetermined	
Sahrawi republic	Undetermined	
Tunisia	National Agency for the Protection of the Environment (ANPE)	National Agency for the Protection of the Environment (ANPE)

4.3 Additional Target 3: Substantially expand the scope and increase the number of sources for domestic financing in DRR

Additional Target 3 considers the expansion of the scope of, and increase in, the number of sources for domestic financing of DRR. The multi-sectoral and multi-layered environment of DRR programmes also makes it very challenging to have one single figure at national level. The importance of this target is to show the ongoing DRR programmes and activities, which are funded domestically which constitutes a

guarantee for sustainable development. These activities also illustrate how much DRR is integrated in the national development strategy towards a sustainable development. Algeria is investing a large amount of domestic funds for DRR activities but unfortunately these funds are not separated from the national or, regional budgets. Unfortunately, no data was collected from the other North Africa states.

Information of the percentage of allocation and disbursement of funds for DRR is generally very complex to obtain from the administration as the projects or activities are managed at the country but not detailed to DRR. The data concerning DRR programmes is generally not recorded separately, but integrated in the cost of the overall projects and, thus there is a need to establish a new DRR accounting item reserved to DRR activities in the state budget. As this type of data is not specifically recorded by the administration, it was very complex to obtain it with a certain degree of accuracy. North Africa countries did not report on this data.

4.4 Additional Target 4: Increase the number of countries with, and periodically testing, risk- informed preparedness plans, response, and post-disaster recovery and reconstruction mechanisms

Algeria and Egypt reported detailed information about this additional target and have made very good progress on simulation drills. The Algerian civil protection is the national organisation responsible for emergency management and for the organisation of periodic testing in several environment conditions (Cities, rural areas, desert sites, marine and air conditions). The obligation to organize periodic testing at all levels was established by decree 19-159 of February 2, 2019. The National Delegation for Major Risks (DNRM) and the civil protection have updated the national, regional and local contingency planning (ORSDEC).

In Egypt, there are many preparedness plans to face various risks such as the national plan to face the risks of floods, which occur continuously every year at specific times and this plan has been updated annually in line with the developments that occur on the ground. Egypt also has other plans such as the major fire risks plan, the Nile accidents plan, and the earthquake plan. These plans are continuously updated according to the changes in reality.

Table 21: Preparedness capacities and assessments

Member State	All organizations, personnel and volunteers in the preparedness system possess the required technical capacity to carry out essential elements and tasks for effective disaster response		Independent assessment of disaster preparedness capacities and mechanisms has been undertaken and responsibility for implementation of recommendations assigned and resourced	
	2015	2018	2015	2018
Algeria	3	4	3	4
Egypt	3	4	3	4
Libya	n/a	n/a	n/a	n/a
Mauritania	1	1	1	1
Morocco	1	1	1	1
Sahrawi Republic	n/a	n/a	n/a	n/a
Tunisia	2	3	2	3
North Africa	2	2.6	2	2.6

It is clear from the table above that Algeria and Egypt and to a lesser extent have made a significant improvement in preparedness. Algeria, Egypt and Tunisia provided sufficient information to show that they have well established disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programmes. Generally, the Civil Protection is in charge of the contingency planning and preparedness.

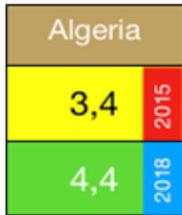
4.5 Additional Target 5: Substantially increase the number of regional networks or partnerships for knowledge management and capacity development, including specialized regional centres and networks

Only Periperi U network has been mentioned by Algeria. Several networks are working in DRR domain but unfortunately were not reported by the North Africa countries.

CHAPTER FIVE

COUNTRY-SPECIFIC REPORTING

5.1 ALGERIA



Disaster risk Profile

Algeria is a vulnerable country in relation to several risks. Its geographical position, in contrast with the collision of African and Eurasian tectonic plates, makes it a seismic risk territory, with three deadly earthquakes in 1954, 1980 and 2003. The other most recurrent risks are the flood risk (400 million economic losses and 25 deaths in 2018 alone) and forest fires with losses of 53 000 ha in 2017. Algeria recorded 80 disasters during the period 2015-2018 which caused the loss of more 70 human lives, affected more than 650 others and caused economic losses reaching US\$ 61 million. In 2017-2018, disasters increased to 228, killing 214 people, affecting 5,448 others and caused damages of more than US\$ 60 million. Industrial and especially energy zones also constitute a vulnerable area for industrial and energy risks (24 deaths in Skikda in 2004 and losses estimated at billions of USD).

In order to contain these threats and strengthen its resilience, Algeria has since 1985 adopted a policy of major risk prevention and disaster management. This policy has been reinforced by other laws and regulations including the law 04-20, on the prevention of major risks and disaster management in the context of sustainable development promulgated in December 2004. This text constitutes the essential basis of legislation, laying down the main foundation of a policy giving an important part to the improvement of the knowledge of the risks, the development of the preventive information, the taking into account of the risks in the policy of development and implementation. Since 2015 and the adoption of the Sendai Framework, Algeria has started to adapt the national strategy to the Sendai action plan, in particular by implementing the four priorities as follows:

Priority 1:

- ✚ A greater role dedicated to science and technology,
- ✚ Upgrading of integrated national and local databases for disaster losses,
- ✚ Strengthening the resources of the research centers and studies on risks, particularly earthquakes and floods,
- ✚ Greater involvement of local universities in teaching, training and research,
- ✚ Continuous improvement of the early warning and response mechanisms,
- ✚ The preparation of the integration of curricula in the 3 levels of education and vocational training,
- ✚ State encouragement for the creation of startups focused on DRR.

Priority 2:

- ✚ The sustained preparation for updating the national strategy and launching the development of local strategies with the assistance of the United Nations Office for Harm Reduction of the Arab States,
- ✚ Greater empowerment of local authorities by giving them new tasks and strengthening their resources (new law on local authorities),
- ✚ The strengthening of the institutional base (new decree establishing delegations at the level of the wilaya (prefecture) and commune) and also inter-sectoral committees,
- ✚ A division of responsibilities between the different levels of the territorial administration,
- ✚ Better coordination between the different stakeholders,
- ✚ Greater involvement of the citizen with more awareness and mobilization (encouragement to create and strengthen associations).

Priority 3:

- ✚ Better use of the very important financial resources made available to RRC actions with better project maturity and accountability,
- ✚ Capacity building of special funds dedicated to the compensation and funding of studies devoted to prevention,
- ✚ Strengthening risk transfer mechanisms,
- ✚ Encouraging more productive participation of the private sector.

Priority 4:

- ✚ Strengthening the national crisis management unit and watch cells at all levels,
- ✚ The reinforcement of the means of intervention,
- ✚ The obligation to organize testing at all levels,
- ✚ Review of missions, upgrading of national capacities at different levels
- ✚ The permanent updating of the intervention plans and their digitization,
- ✚ Continuous upgrading of emergency stocks,
- ✚ Work to continuously improve recovery and reconstruction plans.

In 2018 and in order to remedy the weaknesses noted in various evaluations, a national conference bringing together the country's institutions, representatives of local authorities and all other stakeholders was organized by our ministerial department. Its main objectives were:

1. Mark a strong political commitment to mobilize the necessary means for active and efficient management of this problem;
2. Mobilize and sensitize all stakeholders around the implementation of the national policy;
3. Set the main lines for updating the national strategy and launching local strategies.

Sendai Framework for DRR Targets

Sendai Target A: Reduce disaster mortality:

2015-2016: 73 deaths

2017-2018: 314 deaths

Sendai Target B: Reduce the number of affected people:

2015-2016: 655 affected

2017-2018: 5,298 affected

Sendai Target C: Reduce direct disaster economic loss:

2015-2016: US\$ 61,459 million

2017-2018: US\$ 526,663 million

Sendai Target D: Reduce disaster damage to critical infrastructure and disruption of basic services:

Health facilities damaged or destroyed: 16

Education facilities damaged or destroyed: 80

Transport facilities damages or destroyed: 17

Sendai Target E: Increase the number of countries with DRR strategies:

Institutionalisation of DRR

	Yes	No	Notes
Does your country have a national DRR/DRM policy or legislation?	X		
Does your country have legislation/policies that seek to address the global and continental DRR target to reduce the number of people affected by disasters	X		
Does your country have legislation/policies that seek to address the global and continental DRR target to incorporate DRR in the country's educational systems at all levels?	X		Currently, we are working to strengthen this incorporation of DRR into school curricula at all levels.
Does your country have legislation/policies that seek to address the global and continental DRR target to reduce economic loss due to disasters?	X		

	Yes	No	Notes
Does your country have legislation/policies that seek to address the global and continental DRR target to reduce damage to critical infrastructure and disruption of basic services by disasters?	X		Good regulation has existed since 1981; it is constantly revised and updated.
Does your country have legislation/policies that seek to address the global and continental DRR target to integrate DRR in national sustainable development and climate change adaptation frameworks, mechanisms and processes?	X		
Does your country have legislation/policies that seek to address the global and continental DRR target to improve availability and access to early warning systems by the country's population?	X		
Does your country have legislation/policies that seek to address the global and continental DRR target to set up and ensure periodic testing of risk informed preparedness plans, response and post-disaster recovery and reconstruction mechanisms?	X		A new decree of February 2019 mandates simulations at all levels at least once a year. It does not support, however, the mechanisms of reconstruction
Does your country have legislation/policies that seek to address the global and continental DRR target to increase funding for DRR?	X		Algeria has a CAT-NAT insurance system and various funds. In addition, prevention and preparation programs are financed from the public funds and local budgets.
Does your country have a national DRR Strategy/Plan?	X		Launching the update of the national strategy
Is there a government institution/s responsible for Disaster Risk Reduction/Disaster Risk management?	X		The National Delegation for Major Risks, responsible for the evaluation of actions undertaken in this sector and for inter-sectoral coordination.
Does your country have a commission dealing with DRR/ DRM issues?	X		Parliamentary committees responsible for environmental issues exist.

Sendai Target F: Increase international cooperation to developing countries:

Algeria has developed international cooperation with several international organizations as UNDP, UNDRR, JICA, etc. as well as with countries as France, Japan, China, etc.

Sendai Target G: Increase the availability of and access to multi-hazard early warning systems:

There is no multi-hazard early warning system, but instead single early warning systems exist for hydro-meteorological hazards and earthquake risk.

Implementation of the Africa PoA Target

PoA Target 1: Substantially increase the number of countries with DRR in their educational systems at all levels, as both stand-alone curriculum and integrated into different curricula

Algeria did not make any progress in integrating DRR in education system. Some DRR courses are integrated into geography course in primary level.

PoA Target 2: Increase integration of DRR in national sustainable development and climate change adaptation frameworks, mechanisms and processes

DRR is integrated in the National Climate Plan and also in the National Scheme for territory development.

PoA Target 3: Substantially expand the scope and increase the number of sources for domestic financing in DRR Activity

Algeria reported that more than US\$ 2.5 have been used for DRR activities in Algeria, main for flood prevention.

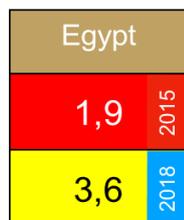
PoA Target 4: Increase the number of countries with, and periodically testing, risk- informed preparedness plans, and, response, and post-disaster recovery and reconstruction mechanisms

Periodical testing and risk informed preparedness are mandatory and integrated in the national contingency plan (ORSEC)

PoA Target 5: Substantially increase the number of regional networks or partnerships for knowledge management and capacity development, including specialized regional centres and networks.

Only Periperi U network was mentioned by Algeria. Periperi U is working in DRR capacity building, DRR outreach for government officials and National associations.

5.2 Arab Republic of Egypt



Disaster risk description

Egypt, as part of North African countries, is vulnerable to natural hazards and disasters caused by natural and man-made hazards, and disasters that have a significant impact on lives, livelihoods and property. Egypt is exposed to a variety of natural hazards, including floods, earthquakes, rockslides, sandstorms, and water scarcity, as well as epidemics and road accidents. The Major hazards are: Floods; Fires; Earthquakes; Sand storm; Drought; Water scarcity; Rockfall and landslides; Epidemics; Transportation-related hazards.

Sendai Framework for DRR Targets

Sendai Target A: Reduce disaster mortality:

2015-2016: 1,140 deaths

2017-2018: 6,813 deaths

Sendai Target B: Reduce the number of affected people:

2015-2016: 6,302 affected

2017-2018: 16,112 affected

Sendai Target C: Reduce direct disaster economic loss:

2015-2016: undetermined

2017-2018: undetermined

Sendai Target D: Reduce disaster damage to critical infrastructure and disruption of basic services:

No data was provided

Sendai Target E: Increase the number of countries with DRR strategies:

Institutionalisation of DRR

Upon updating and formulating the National Strategy for Disaster Risk Reduction (NSDRR), the Egyptian government focused on the international approaches in this area, most important of which include the Sendai Framework (2015–2030) adopted in March 2015 in the 3rd UN World Conference for DRR; the UN Sustainable Development Agenda (2015 – 2030) approved during

the UN Summit in September 2015 and the Paris Agreement on Climate Change approved in December 2015. In the context of the recent national developments as well as regional and international obligations, Egypt issued the NSDRR 2030 in order to fulfil these obligations and to upgrade its current national system for disaster risk reduction. To that end, the Egyptian government took a number of relevant measures and steps, including the preparation of the National Strategy for Crisis/Disaster Management and Disaster Risk Reduction as part of its earlier publications in 2010.

	Yes	No	Notes
Does your country have a national DRR/DRM policy or legislation?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to reduce the number of people affected by disasters	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to incorporate DRR in the country's educational systems at all levels?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to reduce economic loss due to disasters?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to reduce damage to critical infrastructure and disruption of basic services by disasters?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to integrate DRR in national sustainable development and climate change adaptation frameworks, mechanisms and processes?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to improve availability and access to early warning systems by the country's population?		x	
Does your country have legislation/policies that seek to address the global and continental DRR target to set up and ensure periodic testing of risk informed preparedness plans, response and post-disaster recovery and reconstruction mechanisms?	x		

	Yes	No	Notes
Does your country have legislation/policies that seek to address the global and continental DRR target to increase funding for DRR?		x	
Does your country have a national DRR Strategy/Plan?	x		National Strategy for Disaster Risk Reduction 2030
Is there a government institution/s responsible for Disaster Risk Reduction/Disaster Risk management?	x		
Does your country have a commission dealing with DRR/ DRM issues?	x		
Does your country have a national DRR platform	x		
Does your country have a parliamentary subcommittee dealing with DRR/ DRM issues?	x		

Sendai Target F: Increase international cooperation to developing countries:

Egypt has developed international cooperation with several international organizations as UNDP, UNDRR, JICA, etc. as well as with countries as France, Japan, China, etc.

Sendai Target G: Increase the availability of and access to multi-hazard early warning systems:

There is no multi-hazard early warning system, but instead single early warning systems exist for hydro-meteorological hazards and earthquake risk.

Implementation of the Africa PoA Target

PoA Target 1: Substantially increase the number of countries with DRR in their educational systems at all levels, as both stand-alone curriculum and integrated into different curricula

Egypt did not make any progress in integrating DRR in education system.

PoA Target 2: Increase integration of DRR in national sustainable development and climate change adaptation frameworks, mechanisms and processes

DRR is integrated in the National Climate Plan and also in the National Development Plan.

PoA Target 3: Substantially expand the scope and increase the number of sources for domestic financing in DRR Activity

No data was provided

PoA Target 4: Increase the number of countries with, and periodically testing, risk- informed preparedness plans, and, response, and post-disaster recovery and reconstruction mechanisms

Egypt made very good progress in risk-informed preparedness and periodically testing and response

PoA Target 5: Substantially increase the number of regional networks or partnerships for knowledge management and capacity development, including specialized regional centers and networks.

No data was provided

5.3 LIBYA

Libya	
n/a	2015
n/a	2018

Disaster risk profile

Libya is subject to Earthquakes, Floods, Food insecurity, drought and climate change. Flood in 1995 caused damage totaling US\$42.2 million. Due to food insecurity, in 1990s, Libya imported 60 percent of its food. The country is also subject to drought. Climate change is increasing vulnerability of livestock because of lack of water resources and loss of grazing sites; increasing salinity in the northern area. The earliest records of earthquakes in Libya is documented back from the Roman period when two large earthquakes (262 A.D. and 365 A.D) destroyed most of the temples and public buildings of Cyrene. A number of earthquakes that affected Libya in the Middle Ages include the 704 A.D. earthquake of Sabha (southern Libya) which reportedly destroyed several towns and villages. In 1183 A.D., a powerful earthquake destroyed Tripoli, killing 20,000 people. Mild tremors were felt in Tripoli in 1803, 1811 and 1903 A.D. The Hun Graben area was the site of several earthquakes throughout history, in April 19 -1935 a great earthquake (mb=7.1) hit this area, followed by a very large number of aftershocks including two of magnitudes 6.0 and 6.5 on the Richter scale. In 1941 a major earthquake of magnitude 5.6 hit the Hun Graben area. In 1939 an earthquake of magnitude 5.6 occurred in the Gulf of Sirt area, followed by a number of aftershocks. The Major hazards are: flood, Earthquake, Drought, Food insecurity, Climate change, Locust, Erosion, etc.

Sendai Framework for DRR Targets

Sendai Target A: Reduce disaster mortality:

2015-2016: 3,151 deaths

2017-2018: 875 deaths

Sendai Target B: Reduce the number of affected people:

2015-2016: 2,737 affected

2017-2018: 467 affected

Sendai Target C: Reduce direct disaster economic loss:

2015-2016: undetermined

2017-2018: undetermined

Sendai Target D: Reduce disaster damage to critical infrastructure and disruption of basic services:

No data was provided

Sendai Target E: Increase the number of countries with DRR strategies:

Institutionalisation of DRR

No data provided

Sendai Target F: Increase international cooperation to developing countries:

Sendai Target G: Increase the availability of and access to multi-hazard early warning systems:

No data provided

- **No data was provided on achievement of the PoA Additional targets**

5.4 MAURITANIA



Disaster risk description

Mauritania is a country whose risk profile is strongly linked to its geographical position, its desert environment and its human actions. Indeed, nearly 80% of the surface of Mauritania is located north of the 17th parallel, two-thirds of the territory occupied by the Sahara Desert. The country therefore has a Saharan-type climate with low and irregular rainfall, with significant inter-annual variations ranging from 20 to 50 mm in the north and 400 to 500 mm in the south during the period 1970-1988. The long droughts that hit the Sahel in the 1970s hit Mauritania hard, with rainfall falling by 30-60% depending on the agro-ecological areas. These successive droughts resulted in an extension of the desert over an additional 150 000 km², or 15% of the territory, between 1974 and 2004. The resulting consequence is undoubtedly the worsening of the degradation of the ground and the vegetation cover (50% decrease of the areas occupied by the forests), the destruction of a large part of the pastures of the country.

More recently, the 2011 drought resulted in a 40% reduction in crop yield compared to the previous five-year average, and had a negative impact on food security for nearly 800,000 people, according to WFP estimates.

Mauritania's disaster risk profile is closely linked to its environmental characteristics and climatic factors. All these phenomena are now exacerbated by the acceleration of climate change, poorly mastered urbanization, especially in the capital, and the movements of people in search of better living environments.

In addition, the mining and industrial development of Mauritania and its entry into the oil era exposes the country to new major risks. In terms of infrastructure too, the real estate boom and increased public and private investment also create underlying risks to development.

Sendai Framework for DRR Targets

Sendai Target A: Reduce disaster mortality:

2015-2016: 14 deaths

2017-2018: 20 deaths

Sendai Target B: Reduce the number of affected people:

2015-2016: 20 affected

2017-2018: 4,246,466 affected

Sendai Target C: Reduce direct disaster economic loss:

2015-2016: undetermined

2017-2018: undetermined

Sendai Target D: Reduce disaster damage to critical infrastructure and disruption of basic services:

No data was provided

Sendai Target E: Increase the number of countries with DRR strategies:

Institutionalisation of DRR

No data provided

Sendai Target F: Increase international cooperation to developing countries:

Mauritania reported international cooperation with UNDRR

Sendai Target G: Increase the availability of and access to multi-hazard early warning systems:

There is no multi-hazard early warning system, but instead single early warning systems exist for hydro-meteorological hazards

Implementation of the Africa PoA Target

PoA Target 1: Substantially increase the number of countries with DRR in their educational systems at all levels, as both stand-alone curriculum and integrated into different curricula

Mauritania did not make any progress in integrating DRR in education system.

PoA Target 2: Increase integration of DRR in national sustainable development and climate change adaptation frameworks, mechanisms and processes

No data provided

PoA Target 3: Substantially expand the scope and increase the number of sources for domestic financing in DRR Activity

No data was provided

PoA Target 4: Increase the number of countries with, and periodically testing, risk- informed preparedness plans, and, response, and post-disaster recovery and reconstruction mechanisms

No data provided

PoA Target 5: Substantially increase the number of regional networks or partnerships for knowledge management and capacity development, including specialized regional centers and networks.

No data was provided

5.5 MOROCCO



Disaster risk description

In terms of natural hazards, Morocco, because of its geographical location, is exposed to climatic, meteorological, geological or biological phenomena that can manifest major risks such as floods, torrential floods, earthquakes and landslides. The situation of these natural phenomena can lead to significant damage or even to the socio-economic development of regions exposed to natural disasters. With regard to technological risks, and in recent years, there has been an increase in the number of polluting industries whose operation may have an impact on human health and the environment. In some cases, the geographical location of industries is a factor aggravating the risk of accidents due to their location in an area exposed to natural disasters (earthquake, floods).

The technological risks are scattered throughout the territory with a particular concentration of chemical risks on Safi and Casablanca, which poses a permanent and latent risk on the populations as well as on the fauna and the flora. However, no real census of the accidents that occurred exists. According to the Directorate of Civil Protection of the Ministry of the Interior identifies risks' mapping the major hazards are: Flooding; Earthquake; landslide and subsidence; forest fires; Locust invasions; drought and water shortages and Erosion and desertification.

Sendai Framework for DRR Targets

Sendai Target A: Reduce disaster mortality:

2015-2016: 34 deaths

2017-2018: 48 deaths

Sendai Target B: Reduce the number of affected people:

2015-2016: 750,000 affected

2017-2018: 1,720,078 affected

Sendai Target C: Reduce direct disaster economic loss:

2015-2016: undetermined

2017-2018: undetermined

Sendai Target D: Reduce disaster damage to critical infrastructure and disruption of basic services:

No data was provided

Sendai Target E: Increase the number of countries with DRR strategies:

Institutionalisation of DRR

	Yes	No	Notes
Does your country have a national DRR/DRM policy or legislation?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to reduce the number of people affected by disasters	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to incorporate DRR in the country's educational systems at all levels?		x	
Does your country have legislation/policies that seek to address the global and continental DRR target to reduce economic loss due to disasters?			
Does your country have legislation/policies that seek to address the global and continental DRR target to reduce damage to critical infrastructure and disruption of basic services by disasters?		x	
Does your country have legislation/policies that seek to address the global and continental DRR target to integrate DRR in national sustainable development and climate change adaptation frameworks, mechanisms and processes?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to improve availability and access to early warning systems by the country's population?		x	
Does your country have legislation/policies that seek to address the global and continental DRR target to set up and ensure periodic testing of risk informed preparedness plans, response and post-disaster recovery and reconstruction mechanisms?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to increase funding for DRR?		x	
Does your country have a national DRR Strategy/Plan?			Ongoing

	Yes	No	Notes
Is there a government institution/s responsible for Disaster Risk Reduction/Disaster Risk management?			Ongoing
Does your country have a commission dealing with DRR/ DRM issues?		x	

Sendai Target F: Increase international cooperation to developing countries:

Morocco reported international cooperation with International institutions, World Bank, Switzerland, JICA, OCDE, etc.

Sendai Target G: Increase the availability of and access to multi-hazard early warning systems:

There is no multi-hazard early warning system, but instead single early warning systems exist for hydro-meteorological hazards and earthquake risk.

Implementation of the Africa PoA Target

PoA Target 1: Substantially increase the number of countries with DRR in their educational systems at all levels, as both stand-alone curriculum and integrated into different curricula

Morocco did not make any progress in integrating DRR in education system.

PoA Target 2: Increase integration of DRR in national sustainable development and climate change adaptation frameworks, mechanisms and processes

Morocco is integrating DRR in national sustainable development.

PoA Target 3: Substantially expand the scope and increase the number of sources for domestic financing in DRR Activity

No data was provided

PoA Target 4: Increase the number of countries with, and periodically testing, risk- informed preparedness plans, and, response, and post-disaster recovery and reconstruction mechanisms

The civil protection is conducting periodically testing.

PoA Target 5: Substantially increase the number of regional networks or partnerships for knowledge management and capacity development, including specialized regional centers and networks.

No data was provided

5.6 Sahrawi Arab Democratic Republic (SADR)

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Disaster risk description

Na data provided or found

Progress in SFDRR targets:

Na data provided

Progress in Africa PoA targets:

No data provided

5.7 TUNISIA



Disaster risk description

Tunisia is potentially exposed to the occurrence of multiple disasters because of its natural and anthropogenic environment. It faces diverse risks from earthquake hazards, locust invasion, propagation of human and animal epidemics, forest fires, atmospheric disturbances (storms at sea, sand storms, snow and violent storms). However, flood and drought are the most feared risks. Tunisia has suffered to varying degrees from several natural and environmental disasters such as floods, recurring droughts, forest fires, earthquakes, locust invasion, and other technological disasters. Risks related to global warming and the emergence of some new risks have been noted. Among the most visible and long-lasting consequences affecting Tunisia are desertification, deforestation, erosion, increased vulnerability and environmental degradation. The major hazards are Flood, Fire, Snow, Earthquakes, Technological and industrial

Sendai Framework for DRR Targets

Sendai Target A: Reduce disaster mortality:

2015-2016: 18 deaths

2017-2018: 13 deaths

Sendai Target B: Reduce the number of affected people:

2015-2016: 98 affected

2017-2018: 32,000 affected

Sendai Target C: Reduce direct disaster economic loss:

2015-2016: undetermined

2017-2018: undetermined

Sendai Target D: Reduce disaster damage to critical infrastructure and disruption of basic services:

No data was provided

Sendai Target E: Increase the number of countries with DRR strategies:

Institutionalisation of DRR

According to the data provided, Tunisia has made very good progress in institutionalising DRR.

	Yes	No	Notes
Does your country have a national DRR/DRM policy or legislation?	x		Adapted 2018
Does your country have legislation/policies that seek to address the global and continental DRR target to reduce the number of people affected by disasters?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to incorporate DRR in the country's educational systems at all levels?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to reduce economic loss due to disasters?	X		
Does your country have legislation/policies that seek to address the global and continental DRR target to reduce damage to critical infrastructure and disruption of basic services by disasters?	X		
Does your country have legislation/policies that seek to address the global and continental DRR target to integrate DRR in national sustainable development and climate change adaptation frameworks, mechanisms and processes?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to improve availability and access to early warning systems by the country's population?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to set up and ensure periodic testing of risk informed preparedness plans, response and post-disaster recovery and reconstruction mechanisms?	x		
Does your country have legislation/policies that seek to address the global and continental DRR target to increase funding for DRR?	x		
Does your country have a national DRR Strategy/Plan?	x		2018-2020

	Yes	No	Notes
Is there a government institution/s responsible for Disaster Risk Reduction/Disaster Risk management?	x		Ministry of Interior/National Office of Civil Protection (ONPC) – Ministry of Local Affaires Environment (MALE) (point focal Point of SFDRR)
Does your country have a parliamentary subcommittee dealing with DRR issues?	x		

Sendai Target F: Increase international cooperation to developing countries:

Tunisia reported international cooperation with International institutions, World Bank, France, JICA, etc.

Sendai Target G: Increase the availability of and access to multi-hazard early warning systems:

There is no multi-hazard early warning system, but instead single early warning systems exist for hydro-meteorological hazards and earthquake risk.

Implementation of the Africa PoA Target

PoA Target 1: Substantially increase the number of countries with DRR in their educational systems at all levels, as both stand-alone curriculum and integrated into different curricula

Tunisia made good progress in integrating DRR in education system.

PoA Target 2: Increase integration of DRR in national sustainable development and climate change adaptation frameworks, mechanisms and processes

Tunisia is integrating DRR in national sustainable development.

PoA Target 3: Substantially expand the scope and increase the number of sources for domestic financing in DRR Activity

No data was provided

PoA Target 4: Increase the number of countries with, and periodically testing, risk- informed preparedness plans, and, response, and post-disaster recovery and reconstruction mechanisms

The civil protection is conducting periodically testing.

PoA Target 5: Substantially increase the number of regional networks or partnerships for knowledge management and capacity development, including specialized regional centers and networks.

No data was provided

CHAPTER SIX

CHALLENGES AND RECOMMENDATIONS

6.1 Challenges

The analysis of this report illustrates the real status of the North Africa countries in terms of SFDRR and Africa PoA data collection and reporting. The biggest challenge in this first biennial report on the progress of implementation of the SFDRR and Africa PoA targets is the deficiency and incompleteness or lack of data from the field. Additionally, the data provided lacks of reliability and quality and sometimes homogeneity. The findings of this first North Africa report may therefore not be fully representative of the DRR status in the region and thus should be used carefully. Several representatives of countries recognized the difficulties to obtain the data from other sector departments. A protocol of collecting disaster data loss should be clearly defined and make all the sectors comply strictly with it.

6.2 Recommendations

Recommendations are made according to the data provided and findings in this North Africa report as follows:

- ✚ Scientists should be more involved in DRR in North Africa countries
- ✚ Need of capacity building for DRR knowledge for the practitioners,
- ✚ Needs assessment on disaster loss data collection for a better design of a capacity building in the subject.
- ✚ A national DRR database should be established where all the DRR information must be collected and validated in a continuous way which will make national data available when needed,
- ✚ Collect disaggregated data on gender, age, children, abilities and vulnerable groups.
- ✚ Update the skills and expertise for the staff in charge of DRR in the countries 'administrations,
- ✚ Significant support is needed for national DRR structures to report on losses and DRR funding
- ✚ North African countries should establish a joint plan of action for the region
- ✚ North African countries should meet face to face for a better and effective cooperation.
- ✚ Scientists and policy-makers should work together for better DRR solutions.
- ✚ Strengthening of human and material resources,
- ✚ Obligation to organize drills at all levels
- ✚ Mission and responsibility update, upgrading of national capacities at different levels
- ✚ Permanently updating contingency plans and their digitization,
- ✚ Continuous updating of emergency stocks,
- ✚ Improve continuously the preparedness, recovery and reconstruction plans in "Build Back Better".

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