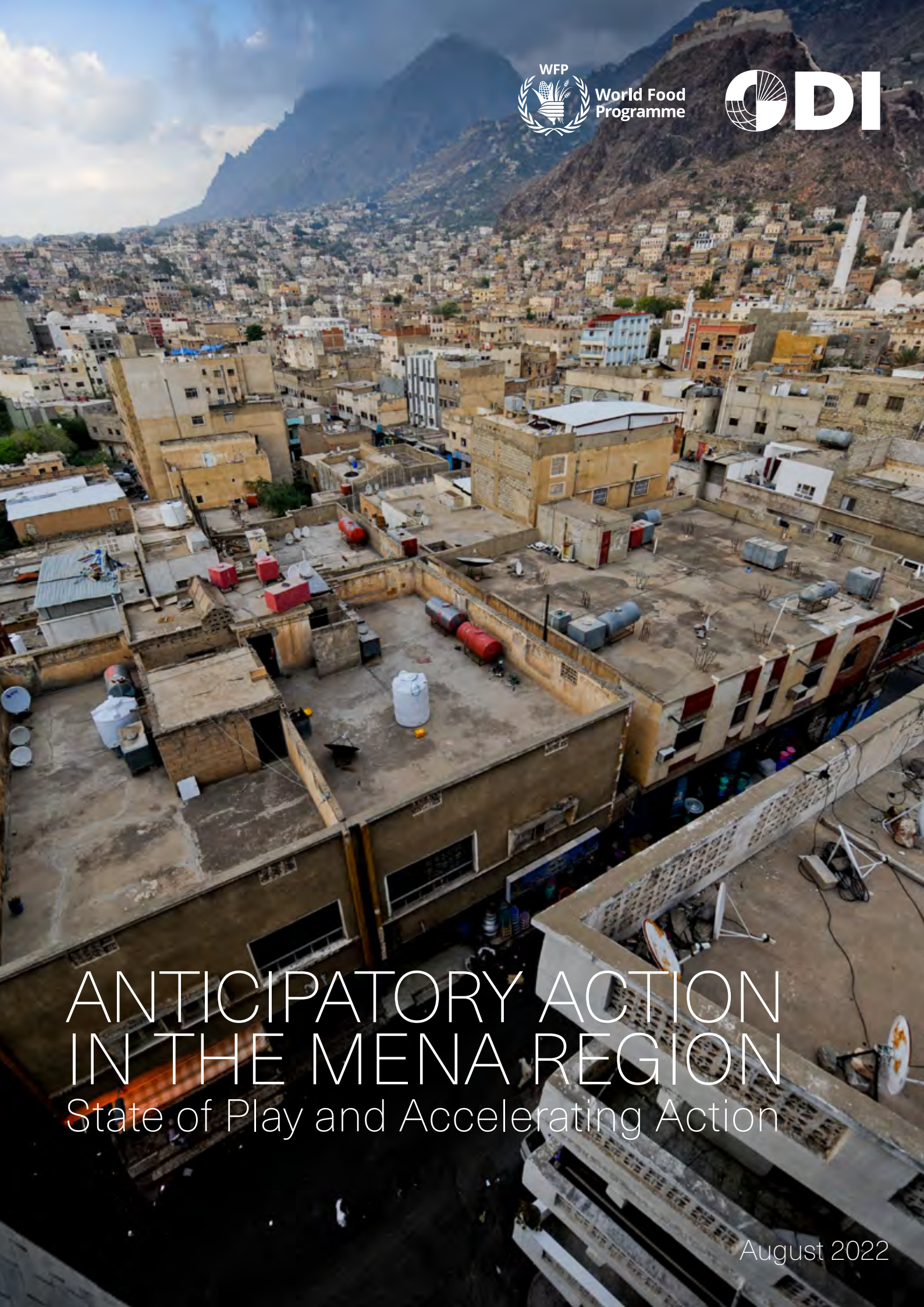

WFP World Food Programme

ODI

ANTICIPATORY ACTION IN THE MENA REGION

State of Play and Accelerating Action

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Cover photo: WFP/Micah Albert.

About this publication

This report summarizes the findings of a WFP-commissioned project called 'Research on AA in the Arab region: state of play and accelerating action'. It establishes a baseline of AA capacities and experiences in the MENA region.

The publication also provides an overview of opportunities and challenges for AA in the MENA region, in order to produce compelling options and evidence to inform decision-makers about AA in the context of MENA. The aim of this study is that it will serve as a foundation stone for future action on AA throughout the region. More in-depth information on individual countries can be found in the country compendium accompanying this report.

This product is one of the outputs of the 'SDG-Climate Facility: Climate Action for Human Security' project. With financial support from the Swedish International Development Agency (Sida), the project is a multi-partner platform focusing on the impacts of climate change on human security in the Arab region, especially in the context of countries in crisis. It brings together the League of Arab States (LAS), Arab Water Council (AWC), United Nations Development Programme (UNDP), United Nations Environment Programme - Finance Initiative (UNEP FI), World Food Programme (WFP), United Nations Office for Disaster Reduction (UNDRR), and United Nations Human Settlements Programme (UN-Habitat), to deliver climate-oriented solutions that address climate challenges and bring co-benefits across the SDGs. In doing so, it aims to scale up access to and delivery of climate finance, including through innovative partnerships with the private sector.

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Executive Summary

Photo: WFP/Hebatallah Munassar

Anticipatory action in the MENA region

Anticipatory action, or AA, is rapidly gaining momentum. While most disaster response and humanitarian operations are still mobilised after the onset of a crisis, AA refers to actions taken before a disaster to mitigate its most damaging impacts and to speed up recovery. These actions are set in motion and informed by forecasts and other early warning information before a hazard strikes, or before a hazard event develops into a disaster. As such, AA is different from, but complementary to, regular and longer term disaster risk reduction (DRR) and seasonal preparedness activities. Improved early warning systems (EWSs), which build on continued enhancements in forecasts for different types of hazards, combined with vulnerability and risk assessments, make it possible to trigger funding for the implementation of predefined and pre-planned actions during that window of opportunity.

As global interest in AA increases, governments, UN and humanitarian agencies are becoming more interested in its potential added value for the Middle East and North Africa (MENA)[1] region. However, to date, there has been no concentrated attention paid to the progress and potential for AA across the region, and little documentation of where AA initiatives have been trialled. Evidence from existing AA interventions globally indicates possible benefits and costs of AA, although more analysis is required of the potential for adopting AA at scale in MENA countries.

Given the extent of humanitarian action in the region, there is great hope that applying lessons from the global experience, as well as bringing experiences from the MENA region to the fore, will help advance this agenda. This study presents a first attempt to fill that gap by focusing explicitly on AA in the MENA region.

1 Defined here as: Algeria, Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates, West Bank and Gaza, and Yemen.

The four components of anticipatory action

AA has a number of key components: forecasting and risk information; planning; financing; and delivery. This report summarises the current state of each of these components, as well as on AA more broadly, in eight countries across the MENA region: Egypt, Iraq, Lebanon, Morocco, Sudan, Syria, Tunisia and Yemen.

1 Forecasting, risk information and early warning systems

Real-time observation of meteorological and hydrological hazards is improving in most countries in the region, with networks of weather stations and data records in relatively good state in Jordan, Lebanon, Morocco and Tunisia. Weather and climate forecasting is also maturing overall, even though gaps still exist in the capacity of national hydro-meteorological services that inhibit the use of existing weather and climate forecasts for early warning and AA. This includes insufficient downscaling and customisation of forecasts, as well as a lack of assessments of forecast accuracy, which can be impeded by incomplete historical records of impacts from past events.

At regional and global levels, humanitarian information and EWSs monitor and project information on risks that are not primarily – or not exclusively – related to hydrological or meteorological hazards. While there is some experience using these mechanisms to support AA, e.g. the Integrated Food Security Phase Classification (IPC) in Somalia, they are available in few MENA countries and the infrequency of updates, lack of projection capacity and limited integration within more comprehensive EWSs are making them challenging to apply to AA.

Across all MENA countries included in this study, database maintenance and updates, data sharing and collaboration across institutions and countries is an ongoing challenge. Unclear or overlapping mandates, along with limited exchange of information across institutions within and beyond government, hamper multi-hazard risk analysis and forecasting, in turn undermining the effectiveness of EWSs to enable action.

In the region, as well as globally, efforts towards establishing multi-hazard early warning systems (MHEWSs) have mostly remained focused on different meteorological and hydrological hazards such as floods and droughts, so even if they are 'multi'-hazard, they largely concentrate on a narrow hazard cluster and tend not to include as biological or societal hazards.

Momentum is growing for enhancing the recognition of conflict in AA in the humanitarian community, but conflict analysis is a still a major shortcoming in AA and predicting conflict and its effects remains a challenge.

2 Planning

There are numerous examples of new disaster strategies and policies that help lay the foundations for action on disaster risk management (DRM) as a whole, such as in Jordan, Tunisia and Lebanon. Unfortunately, there are also many examples where the implementation of legal and regulatory frameworks has been stalled due to lack of official clearance or ratification by government, such as in Lebanon and Sudan.

AA is often more prevalent in sectoral and hazard-specific plans and strategies, or individual projects, rather than as part of a robust systematic approach to planning for AA across all hazards within a country. In all countries studied in this report, there remain challenges in working across sectors and ministries, which limits the ability to transform hazard-specific actions into a robust multi-hazard AA system.

In some countries, such as Yemen, the complex and changeable political arrangements and sub-national conflict situation are reflected in the complexities of the landscape for disaster risk governance, and present barriers to advancing planning processes. Moreover, across the region, the instigation or escalation of violent and armed conflict within and between countries presents significant challenges to enacting more systematic planning on AA – and can even lead to reversals in progress.

Looking ahead there are possible entry points for improving planning, including in Jordan, Sudan, Tunisia, Yemen and Iraq (details in the chapter). There is also potential for applying lessons from AA planning outside the MENA region and in using climate funds to enhance climate and disaster planning processes.

3 Financing

Some MENA countries included in this study have strategies or legislative frameworks that stipulate that government budget must be allocated to DRR and DRM systems, which provides a basis for the implementation of AA. In practice, however, such strategies are not always implemented, nor are the resources they aim to earmark used consistently. Overall, DRM remains largely underfunded in the region.

Government emergency funds at national or sub-national level exist in some countries, though these are largely responsive rather than anticipatory. Most do not have standard budget allocations for risk management and response, while in some cases where contingency funds exist, criteria for the allocation and use of these funds are unclear or not systematically implemented.

AA initiatives implemented by international and development organisations in the region have used dedicated funds, or specified early action windows in larger disaster and crisis response funds, to release resources for implementing AA on the basis of

advance warnings for drought and displacement.

At international level, a surge in initiatives linked to financing AA – including the Risk-informed Early Action Partnership (REAP), the InsuResilience Global Partnership and the Crisis Lookout Coalition – should provide opportunities for countries in the region to explore financial instruments that might be efficient, timely and sizable enough to support the implementation of AA at scale. Climate finance, including through multilateral climate funds, has already helped progress the individual component parts of AA, for instance funding improvements in weather forecasting and EWSs in Sudan. Overall, public and private climate finance to the region has been concentrated on mitigation rather than adaptation. Nonetheless, the example from Sudan highlights the role climate adaptation finance may be able to play in strengthening the foundations for AA in the future.

4 Delivery

While many countries across the region have well-described institutional structures for DRM, the capacity to deliver on their mandates, or to enact ideas and intentions, is often constrained by lack of technical capacity, sufficient and/or flexible enough financing, and/or mandated authority. This particularly an issue when needing to instruct other sectors or ministries to work collaboratively together, as in Yemen, Egypt and Iraq. Of the numerous barriers that exist to progress AA, the lack of routine and reliable funding particularly impedes the delivery of DRM plans across the MENA region.

Throughout the region, learning and documentation of lessons on what makes for effective delivery of preparedness and AA is limited. The establishment of a robust monitoring, evaluation and learning (MEL) framework for AA would be extremely valuable and go some way toward addressing this gap.

Social protection offers an important avenue to facilitate the delivery of AA in the form of direct assistance to households. National social protection programmes exist in some form across all countries; although not all mention disaster risks and, where they do, they focus primarily on providing support as part of post-disaster response.

There is plenty of potential to adapt existing and emerging social protection mechanisms to advance AA, including through: the reapplication of lessons on the digitisation of social protection mechanisms to a broader range of countries; leveraging existing mechanisms to expand the range of shocks and threats addressed; and bringing support forward (to be more pre-emptive) through the integration with EWSs and greater attention to longer term trends in vulnerabilities and risks.

Key findings

AA represents an important opportunity in the MENA region because of its potential to help avoid and reduce the impacts of disasters, which are expected to become more frequent and intense as a result of climate change and conflict. However AA is still nascent within the region, so there are multiple challenges that need to be navigated. To address the breadth of risks that countries face, there is a need to invest in AA so that it can operate effectively in the context of, and potentially in response to, conflict and economic shocks.

Social protection mechanisms are an important opportunity for AA given their prominence in the region. Such mechanisms could be matured to help bridge the transition from humanitarian to development support, since there is ample scope for them to be adapted to become more shock-responsive and anticipatory. All such changes would align with the regional and global shift to adopting risk-informed approaches to humanitarian and development action, to evolving the risk finance architecture to better reflect current and future risk trajectories, and to take heed of current crises such as Covid-19 to better finance and action risk management for a range of threats.

Building on country-level information and analysis of the component parts of AA, this report makes the following key findings on the state of play of AA in the MENA region:

- Efforts are being made to enhance forecasting and risk information. However limited capacity, coordination and a lack of translating early warning information into early action are evident.
- Important foundations for risk management are not in place in many countries in the region, which presents a challenge for advancing AA.
- Despite the nascent state of AA in the region, a continuum of options are available to help advance AA, ranging from incremental changes to full reform of disaster risk management systems.
- Conflict contexts in the region present additional challenges to advancing AA, particularly as many institutions and systems that provide a critical basis for AA have been significantly weakened by protracted conflict, political change or contestation. Some progress has been made to integrate elements of AA into humanitarian response planning.
- Limited coordination across and beyond government institutions, and insufficient understanding of available capacities, are undermining the operationalisation of AA.
- There are a number of examples across the region of components of AA being enhanced through access and use of climate funds.
- There are existing initiatives and processes, as well as upcoming opportunities, for agencies, regional bodies and donors to engage with and invest in AA advancement in the MENA region.

Recommendations

Recommendations for accelerating AA across the MENA region require action to generate a better understanding of the barriers, opportunities and entry points for AA in conflict contexts. Cross-technical working between DRR, development and humanitarian expertise is required, as is support for national disaster management agencies to further adapt existing systems to incorporate AA. Investment is also required to ensure robust monitoring, evaluation and learning about AA in the region. Ultimately, dedicated funding to prioritise AA in the context of broader efforts to reduce and manage disaster risk, and to enhance preparedness, will be required.

Finally, dedicated political and technical spaces need to be provided at national and regional levels for government and non-government stakeholders to share their experiences of AA and to strategise future work in this area. Advocacy and collaborative learning with national and sub-national institutions about what AA looks like in a particular country will be needed to build a common understanding of AA and its potential value for that country, and a knowledge of how it will operate at a policy level.

The following recommendations build on and aim to address the key findings of this report:

1. Enhancing forecasting and early warning systems to enable timely action is relevant for the MENA region and should be part of an agenda that accelerates and scales up AA.
2. Increasing awareness and a better understanding of the benefits, costs and opportunities of AA will be necessary to integrate it into broader risk management efforts in the region.
3. For AA to be effective, foundational investments in risk management are needed, particularly in relation to policies, planning and coordination of AA to mitigate predictable risks.
4. Specific support is required for capacity building and decision-making processes at national level to strengthen the use of early warning and forecasting systems for AA.
5. Greater emphasis is needed on understanding conflict and economic shocks as key risks in the region, and the potential of AA to help address them.
6. Existing systems that support vulnerable groups (such as social protection and humanitarian safety nets) should be further explored as mechanisms to deliver AA.
7. A mixed financing approach is likely needed for AA. Decision-makers in the region should actively engage in global funding opportunities and negotiations to highlight region-specific requirements and vulnerabilities.
8. Support to governments for enhancing AA capacity at national level must be coordinated and coherent in order to be effective.
9. Processes and systems to support improvement in design and delivery of AA,and to help demonstrate results, will need to be strengthened.

Photo: WFP/Joelle Eid

Acronyms

MENA	Middle East and North Africa
AA	Anticipatory action
AGIR	Arab Geographical Information Room
ARC	African Risk Capacity
ARRCC	Asia Regional Resilience to a Changing Climate
ASDF	Arab Sustainable Development Forum
ASDW	Arab Sustainable Development Week
CADRI	Capacity for Disaster Reduction Initiative
CBPF	Country-based pooled funds
CDI	Composite Drought Index
CERF	Central Emergency Response Fund
CIC	Climate Information Centres
CMS	Climate monitoring stations
CNRPS	Caisse Nationale de Retraite et de Prévoyance Sociale
CNRS	National Council for Scientific Research
CNSS	Caisse Nationale de Sécurité Sociale
DAP	Drought Action Plan
DGRE	Direction Générale des Ressource en Eau (Tunisia)
DMU	Drought monitoring unit
DRM	Disaster risk management
DRR	Disaster risk reduction
DTC	Drought Technical Committee
DTM	Displacement Tracking Matrix (International Organization for Migration)
ECMWF	European Centre for Medium-Range Weather Forecasts
ECRP	Emergency Crisis Response Project
EOC	Emergency operation centre
ESCWA	Economic and Social Commission for Western Asia
ESSN	Emergency Crisis and Covid-19 Response Social Safety Net Project
EU	European Union
EWARN	Multi-Hazard Early Warning and Mitigation Centre
EWEA	Early warning early action
EWS	Early warning system
FAM	Famine Action Mechanism
FAO	Food and Agriculture Organization of the United Nations
FbA	Forecast-based action
FbF	Forecast-based financing
FCDO	Foreign, Commonwealth and Development Office
FCN	Fonds des Catastrophes Naturelles (Tunisia)
FEWSNET	Famine Early Warning Systems Network
FLAFLOM	Flash Flood Manager
FNG	Fond National de Garantie
FSTS	Food Security Technical Secretariat
GCF	Green Climate Fund
GDP	Gross domestic product
GFDRR	Global Facility for Disaster Reduction and Recovery
GHACOF	Greater Horn of Africa Climate Outlook Forum
GPCLRF	Global Producing Centre for Long-Range Forecasts
GSMA	Global System for Mobile Communications Association
HAC	Humanitarian Aid Commission
HNO	Humanitarian Needs Overview
HRP	Humanitarian Response Plan
IASC	Inter-Agency Standing Committee
IBC-SP	Issue-based Coalition on Social Protection
ICARDA	International Center for Agricultural Research in the Dry Areas
ICBA	International Center for Biosaline Agriculture
ICPAC	Intergovernmental Authority on Development Climate Prediction and Applications Centre
ICRC	International Committee of the Red Cross
IDMC	Internal Displacement Monitoring Centre
IDMP	Integrated Drought Management Programme
IDP	Internally displaced people
IDSC	Information and Decision Support Center (Egypt)
IFRC	International Federation of Red Cross and Red Crescent Societies
IFRR	Integrated Famine Risk Reduction
IMF	International Monetary Fund
IMWI	International Water Management Institute
INFORM	Index for Risk Management
INM	Institut National de Météorologie (Tunisia)
IOM	International Organization for Migration
IPC	Integrated Food Security Phase Classification
IPCC	Intergovernmental Panel on Climate Change
ITES	Institut Tunisien des Etudes Stratégiques (Tunisia)
JCMC	Joint Coordination and Monitoring Centre
JMD	Jordan Meteorological Department (Jordan)
LARI	Lebanese Agricultural Research Institute (Lebanon)
LAS	League of Arab States
LCRP	Lebanon Crisis Response Plan
LDCF	Least Developed Countries Fund
CaLP	Cash Learning Partnership
MEL	Monitoring, evaluation and learning
MHEWS	Multi-hazard early warning systems
MoIWR	Ministry of Irrigation and Water Resources
MOPIC	Ministry of Planning and International Cooperation
MWI	Ministry of Water and Irrigation
NARC	National Agricultural Research Center (Jordan)
NASA	National Aeronautics and Space Administration
NCAR	National Center for Atmospheric Research
NCCD	National Council for Combating Desertification
NCEP	National Centers for Environmental Prediction

NCSCM	National Committee for Security and Crisis Management
NGO	Non-governmental organisation
NMHS	National meteorological and hydrological services
NOAA	National Oceanic and Atmospheric Administration
NPRP	National Preparedness and Response Plan
NPTP	National Poverty Targeting Programme
NSDRR	National Strategy for Disaster Risk Reduction (Egypt)
NWP	Numerical weather prediction
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
OECD	Organisation for Economic Co-operation and Development
OIEWG	Open-ended Intergovernmental Expert Working Group on Indicators and Terminology Related to Disaster Risk Reduction
ONPC	Office National de la Protection Civile
PDNA	Post-disaster needs assessment
PDTRA	Petra Development and Tourism Region Authority
PRESANORD	Prévisions Climatiques Saisonničres en Afrique du Nord
RCC	Regional climate centre
RCOF	Regional Climate Outlook Forum
RDMS	Regional Drought Monitoring System
REAP	Risk-informed Early Action Partnership
RICCAR	Regional Initiative for the Assessment of Climate Change impacts on Water Resources and Socio Economic Vulnerability in the Arab Region
RIMES	Regional Integrated Multi-Hazard Early Warning System for Africa and Asia
ROAS	Regional Office for Arab States
ROI	Return on investment
RRM	Rapid response mechanism
SARC	Syrian Arab Red Crescent
SDC	Swiss Agency for Development and Cooperation
SEECOF	South-East European Climate Outlook Forum
SFD	Social Fund for Development
SFERA	Special Fund for Emergency and Rehabilitation Activities
SJAC	Syria Justice and Accountability Centre
SMA	Sudan Meteorological Authority
SMS	Short message service
SOP	Standard operating procedure
SPN	Social Protection Network (Iraq)
SSDRR	Sudan Strategy for Disaster Risk Reduction
SWERI	Soil, Water and Environment Research Institute
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNDRR	United Nations Office for Disaster Risk Reduction
UNEP	United Nations Environment Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNSDCF	United Nations Sustainable Development Cooperation Frameworks
USAID	United States Agency for International Development
USD	United States dollar
UTSS	Union Tunisienne de Solidarité Sociale
VAM	Vulnerability Analysis and Mapping
WFP	World Food Programme
WMO	World Meteorological Organization

1 Anticipatory action in MENA - Setting the scene

Photo: WFP/Marco Frattini

Anticipatory action: the zeitgeist for 21st Century risk management

Anticipatory action, also known as AA, is rapidly gaining momentum around the world. While most disaster response and humanitarian operations are still mobilised after the onset of a crisis, AA refers to actions taken before a disaster to mitigate its most damaging impacts and to speed up recovery afterwards. These actions are set in motion and informed by forecasts and other early warning information before a hazard strikes or before a hazard event develops into a disaster (Box 1). As such, AA complements regular and longer term DRR and seasonal preparedness activities. Improved EWSs, which build on continued enhancements in forecasts for different types of hazards, combined with vulnerability and risk assessments, make it possible to trigger funding for predefined and pre-planned actions during that window of opportunity.

The increasing focus on AA stems from a growing body of research and practice which demonstrates that delayed response to a disaster unnecessarily exposes people, societies and systems to stress and degradation. Moreover, it is well documented that traditionally response-focused disaster management structures and ad hoc humanitarian responses are often slow and late (Clarke and Dercon, 2016). This has been commonly associated, at least in part, with a lack of advance planning, coordination and accountability, meaning that critical opportunities to protect people and livelihoods are missed.[2] This is exacerbated when disaster preparedness and response activities do not adequately take into account a wide range of vulnerabilities to different types of shocks and stresses.

Hazards and disasters also raise moral and ethical questions which have focused attention on AA. For example, are there actions available to mitigate or limit negative impacts from predicted events, and should these be taken to lower human suffering and to increase the effectiveness with which scarce (humanitarian) resources are used? In many ways, this is an extension of the broader rationale for DRR, including activities which can reduce the likelihood and impacts of a hazard or threat before they turn into a disaster. Such activities span those traditionally thought of as more developmental in nature (an enabling regulatory and legislative environment, communication and information systems, community preparedness etc.) and those considered more humanitarian in nature (stockpiling, contingency planning, simulations and crisis coordination) (Kellett and Peters, 2014). AA complements DRR in that it can help manage the residual risks – those that cannot or have not been effectively reduced in the longer term – when a hazard or disaster is imminent (Wilkinson et al., 2020).

Several studies have highlighted AA's potential benefits, which include reducing human suffering and loss of livelihood, ensuring a faster humanitarian response, and greater aid efficiency through lower costs and better quality programmes (Weingärtner et al., 2020). Evaluations of anticipatory cash transfers ahead of predicted flooding in Bangladesh, for instance, estimated that households receiving the transfer were three times less likely to have frequently had to skip meals or reduce meal sizes in the 2017 floods (Gros et al., 2019: 8); and that they were 36 percent less likely to go a day without eating than those not receiving cash in the 2020 floods (Pople et al., 2021: 40). Receiving the transfer a day earlier slightly increased food consumption (ibid.). In East Africa, the Food and Agriculture Organization of the UN (FAO)'s evaluations of its own 'early warning early action' (EWEA) interventions in Kenya, Ethiopia and Sudan indicated a possible return of between US$3.5 and US$7 to pastoralist households for every US$1 spent on actions taken early to protect livelihoods from drought (FAO, 2019a; FAO, 2018a).

Global progress on anticipatory action

There is no homogenous approach or practice for AA. Popular labels for AA initiatives include the use of terms such as 'anticipatory', 'early', 'forecast-based' or 'livelihood protection'. A number of pilot initiatives have been launched by different NGOs and international agencies over the past few years, under different names, such as forecast-based action (FbA), forecast-based financing (FbF) or EWEA. Several organizations are now leading the way in implementing AA projects, including FAO, WFP, the UN Office for the Coordination of Humanitarian Affairs (OCHA), the Start Network and the International Federation of Red Cross and Red Crescent (IFRC) through its national societies. These have targeted various hazards, including sudden-onset ones such as floods and slow-onset ones such as droughts or disease outbreaks. To date, these AA initiatives have focused mostly on disasters related to hydrological and meteorological hazards, though some have enabled action in anticipation of displacements or epidemics (see for instance Start Fund anticipation alert examples in the chapters on Planning and Financing).

Despite positive progress, AA is far from achieving its full potential. To do so would require a change of scale, from specific pilot projects to system-wide changes (Levine et al., 2020), necessitating buy-in and ownership from national governments, as well as at community level.

DRM and climate adaptation policies and programmes could greatly benefit from the integration of AA and would in turn provide a more robust national framework in which to institutionalise AA with broader geographical coverage, scope of hazards and greater multi-stakeholder engagement (Wilkinson et al., 2020).

2 See for instance Clarke and Dercon (2016) highlighting this point based on examples from the 2010 Haiti earthquake (Patrick, 2011) and Typhoon Haiyan in the Philippines (Hanley et al., 2014); or Hillier and Dempsey (2012) analysing early warning and response to the 2011 in the Horn of Africa.

Box 1 | Hazards, disasters and anticipatory action

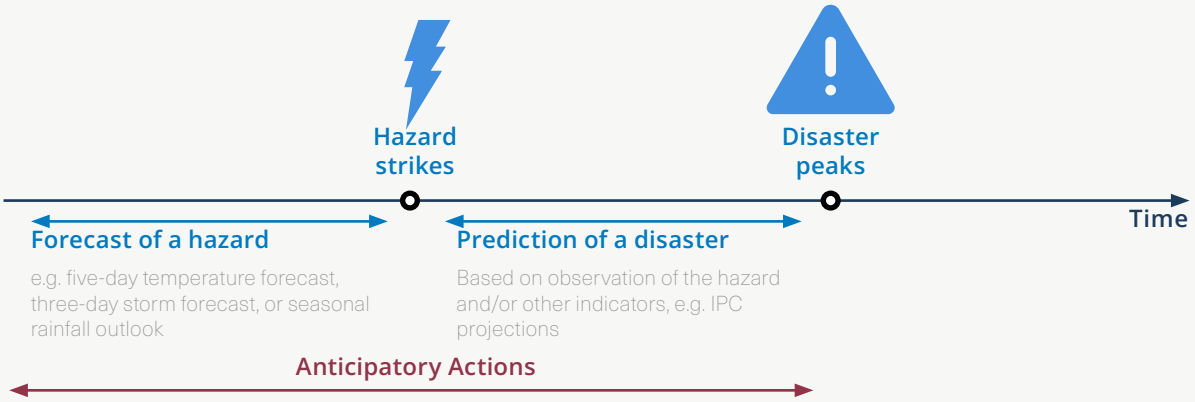
Figure 1 outlines the sequencing of hazards, disasters, and the timing of different types of predictions used to anticipate both. The speed with which a disaster follows a hazard can be very short for some hazards, for instance when heavy rainfall floods a city, damaging houses and infrastructure within a few minutes or hours. In other cases, shortfalls in precipitation over the course of a rainy season might not result in a disaster until weeks or months later when harvests have failed. AA as used in this report can be triggered through the forecast of a hazard, or the prediction of a disaster, and is implemented in advance of these events.[3]

This report uses terminology from the United Nations Office for Disaster Risk Reduction (UNDRR) and its recent hazard definition and classification review technical report (UNDRR, 2020).

UNDRR defines a hazard as "a process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation" (UNDRR, n.d.). Hazard clusters include (1) meteorological and hydrological hazards, (2) extraterrestrial hazards, (3) geohazards, (4) environmental hazards, (5) chemical hazards, (6) biological hazards, (7) technological hazards, and (8) societal hazards (UNDRR, 2020).

Disasters are the manifestation of hazards in the form of "a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts" (ibid.).

Figure 1. Hazard and disaster predictions



3 Following Levine et al. (2020), who outline the relationships between shocks and humanitarian crises.

Due to the nature of AA, a holistic approach to DRM is required, which means involving a broad range of ministries and stakeholders. Approaching AA from a national government perspective also emphasises the need for comprehensive risk analyses to understand the kinds of shocks that are most prevalent, their likely scale and impact, in order to help prioritise and inform AA.

A community of practice is emerging with the aim of scaling up AA to achieve a greater impact, including through its integration into national systems (Wilkinson et al., 2020). REAP was launched in 2019 to support early action efforts and financing by 2025. More recently, in early 2021, the Crisis Lookout coalition called for a global entity to improve risk information, pre-arrange finance and pilot initiatives to "predict disasters, prepare our response and protect lives". [4] In June 2021, the G7 highlighted its commitment to AA and pre-arranged finance, announcing a package of support with new funding from the UK and Germany (FCDO, 2021).

How the MENA region sits within the anticipatory action landscape In the context of this global shift, individual governments, UN and humanitarian agencies are becoming increasingly interested in the potential added value of AA for the MENA[5] region. The Government of Egypt, for instance, is a REAP member, and there are emergent examples of AA across the region (described in more detail later in this report). The Covid-19 pandemic has also spurred governments to examine how they can better identify vulnerable populations in advance of disasters and to put in place more flexible assistance mechanisms; Tunisia and Palestine, for example, have employed cash-based systems.

4 See the Crisis Lookout Coalition's joint statement here: https://www.crisislookout.org/about-the-coalition.

5 Defined here as: Algeria, Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates, West Bank and Gaza, and Yemen, based on the Food in an Uncertain Future (Jobbins and Henley, 2015) report.

However, to date, no concentrated attention has been paid to the wider progress and potential for AA across the region, and little documentation of where AA initiatives have been trialled. Evidence from existing AA interventions outlines their potential benefits and costs, although more analysis is required of national and regional spending on disaster preparedness and response, and the potential cost efficiency of adopting AA at scale in MENA countries. Given the extent of humanitarian action in the region (see below) there is great hope that applying lessons from the global experience, as well as bringing experiences from the MENA region to the fore, will help advance this agenda. This study presents a first attempt to fill that gap by focusing explicitly on AA in the MENA region (using the methodology described in Box 2).

This report presents a synthesis of findings from across eight MENA countries, with additional detail provided in an accompanying country compendium.

The state of disaster risk within the region

Throughout the last decade, major challenges have impeded development and disaster management trajectories in the MENA region, including internal and cross-border conflict, civil unrest, mass and repeated displacement, economic contraction and - more recently - the Covid-19 pandemic. Political upheaval and civil wars are estimated to have resulted in 2.9 million new internal displacements on average each year between 2010 and 2019 (IDMC, 2021). Conflict in several Arab countries has driven income and multidimensional poverty, and eroded development and economic progress, including in Syria and Yemen (Abu-Ismail, 2020). Households in the MENA region are highly vulnerable to increases in international food prices and most countries have experienced the impacts of global food price shocks (Ianchovichina, 2011). MENA countries with high intensity conflict (Iraq, Libya, Syria and Yemen) have experienced high growth volatility over the past decade. Other countries in the region (with the exception of Djibouti and Egypt) experienced low and declining growth rates, with population growth contributing to the stagnation or decline in gross domestic product (GDP) per capita even before the Covid-19 pandemic. Inflation has presented a further challenge in countries such as Egypt, Iran, Libya and Yemen, and particularly in Sudan (Dabrowski and Domínguez-Jiménez, 2021).

Meanwhile, the region is extremely exposed to natural hazards, primarily hydro-meteorological hazards such as floods, storms, heat waves, droughts and wildfires but also geological hazards such as earthquakes and tsunamis. The number of disasters related to natural hazards in the region has almost tripled since the 1980s – compared to a doubling across the globe – affecting approximately 40 million people (Banerjee et al., 2014). Vulnerability and exposure may be increasing due to contributing factors such as environmental degradation, urbanization, demographic changes and migration trends (LAS and UNDRR, 2018a).

The region is also experiencing the effects of climate change, which is affecting food security and livelihoods. In recent decades, North Africa has experienced an overall warming in temperatures. There has also been a decrease in precipitation in early spring and winter and an increase in the number of dry days, while in autumn precipitation has increased in some parts of Algeria and Morocco (IPCC, 2014). Across the MENA region, temperatures rose at a rate of 0.2°C per decade between 1961 and 1990, and have grown at an even faster rate since then (World Bank, 2014a). The

Box 2 | Methodology

Based on several criteria, including levels of disaster risk, coping capacity and information availability, a set of eight countries from the MENA region were selected for this study: Egypt, Iraq, Lebanon, Morocco, Sudan, Syria, Tunisia and Yemen. Using a pre-determined framework articulating the components of AA (based on Wilkinson et al., 2018 and outlined in more detail in the following chapter), evidence was gathered for each country.

For all countries, secondary literature was identified via Google, Google Scholar and through the websites of relevant institutions on a global scale (UNDRR, UN Development Programme (UNDP), the World Bank etc.), on a regional scale (such as the UNDRR Regional Office for Arab States (ROAS), the League of Arab States (LAS) or the Economic and Social Commission for Western Asia (ESCWA)), and on the national scale (relevant ministries and institutions).

Grey and academic literature was supplemented by key informant interviews with representatives of relevant ministries and agencies, and international organisations, as well as independent experts. The aim was to fill any information gaps from the review of secondary material, and to verify the findings in line with the AA framework. Key informants and expert reviewers involved in this study also shared unpublished documents.

Information was organised in line with the AA framework for each country and analysed along the following themes: context and governance; forecasting and risk information; planning; financing; delivery; and opportunities and entry points for strengthening AA. In addition, three case studies (described in the 'spotlight' boxes in this report) were chosen for in-depth review, selected subjectively based on the possible insights they may reveal about innovations and progress on AA in the region.

MENA region is already very arid but, by the middle of the century, it is expected to be warmer and to experience more extreme events, particularly droughts and floods (ESCWA, 2017; Jobbins and Henley, 2015).

The combination of all these factors creates one of the largest humanitarian caseloads in the world, with around 45 million people in need and over 12 million internally displaced people (IDP), mostly in Syria, Iraq, Yemen and Libya (OCHA, 2020a). The frequency and intensity of disasters, as well as governance issues and increasing vulnerability factors, are widening the gap between needs and available resources.

National social protection systems are still characterised by low coverage, fragmentation, lack of coherence, financial unsustainability (ESCWA, 2019a) and inappropriate targeting that lacks a broader understanding of vulnerability. Relatedly, they are often not shock-responsive or adaptive systems, meaning there is no specific or additional support for households experiencing food insecurity, damage to crops or other disaster impacts.

Moreover, humanitarian aid and finance are still mainly mobilised after a disaster strikes, which prevents effective and timely action. Recent analysis of nine case study countries indicates that only 2.3 percent of funding for responding to natural hazard-related disasters is pre-arranged, meaning it has been "agreed in advance, and guaranteed to arrive if a certain set of circumstances arise" (Crossley et al., 2021). An even smaller share of disaster funding globally – an estimated less than 1 percent - is anticipatory, i.e. paying out before a shock occurs or before a crisis has reached its peak, to enable AA (Weingärtner and Spencer, 2019).

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Anticipatory action for different hazards

This study focuses on the hazards that feature most in the evidence and where there has been most experience with implementing specific AA interventions to date. These are largely orientated around food and livelihood security in the face of natural hazards such as drought, flooding or storms. These hazards fall under the remit of the Sendai Framework for Disaster Risk Reduction 2015-2030, but so too do a broader range of hazards including biological hazards (including the 2020-2021 Covid-19 pandemic) and technological hazards (such as the 2020 Beirut blast). Although issues of fragility, violence and conflict fall outside the remit of the Sendai Framework, they are important shocks and stressors within the MENA region, and there are examples of AA which seek to address these pressures, both directly and indirectly.

In Lebanon, for instance, anticipation alerts through the Start Network (2021a) were raised and funded in April 2020 to respond to Covid-19. In Iraq and Lebanon, the Start Fund's 'anticipation window' has been activated in anticipation of spikes in displacement resulting from increased military action and the destruction of refugee camps respectively (Start Network, 2021b). However, there are so far just a few examples at relatively small scale of AA addressing societal and biological hazards.

National social protection programmes, particularly those that are or aim to become more responsive to shocks, tend to focus on covariate shocks because these cause spikes in demand and impede business continuity in social protection (O'Brien, 2020). There is scope to adapt existing social protection mechanisms to a broader range of hazards than those currently being targeted, although the feasibility of doing so depends on a range of factors, including the crucial ability to forecast the shock as well as overall system functioning. For conflict shocks, for example, the range of instruments available will be limited; "from social protection databases (which tend to become outdated in situations of large-scale displacement) to the implementing parties themselves – for example, if the existing national authority is one of the parties involved in the conflict" (Tebaldi, 2019: 12). There are other impediments to using mechanisms such as social protection to deal with other shocks such as economic crises, since fiscal space will already be constrained and fiscal space is a necessary attribute to the scalability of a social protection system (Tebaldi, 2019).

On a global scale, there continues to be interest in assessing the viability of expanding AA mechanisms such as FbA in two different ways in relation to conflict: "1) FbA based on forecasts of hydro-meteorological hazards in conflict situations (i.e., to act early in anticipation of climate-related hazards in situations of ongoing conflict); and 2) FbA based on forecasts of conflict (i.e., to act early in anticipation of humanitarian impacts of violent conflict)" (Wagner and Jamie, 2020: 11). With regards to the former, this report directly and indirectly deals with this challenge. With regards to the latter – and an expanded scope of hazards for AA – there are a number of impediments to be overcome, which include the issue of conflict prediction. This is both a technical and political challenge (Wagner and Jamie, 2020). For humanitarian actors "even if forecasts deliver reliable data, subsequent humanitarian actions could jeopardize core humanitarian principles such as neutrality or – even worse – actively fuel the conflict " (Wagner and Jamie, 2020: 21). The WFP is part of a collaboration of agencies exploring the viability of applying FbA to conflict and displacement contexts, as part of an Early Action Focus Task Force.

Advancing risk reduction and management as a foundation for anticipatory action

Across the MENA region, a number of policy commitments have been made to advance DRR, in recognition of the increasing disaster risks present in

the region, and their current and future detrimental effect on development efforts. In 2010, LAS adopted the Arab Strategy for Disaster Risk Reduction for 2020 (Banerjee et al., 2014). This was followed by two major agreements recognising the importance of DRR for Arab cities: the Aqaba Declaration in 2013 (ASEZA et al., 2013) and the Sharm el-Sheikh Declaration in 2014 (IDSC et al., 2014). Following the adoption of the Sendai Framework (UNDRR, 2015a), the 2030 Agenda for Sustainable Development and the Paris Agreement on climate change in 2015, a number of commitments were made to further advance DRR outcomes in the region. In 2018, the Arab Strategy for Disaster Risk Reduction for 2030 was adopted (LAS and UNDRR, 2018a). At the 2018 Africa-Arab Platform on Disaster Risk Reduction in Tunis, a plan of action was adopted to implement that strategy (LAS and UNDRR, 2018b), with a first phase in 2018-2020 to assess risks and strengthen institutions, including EWSs.

All these global, national and regional policy commitments, and their complementary strategies, pave the way for greater political, financial and technical support to enhance the foundations of DRR and risk management which are necessary for accelerating AA. These include updated policy frameworks, hazard monitoring capabilities, improved EWSs and risk communication strategies.

Although progress has been slow compared to other regions, MENA countries are gradually investing more in DRR and management. However, the region is marked by great heterogeneity; it includes countries that are considered advanced on a global scale, such as Morocco, as well as countries that are lagging far behind, suffering from decades of political instability and economic crisis, and in some cases repeated armed conflict. In 2015, a UNDRR report (UNDRR, 2015b) concluded that, although governments and organisations recognise the need to improve DRR and move from a culture of response to a culture of prevention, major challenges are hindering progress such as the lack of clear mandates and strategies, of decentralization and financial resources, and of communication and awareness.

Across the region, commitments to action on DRR and seasonal preparedness are advancing, although pre-defined and financed AA to reduce or mitigate impacts from detrimental events expected based on a forecast or EWS remains nascent. Nonetheless, there is evidence of progress on AA in the region (see examples of this in the following Chapters and Spotlights on *Drought management in Jordan*, *Early warning systems and anticipatory action in agriculture in Egypt* and *Anticipatory action for livelihood protection in Sudan*). And in 2020, a number of committed stakeholders including LAS, Arab Water Council, WFP, REAP, German Red Cross, IFRC, International Center for Agricultural Research in the Dry Areas, ODI and the Start Network, convened under the banner of the SDG Climate Facility for the first ever workshop on AA in the Arab States region.

Photo: WFP/Hebatallah Munassar

2
The components of Anticipatory Action

Photo: WFP/Niema Abdelmageed

AA has a number of key components (see *Figure 2)*, each of which has a role in creating and strengthening AA systems and mechanisms: forecasts and risk information; planning; financing; and delivery (Wilkinson et al., 2018). This chapter outlines the different component parts, which are then used as a framework for analysing the state of AA in the MENA region in the remainder of this report.

The key aim of AA is to translate information from forecasts, risk reports and EWSs into timely action. To do this requires a good understanding of hazards. This report and the accompanying country compendium therefore include analysis of the main regional and national agencies in charge of climate and weather forecasts, the products they offer, their reliability, their geographical scope and timescales.

However, given that a disaster is the product of a hazard, in conjunction with vulnerability, exposure and capacity (Blaikie et al., 1994), AA needs to be understood in the broader socio-economic-political context of each country.[6] Thus, effective AA requires a robust understanding of how risks manifest, their frequency and trends, for instance through the existence of a national database on disasters, and mapping of exposure and vulnerability. The integration of vulnerability and exposure information gives a more precise idea of the potential impacts of a hazard. Combining information on hazards, vulnerability, exposure and capacity is critical in the planning process for an AA system, as well as for activating AA when an event is imminent, for instance through automated triggers or forecast-informed decision-making.

The key aim of AA is to translate information from forecasts, risk reports and EWSs into timely action.

Based on all this information, AA systems aim to provide timely support to people at risk to protect lives and livelihoods by defining and planning pre-determined early actions. These actions can be taken at different timescales, such as before the hazard occurs based on forecasts or before a crisis develops based on observational data from the continued monitoring of key indicators (Levine et al., 2020). Actions will also be planned differently depending on the type of hazard; whether slow-onset such as droughts[7] or rapid-onset such as floods.[8] At the national level, AA planning requires comprehensive legal and political frameworks, and policies such as national plans on disaster preparedness or risk reduction, hazard or sector-specific plans, as well as contingency plans and standard operating procedures (SOPs) adapted to different types of hazards, which can help facilitate collaboration across ministries and agencies (e.g. on data collection and sharing). Ideally, those plans and policies should explicitly include AA and should specify pre-planned actions, targeted hazards, triggers and funding mechanisms. The level of preparedness and response capacity should also allow timely action, with trained teams, financial and material resources, and strong coordination across different stakeholders (including at-risk communities as well as national and subnational governments, international and regional organisations, and non-state actors).

AA then requires funding that can be rapidly deployed. This is necessary to enable the implementation of predetermined actions and the delivery of support in a timely and predictable manner. Such funding requires a great deal of upstream planning, determination of roles and responsibilities, and estimation of the costs of planned AA interventions, as well as robust disaster risk financing strategies and instruments. In light of this scenario, this report aims to understand how preparedness and response are currently funded across the region and at the country level, and the strategies in place to facilitate ex-ante actions. More specifically, AA mechanisms can encompass a large set of instruments, including contingency funds, specific AA windows in emergency response funds, insurance and/or direct links to regular resource allocation processes (Wilkinson et al., 2018). Sources of funding for AA – including for informing and establishing AA plans and systems, as well as to fund early action when a disaster is imminent – have included national governments, regional organisations, and bilateral and multilateral donors. Where possible, we analysed the existence and use of different tools and sources of funding in the MENA region.

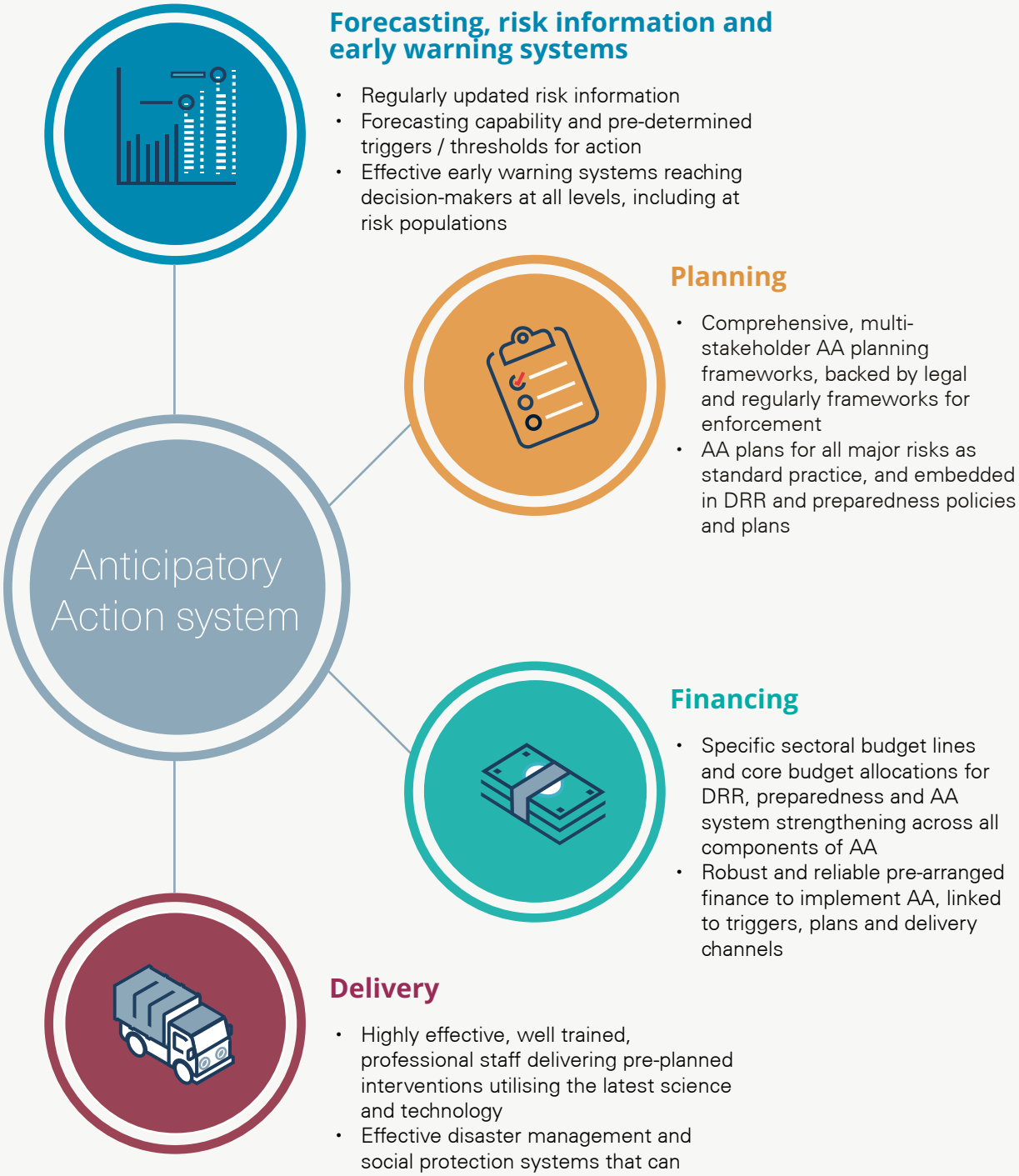
Finally, AA mechanisms must include delivery. AA can be delivered directly to at-risk communities by a number of different channels; state institutions through the use of emergency response structures and social protection systems; civil society; or the private sector, for instance through utility companies. The choice of channel depends on the relevant anticipatory actions identified in the planning process, as well as on government capacity, and the wider political and institutional context. This report aims to gauge the capacity of agencies to deliver timely action, to determine the extent to which social protection systems are (or could be) shock-responsive, and to identify existing channels that may be used to deliver AA.

6 Definition of disaster according to UNDRR: 'A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts' (UNDRR, n.d.).

7 On drought AAs, see for instance Levine et al. (2020).

8 A recent example of AA for floods was in Bangladesh, see for instance FAO (2021).

Figure 2. **An AA system and its components**



Source: Authors' figure, based on Wilkinson et al. (2018)

Photo: WFP/Ali Habib

3
Forecasting risk information and early warning systems

Photo: WFP/Abeer Etefa

Summary: Forecasting, risk information, and early warning

- Real-time observation of meteorological and hydrological hazards is improving in most countries in the MENA region, with networks of weather stations and data records in relatively good state in Jordan, Lebanon, Morocco and Tunisia.
- Weather and climate forecasting is also maturing overall, though gaps still exist in the capacity of national hydro-meteorological services that inhibit the use of weather and climate forecasts for early warning and AA. These gaps includes insufficient downscaling and customisation of forecasts, as well as a need for assessing the accuracy of forecasts, which can be impeded by incomplete historical records of impacts from past events.
- At regional and global level, humanitarian information and EWSs monitor and project information on risks that are not primarily – or not exclusively – related to hydrological or meteorological hazards. While there is some experience using these mechanisms to support AA, they are available in few MENA countries and the frequency of updates, projection capacity and limited integration within more comprehensive EWSs are making their application for AA challenging.
- Database maintenance and updates, data sharing and collaboration across institutions and countries is an ongoing challenge in all MENA countries included in this study. Unclear or overlapping mandates, along with limited exchange of information across institutions within and beyond government, hamper multi-hazard risk analysis and forecasting, undermining the effectiveness of EWSs to enable AA.
- Momentum is growing for enhancing the recognition of conflict in AA in the humanitarian community, but conflict analysis is still a major shortcoming in AA and predicting conflict and its effects remains challenging. Conflict analysis and its incorporation into EWSs is also highly political, especially where warning systems are led by governments that are party to the conflict. Without progress in this area, AA may have limited relevance in the MENA region, given the prevalence of ongoing and prolonged situations of violent conflict.

Real-time observation of meteorological and hydrological hazards is improving in most countries

Weather station networks for the real-time observation of hydrological and meteorological indicators exist to some extent in all countries included in this study (Thompson, 2020). However, their density of coverage and the extent to which stations are operational and well-maintained varies greatly. While the network of stations is considered in relatively good state in Morocco, Jordan, Tunisia and Lebanon, gaps and damages have been noted to varying degrees in almost all countries included in this report. Challenges relate to stations damaged by past disaster events (e.g., in Lebanon), a lack of coverage in some parts of the country (e.g., in Lebanon and Tunisia), and inadequate maintenance of station and limited upkeep of historical records (e.g. in Jordan, Lebanon and Sudan). Some of these challenges are related to a lack of core funding for the institutions in charge to mend or replace equipment where required, and the relatively short-term project-based nature of weather and climate information service initiatives (Key Informant Interview).

Historical hydrological and meteorological data required to quantify long-term changes in climate and assess the accuracy of forecasts is lacking, especially in MENA countries that experience prolonged conflict. On the ground, hydro-meteorological stations are often sparse in contexts of state fragility, and can be compromised or interrupted in conflict situations, as in Yemen, Syria and Iraq. In 2015, Yemen had a density of 0.473 stations per 10,000 km$_2$, while Sudan had 0.127 stations per 10,000 km$_2$ (compared to 6.608 in the UK) (Mason et al., 2015). In contexts where violence or armed conflict interrupts government public administration and financial management, the incentives to repair damaged stations are extremely limited. This can create substantial gaps in data collection, undermining the comprehensiveness of longer term records and the ability to identify trends.

Despite gaps in the capacity of national hydro-meteorological services, weather and climate forecasting is maturing

Governments have shown commitment and achieved some progress in enhancing forecasting capacity for floods and droughts in Tunisia, Morocco, Jordan, Lebanon and Egypt, in part supported by international development and climate programmes. For instance, Tunisia has advanced its forecasting capacity in recent years, particularly for floods, through its Institut National de Météorologie (INM - National Institute of Meteorology) and the Direction Générale des Ressource en Eau (DGRE - General Directorate for Water Resources). The INM draws on data and

modelling frameworks from Météosat, Météo-France, the World Meteorological Organization (WMO) and others, to complement Tunisia's own weather and climate observation data. The INM compiles seasonal and short-term forecast information through a regularly updated vigilance map covering rainfall and flooding, thunderstorms, violent winds, sandstorms, dense fog and snow;[9] seasonal forecast bulletins for temperature and rainfall;[10] and daily weather forecast, among other products. Similarly, the Jordan Meteorological Department (JMD) issues forecasts based on models from international and regional institutions (WMO, Météo-France and the European Centre for Medium-Range Weather Forecasts) but lacks a numerical weather prediction (NWP)[11] model for the country (Key Informant Interview; Skoien et al., 2018).

Despite the progress made, challenges related to the use of existing weather and climate forecasts for early warning and AA remain. In part, this is due to limitations in using regional frameworks and models at national or sub-national level without adequate customisation. In Lebanon, for instance, the country's diverse geographic features have raised questions about the extent to which regional models for flash flooding are applicable to the country context (Key Informant Interview). Validating the accuracy of forecasts for their use to inform and/or trigger AA interventions also requires continued observation and reliable historical hydrological and meteorological data, which is not available in many cases, as described earlier. Lastly, AA requires not only forecasting what the weather will be like in the future, but also what impacts the weather will have on people, assets, infrastructure and livelihoods – known as impact-based forecasting – to plan for and implement AA. Impact-based forecasting requires information about the exposure and vulnerability of people and assets, in addition to information about the hazard. In practice, however, this link is often missing, which limits the use of weather and climate information for AA.

> Anticipatory action requires not only forecasting what the weather will be like in the future, but also what impacts the weather will have on people, assets, infrastructure and livelihoods.

Regional collaboration to enhance meteorological and hydrological forecasting capacity for AA is advancing

Regional collaboration plays a critical role in enhancing forecasting for AA. A number of national meteorological and hydrological services (NMHSs) in MENA countries work together with regional climate centres (RCCs) and designated RCC networks to enhance their capacity. RCCs and RCC networks support NMHSs "to generate and deliver up-to-date climate information and products for climate services. RCCs and NMHSs are supported by WMO-designated Global Producing Centres for Long-Range Forecasts (GPCLRFs), which have been established to provide a range of global long-range forecasting products" (WMO, n.d.a). RCCs in the region include the Africa Regional Climate Centre, the Intergovernmental Authority on Development Climate Prediction and Applications Centre (ICPAC) for Sudan and the North Africa Regional Climate Centre Network with nodes in Morocco, Algeria, Tunisia, Libya and Egypt.

The Sudan Meteorological Agency (SMA), for example, collaborates with ICPAC and the Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES) to provide short-term weather and climate forecasts, as well as seasonal predictions. SMA regularly verifies the seasonal rain forecasts throughout the season. Forecasts are made available for planning to ministries such as irrigation or civil defence, as well as to end users including farmers and pastoralists, banks, insurance and reinsurance companies, the media and the public (Key Informant Interview).

In addition to the RCCs, a number of regional initiatives have been supporting advancements in climate services and impact-based forecasting for AA. This includes the Regional Initiative for the Assessment of Climate Change impacts on Water Resources and Socio Economic Vulnerability in the Arab Region (RICCAR), which functions as a partnership and knowledge hub across the Arab States. RICCAR includes a climate modelling component and coordinates the Arab Climate Outlook Forum (ArabCOF) (see **Box 2**).

Forecasting for AA is receiving increasing attention in some of the regional centres and forums. In November 2020, RIMES council members committed to focusing their 2021-2025 activities on FbA. This includes strengthening capacity on impact-based forecasting. To support this objective, members also agreed to share historical and real-time hydrological and meteorological data to enhance the performance of climate model outputs, allowing RIMES to provide participating countries with high-resolution forecast products (RIMES, 2020).[12] This increasing focus on AA has been enhanced by ICPAC announcing that the theme of the 58th GHACOF meeting (GHACOF 58) taking place in May 2021 is 'Climate Services for Early Action' (ICPAC, n.d.).

9 https://www.meteo.tn/fr/vigilance-meterologique

10 A recent example for the 2021 March/April/May season can be found here: http://41.231.36.230:81/uploads/bulteins/b44fb0bb4f9277d0eea7ccf0aff7622e.pdf

11 NWP is "the form of weather model data we are most familiar with on a day-to-day basis. NWP focuses on taking current observations of weather and processing these data with computer models to forecast the future state of weather" (NOAA, n.d.).

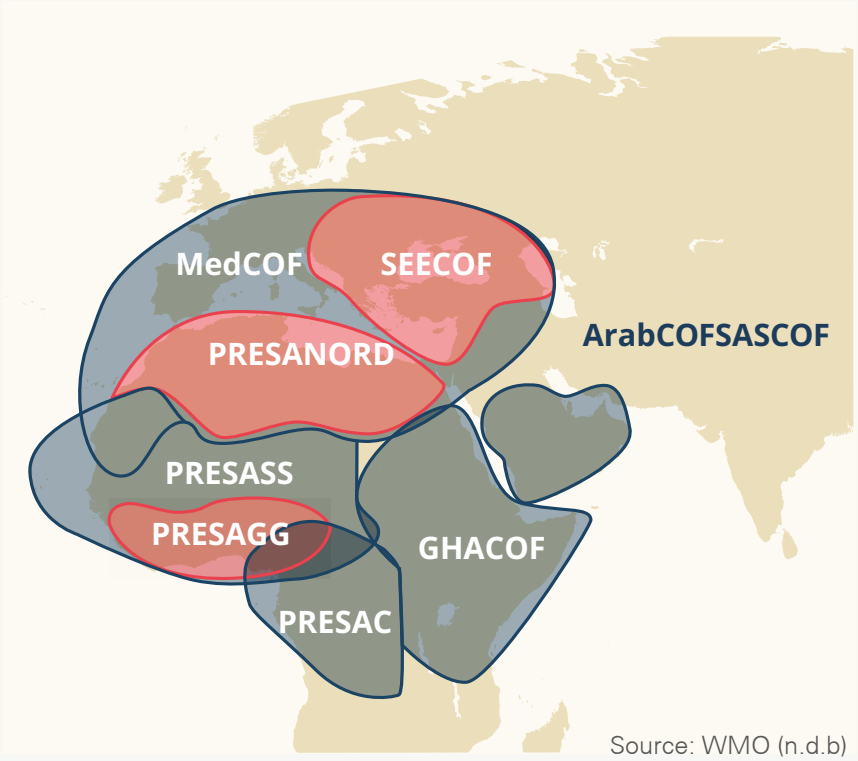
12 In the MENA region, RIMES involves Sudan (collaborating state) and Yemen (member state). Arab League member Djibouti is also a RIMES member, while Somalia is a collaborating country (RIMES, n.d.).

Box 3 | Regional Climate Outlook Forums across the MENA countries

A Regional Climate Outlook Forum (RCOF) is "a platform that brings together national, regional and international climate experts and stakeholders representatives from countries in a climatologically homogeneous area to provide consensus-based climate predictions based on input from NMHSs, regional institutions, RCCs, GPCLRFs and other climate prediction centres. Through interaction with sectoral users, extension agencies and policymakers, RCOFs assess the likely implications of outlooks on the most pertinent socioeconomic sectors in a given region, and explore the ways in which use can be made of them" (WMO, 2016: 3).

RCOFs are important platforms for the provision of forecasts, as well as for the interpretation of these forecasts and discussions about their implications for AA across different sectors at seasonal timescales.

Figure 3. RCOFs across the MENA region



Source: WMO (n.d.b)

Several RCOFs operate in the MENA region (Figure 3):

- ArabCOF, held once or twice a year since 2017 and made up of representatives from Algeria, Egypt, Jordan, Kuwait, Libya, Mauritania, Morocco, Oman, Saudi Arabia, Tunisia, United Arab Emirates and Yemen.
- Greater Horn of Africa Climate Outlook Forum (GHACOF), operational since 1998 and taking place three times a year (February, May and August), covering Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, South Sudan, Sudan, Tanzania and Uganda.
- Prévisions Climatiques Saisonničres en Afrique du Nord (PRESANORD), held once or twice a year since 2012 involving Algeria, Egypt, Libya, Morocco and Tunisia.
- Mediterranean Climate Outlook Forum, taking place twice a year since 2013 bringing together members of PRESANORD alongside those of the South-East European Climate Outlook Forum (Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Georgia, Greece, Hungary, Israel, Jordan, Republic of Moldova, Montenegro, the Former Yugoslav Republic of Macedonia, Romania, Serbia, Slovenia, Turkey and Ukraine), as well as France, Italy, Lebanon, Malta, Mauritania, Portugal, Spain and the Syrian Arab Republic.

At regional and global level, humanitarian information and EWSs monitor information on risks that are not exclusively related to hydrological or meteorological hazards.

The International Organization for Migration's (IOM) Displacement Tracking Matrix (DTM), for instance, tracks and monitors mobility and displacement, to help target humanitarian assistance based on the needs of displaced populations. The DTM has been used to inform humanitarian responses and in some cases recovery, highlighting urgent concerns to national disaster management agencies and sectoral coordination focal points. According to the IOM, the DTM can be also deployed to support preparedness activities such as the mapping of possible evacuation and displacement sites (IOM, n.d.). These functions could potentially support AA planning and targeting more systematically in the MENA region, where the DTM covers Iraq, Lebanon, Libya, Sudan and Yemen.

Tracking and projecting food insecurity, the IPC supports humanitarian response and, increasingly, early action. OCHA's ongoing Central Emergency Response Fund (CERF) early action pilot in Somalia has been relying on IPC projections alongside climate forecasts to trigger and target assistance (CERF, 2020). However, a recent review of anticipatory information systems and action in East Africa notes that the IPC's main strength is still widely regarded to be its current status assessments, rather than its projections. The use of IPC projections for AA more broadly is still considered somewhat limited because they are not updated frequently enough and because they are "too focused on the numbers rather than the drivers" (Maxwell and Hailey, 2020: 31), which may include a multitude of hazards and underlying vulnerabilities. While qualitative information might help triangulate and complement quantitative projections such as the IPC figures, there is insufficient guidance around qualitative information and analysis and often a lack of collaboration across all actors required to strengthen the quality and coherence of risk information and EWSs (ibid.). Similar systems for tracking (and in the former case projecting) food insecurity include FEWSNET and WFP's Vulnerability Analysis and Mapping. These are used by the United States Agency for International Development (USAID), WFP and others to inform humanitarian preparedness and response operations, and align with the widely used IPC classifications. However, IPC and FEWSNET only cover few countries in the MENA region, limiting their current potential use to inform AA plans and triggers to Sudan, Somalia and Yemen (FEWSNET, n.d.; IPC, n.d.).

Governments in the region might have their own systems in place to monitor or anticipate societal and biological hazards such as epidemics, displacement or economic shocks, but these were not looked at in detail in this report or in the country compendium and would require further analysis to understand their coverage and potential use for AA.

Risk information and analysis is improving overall, but remains siloed by hazard type

Risk assessments as a key cornerstone of impact-based forecasting are critical for AA planning and implementation (Asia Regional Resilience to a Changing Climate, Met Office and Red Cross Red Crescent Climate Centre, 2020). Government-led hazard, exposure and risk mapping is advancing in parts of the region, but a greater focus is required on improving risk assessments in general and socioeconomic vulnerability assessments in particular. In Jordan, the Ministry of Water and Irrigation and National Committee for Security and Crisis Management signed an agreement in 2020 to implement a national flood mapping programme aimed at supporting the management of flood and flash flood risks (Jordan Ministry of Planning and International Cooperation, 2020; Key Informant Interview). In Lebanon, the National Council for Scientific Research has been producing hazard profiles, including hazard, exposure and to some extent vulnerability maps, to inform sectoral planning and risk reduction strategies (Key Informant Interview). At the regional level, the Arab Water Council established the Arab Geographical Information Room in 2015 to address data and analysis gaps around hazards, vulnerability and exposure. This aims to support preventative measures and risk-informed decision-making for policy and programming (Arab Water Council, 2019). The system has supported hazard monitoring and forecasting for a range of applications and hazards including floods, wildfires, droughts and locust infestations. In Tunisia, for instance, it is being used for developing flood inundation and forecast maps that will provide early warnings targeted at agencies working on emergency management and disaster response (Al-Hariri, 2021).

Hazard, exposure, vulnerability and risk mapping is still largely compartmentalised by hazard-type (including separate meteorological and hydrological data and services), with limited multi-hazard information or interoperability across risk information systems. There is general awareness of the value of multi-hazard risk assessment and management systems - and rhetoric about the ambition to achieve this – but for the most part such ambitions remain far removed from the current systems in place. This is especially the case at the national level. At the municipal level, multi-hazard risk assessments have been conducted for a number of cities, for instance in Amman, Aqaba, Petra, Irbid and Mafraq in Jordan (CADRI, 2018).

Data sharing, collaboration, and database maintenance and updates across institutions and countries is a challenge

Databases capturing risk information and impacts from past events require continued resourcing and maintenance to remain up to date for planning and

implementing AA. This can prove challenging in practice. In Egypt, for instance, national disaster databases and vulnerability and exposure data are considered incomplete and outdated (Elboshy, Gamaleldin and Ayad, 2019).

Unclear or overlapping mandates, along with limited exchange of information across institutions within and beyond government, hamper multi-hazard risk analysis and forecasting, undermining the effectiveness of EWSs. In Tunisia, for instance, the INM operates a network of weather data collection stations across the country. At the same time, the Ministry of Agriculture operates agrometeorological stations and the DGRE has established precipitation and surface water stations (Fragaszy et al., 2020), resulting in scattered data and a lack of coordination (Key Informant Interview). In Jordan, the exchange of information between the JMD, sectoral ministries and municipalities is not standardised (CADRI, 2018). In Egypt, there is little communication and data sharing between the Information and Decision Support Center, the country's governorates and the general public (Key Informant Interview). Collaboration across countries around risk information sharing, forecasting and early warning is also limited, despite the transboundary nature of most risks.

For contexts where conflict is prevalent and/or prolonged, the institutional capacity and funding required to develop forecasts, risk assessments and EWSs is limited. What information exists primarily derives from international humanitarian agencies and initiatives. This is the case in Yemen, Syria, Iraq and, to some extent, Sudan. An example of this is the flood susceptibility analyses conducted by REACH, which has used satellite imagery and flood hazard mapping to identify flood risk in IDP shelters in Syria and Yemen (REACH, 2021).

Early warning systems for meteorological and hydrological hazards exist in the region

There are examples of successful EWSs operated or supported by the government for specific meteorological or hydrological hazards at national level, and at district or city level, in most countries, including in Tunisia, Jordan, Sudan, Lebanon, Egypt and Morocco (summarised in Box 3).

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Multi-hazard early warning systems are in their early stages

In line with the increasing focus on multi-hazard risk assessments, there are growing calls for MHEWSs[13] that cover different types of hazards across the region. Multi-hazard approaches (including multi-hazard risk assessments, MHEWSs and multi-hazard risk management) generally have important potential to support AA because they allow a country or agency to focus not only on one, but on a selection of the most relevant hazards in a given context. This, in turn, means that simultaneous, cumulative and cascading hazards can be better understood and considered in planning, financing and delivering AA (Tozier de la Poterie et al., 2021; Rogers et al., 2020).

In some countries in the MENA region, concrete steps are being taken to establish MHEWSs. This includes Sudan, where an Early Warning Early Action Technical Working Group was established in 2020 to facilitate a multi-hazard and multi-sector EWEA system by offering a common platform for knowledge-sharing and collaboration (FAO, 2020a). However, we have found no evidence of an operational MHEWS at national level in any of the countries included in this report. Which agency holds the mandate for a MHEWS is often unclear. In Lebanon, for instance, this has resulted in gaps and overlaps across institutions with instances of agencies issuing contradicting alerts resulting in a loss of trust by the public in forecasts and EWSs (Key Informant Interview).

In the region – as well as globally (Rogers et al., 2020) – impact-based MHEWSs have mostly remained focused on different meteorological and hydrological hazards such as floods and droughts, so even if they are 'multi'-hazard, they largely concentrate on a narrow hazard cluster, not including issues such as biological or societal hazards.

Collaboration across government agencies and with non-state actors is critical for translating early warnings into AA

There is evidence of effective cross-government agency coordination supporting elements of forecasting for AA. In Sudan, for example, the SMA, the Multi-Hazard Early Warning and Mitigation Centre within the HAC, and the country's Ministry of Irrigation and Water Resources collaborate to produce a monthly bulletin and flood watch update (HAC, 2017). National and sub-national coordination structures

13 According to the definition agreed by UN member states in 2017, "[m]ulti hazard early warning systems address several hazards and/or impacts of similar or different type in contexts where hazardous events may occur alone, simultaneously, cascadingly or cumulatively over time, and taking into account the potential interrelated effects. A multi-hazard early warning system with the ability to warn of one or more hazards increases the efficiency and consistency of warnings through coordinated and compatible mechanisms and capacities, involving multiple disciplines for updated and accurate hazards identification and monitoring for multiplehazards" (UN, 2016).

and multi-stakeholder forums have also played a critical role in translating early warning information into AA planning and implementation. In Sudan, for instance, the SMA disseminates seasonal forecasts through a variety of social media and communication channels, as well as through federal and state-level workshops. These forecasts are also used by non-governmental stakeholders such as the Inter-Agency Standing Committee (IASC), which prepares annual emergency response preparedness plans on the basis of information provided by SMA (Key Informant Interview).

There remain missing links in the system between early warning and early action

Inadequate communication and dissemination of information is routinely a limiting factor preventing the use of early warning information to inform and trigger AA. In other cases, the lack of involvement of critical stakeholders and knowledge brokers prevents more effective functioning. While forecasts and EWSs are relatively well connected with humanitarian response agencies in Sudan, collaboration with agricultural extension services to disseminate information to farmers across the country is missing (Key Informant Interview). In Tunisia, the government has been largely relying on traditional media such as television and radio to distribute early warning messages to the public, even though the vast majority of Tunisians now use social media and mobile phones (European Union Civil Protection, 2018). To address this gap, the Tunisian Ministry of Interior and the Ministry of Technologies and Communication partnered with phone network operators in 2020 to extend the dissemination of early warnings for floods to text messages (GSMA, 2020).

Institutional capacity for the implementation of reliable and well-functioning EWSs is a common challenge preventing the effective use of EWSs for AA. In Tunisia, for instance, existing EWSs have been deemed unreliable, lacking geographic coverage in some areas and poorly implemented (World Bank, 2020a; European Union Civil Protection, 2018). Data sharing is also limited across government agencies, meaning that in many cases available information is not used for decision-making (Key Informant Interview).

Predicting disease outbreaks and conflict to enable AA – new frontiers?

A number of innovative pilot projects and initiatives have been implemented in MENA countries in recent years, pushing the boundaries of predictive analytics to prevent, reduce and mitigate potential impacts from expected disease outbreaks, conflict and displacement. In 2019, a collaboration between the UK Met Office, the US National Aeronautics and Space Administration (NASA) and the University of Maryland was able to predict cholera outbreaks in Yemen with 92 percent accuracy. Information was transmitted in the form of weekly guidance specifically tailored to humanitarian agencies, enabling them to take AA in geographic areas identified as high risk (Butler, 2018; Met Office, 2018).

Momentum is growing for enhancing the recognition of conflict in AA in the humanitarian community, but conflict analysis is a still a major shortcoming in AA, and predicting conflict and its effects remains challenging. Conflict analysis and its incorporation into EWSs is also highly political, especially where EWSs are led by governments that are party to the conflict at the same time (Maxwell and Hailey, 2020). Without progress in this area, AA more generally may have limited relevance for some countries in the MENA region, given the prevalence of ongoing and prolonged situations of violent conflict in this context.

Despite limitations in the scientific modelling and prediction of violence and displacement, there are examples in the MENA region where humanitarian action has been taken in anticipation of displacement, based on in-depth contextual analysis, rather than through the use of automated triggers which are common in AA for hydro-meteorological events. In Iraq and Lebanon, the Start Fund's anticipation window has been activated in anticipation of spikes in displacement resulting from increased military action and the destruction of refugee camps respectively. In both cases, the humanitarian impacts of political decisions were projected using a range of information and expert judgement, and decisions to activate the fund were taken on the basis of this assessment (Start Network, Private Communication).

Photo: WFP/Carlos Munoz

Box 4 | Examples of operational early warning systems in the MENA region

Sudan	The Multi-Hazard Early Warning and Mitigation Centre of the Sudan Humanitarian Aid Commission (HAC), in coordination with the SMA and the Ministry of Irrigation and Water Resources, provides a monthly bulletin and a flood watch update on a three-day basis including rainfall prediction, rainfall for the previous days and river water levels (HAC, 2017). 24-hour forecasts are also provided using data from the US Climate Prediction Centre and the National Centers for Environmental Prediction model (HAC, 2019). However, as recent floods showed, although there are warnings via the news and radio channels, information does not reach people on the ground, including farmers, in a timely manner (Key Informant Interview).
Jordan	An EWS for flash floods was installed in Petra and Wadi Mousa as part of the UNDP's support to the Petra Development and Tourism Region Authority[14] and in partnership with the Department of Meteorology. However, the Wadi Mousa EWS established in 2014 is no longer functional due to lack of maintenance (CADRI 2018). The EWS in Petra gives alarms when the rainfall in one or more of eight stations exceeds the limits that may cause flooding. The EWS sends warning by SMS, voice alarms, emails, messages on the internet, or messages on public screens to local communities and visitors. Evacuation drills and plans were developed in collaboration with tribal leaders and regular drills are held in schools and hospitals on an annual basis (UNDP, UNDRR and SDC, 2016). However, in 2018 a flash flood killed 12 people and over 3,500 tourists had to be evacuated (Al Jazeera, 2018).
Tunisia	The DRR program Villes Résilientes (Resilient Cities), funded by UNDP Tunis, was implemented in Ain Draham and Tataouine. Preparedness actions, notably through the acquisition of equipment, have been defined, and a means of disseminating early warnings to the population has been ensured (Key Informant Interview).
Lebanon	Since 2008, the Lebanese Agricultural Research Institute (LARI) has been sending early warnings via SMS to farmers, which in 2015 transferred to an app (Key Informant Interview). By 2018, there were reportedly 30,000 users receiving daily messages about agriculturally relevant weather forecasting for the coming three days (Key Informant Interview). The system also incorporates warnings related to pests/disease, climate events and agricultural practices required.[15] SuNaR is a new system which intends to become a MHEWS platform for Lebanon. The National Council for Scientific Research has been releasing bulletins with actions that need to be taken to mitigate the risk of fire, starting with flood and forest fires (Key Informant Interview). These bulletins are shared with governorates, and in turn to municipalities, along with a three-day forecast. The DRM unit is working with the Lebanon Ministry of Interior to set up a hotline for direct communication with the municipalities and a set of SOPs for each level of alert (Key Informant Interview).
Egypt	Between 2008 and 2010, the Egyptian Ministry of Water Resources and Irrigation, in cooperation with a Belgian company and the Free University of Brussels, developed an EWS for flash floods on Egypt's Red Sea coast and desert areas (in the Sinai), called Flash Flood Manager (FLAFLOM). This EWS pilot was established based on the consultation and local knowledge of local communities, especially Bedouins (Cools and Innocenti, 2014). FLAFLOM uses rainfall forecasts and simulation to measure flash floods risks. When a threshold is reached, an early warning by phone or email is sent to the Crisis and Disaster Management Centre (IDSC, 2015). Actions are then decided by the Sinai governors and municipalities (Cools and Innocenti, 2014). Although a 2015 national progress report called for it to be extended to all flash flood-prone areas (IDSC, 2015), Cools and Innocenti (2014) argue that this EWS needs to be strengthened, with more precise thresholds and better dissemination between agencies but especially to affected people.

14 The Petra Development and Tourism Region Authority is a financially and administratively independent institution, generating resources from national government allocations and revenue from entry tickets to archaeological sites. The project was funded by the Swiss Agency for Development and Cooperation and the cost shared by the Government of Jordan and the Petra Development and Tourism Region Authority.

15 The LARI EWS was awarded 2.84 million to extend the programme to the Beqaa Valley in late 2016 but this research has been unable to ascertain whether this was funded/completed.

Note: Examples were extracted verbatim from the country mapping compendium. This list is illustrative and non-comprehensive.

Spotlight on: Drought monitoring in Jordan

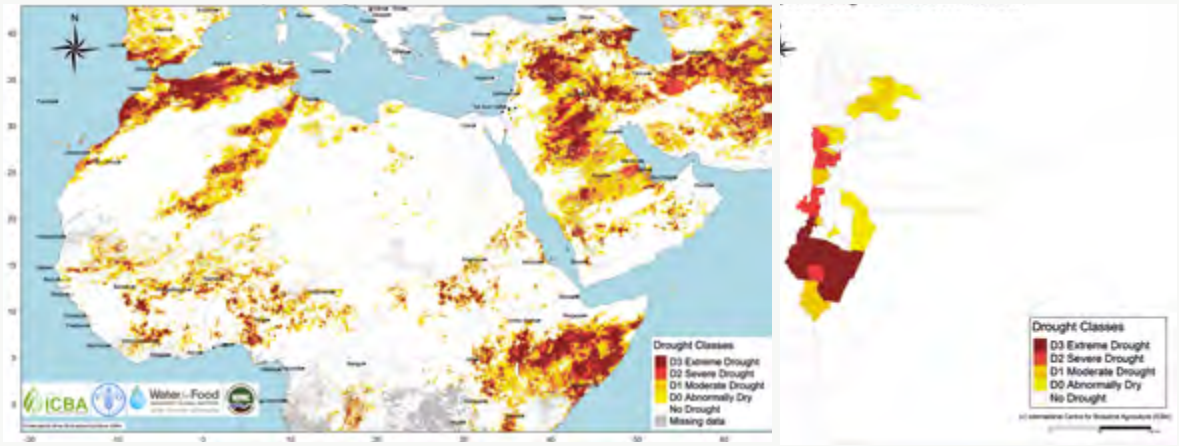
The Regional Drought Monitoring System - Middle East North Africa (MENA RDMS)

The MENA Regional Drought Monitoring System (MENA RDMS) was developed and implemented under the USAID-funded MENA RDMS project between 2015 and 2019. The MENA RDMS has focused specifically on Morocco, Tunisia, Lebanon and Jordan and was customised to each of the four countries.

A key objective of the MENA RDMS was to "develop a drought monitoring system which can help to capture the extent and severity of drought conditions and be used as a decision-support tool by the drought management units in each country as part of their planning and mitigation processes" (ICBA, 2021). The MENA RDMS does not constitute a forecast, nor does it include forecasts of future meteorological or hydrological conditions. However, it provides a system to monitor drought on a continuous, regular basis, so enabling action being taken early to reduce and mitigate expected drought impacts before they evolve into a humanitarian crisis.

The MENA RDMS uses a Composite Drought Index (CDI). This combines indices on rainfall, vegetation and soil moisture anomalies[16] into a single product that describes drought conditions of particular relevance to agriculture and rangelands (displayed in Figure 4).

Figure 4. **The MENA RDMS regional and national composite drought index maps for December 2021**



Source: ICBA (2021)

What is the enabling environment for AA for drought in Jordan?

The Government of Jordan has taken steps to enhance the coherence in drought risk management, and to improve drought monitoring and EWSs in recent years, even though these are still very preliminary steps (Key Informant Interview). The country's Ministry of Water and Irrigation recently developed a policy for drought management in Jordan.[17] Some of the relevant policy objectives include "Strengthening national capacities through the establishment of a national drought forecasting and early warning system" and "Develop and implement national drought management plans based on proactive risk management rather than crisis management in order to address various types of drought in coordination with the public and private sectors" (Jordan Ministry of Water and Irrigation, 2018:12). This was endorsed by the cabinet and is expected to guide national efforts in mitigating drought impacts (Jordan Ministry of Water and Irrigation, 2018).

The CDI developed through the MENA RDMS project is being integrated within the drought management structures and processes of the Government of Jordan (more on this below), which provides a basis for continued drought observation and early action. One of the advantages of the RDMS is that it is open source, so there are fewer barriers to data sharing and the information can be used by all stakeholders (Key Informant Interviews). The open-source nature of the system and the platforms on which is was originally written also mean the approach is flexible, easy to handle, and can be modified and upgraded as required. The system is simple, easy to use and requires low computing power to run (ICBA 2021).

16 The data comes from various sources: precipitation data is produced by the Climate Hazards Group of the Department of Geography at the University of California at Santa Barbara; the data product is called the 'Climate Hazards Group InfraRed Precipitation with Station' (CHIRPS); a global normalized difference vegetation index (NDVI) product available from the United States Geological Survey (USGS); land surface temperature data from MODIS and sub-surface conditions data is some data is generated at ICBA using the Land Information System (LIS model) (ICBA, 2021)

17 UNDP provided technical assistance for the development of the policy statement under the GoAL WaSH programme (https://www.undp.org/content/undp/en/home/programmes-and-initiatives/goal-wash.html).

What barriers prevent AA from happening and how are these being addressed?

Despite the open-source CDI and potential for collaboration related to it, institutional overlaps and challenges in drought risk monitoring remain.

There are currently two drought monitoring units under different government ministries in Jordan: one under the Ministry of Water and Irrigation, which is the institutional home for the MENA RDMS-developed CDI, and the other under the Ministry of Agriculture's National Agricultural Research Center (NARC), which deals with agricultural drought. The latter has the capacity to monitor drought risks using remote sensing technology, including different vegetation indices that were compiled with seasonal precipitation records. The Ministry of Water and Irrigation drought monitoring unit invites NARC to technical meetings on drought (WFP Jordan, Personal Communication 2021).

The CDI is not yet fully validated and a preliminary assessment of its performance has shown some inconsistencies.[18] Therefore, at present, decision-making on the basis of the CDI maps is limited (Key Informant Interview). Further technical elements of the system are also limiting its accuracy, as well as the timeliness of potential actions being taken on the basis of the information it provides. This includes the current resolution of 5km, which is inadequate for areas with geographic areas with diverse microclimates, as well as the monthly frequency of map production. Both aspects are being considered in an ongoing revision of the system, which aims to advance the approach to 1km resolution and the frequency of map production to one week (ICBA 2021).

Currently there is no forecasting capability for droughts in Jordan and the MENA RDMS is providing drought monitoring information based on observed parameters only. Forecasts of weather and climate would help to forecast drought conditions, assuming that forecasts are sufficiently accurate. There is a great level of interest from stakeholders in Jordan and across the MENA region to access forecasts of drought conditions over the growing season for better decision making (ICBA 2021). However, since the JMD currently does not have the technical capacity to do this, the International Water Management Institute (IMWI) is providing technical assistance towards the development of a seasonal weather forecasting model that could create an EWS capable of predicting drought (Key Informant Interview).

To what extent is AA institutionalised within government systems and operating at scale? What opportunities and entry points exist to strengthen AA?

A newly formed drought monitoring unit is hosted at the Jordan Ministry of Water and Irrigation and an operational drought monitor is now running at the JMD and ministry. The Ministry of Water and Irrigation coordinates the Drought Technical Committee which has developed a drought action plan that follows the Integrated Drought Management Programme's (IDMP) three pillars of drought risk management:

- Monitoring and EWSs.
- Vulnerability and impact assessment.
- Mitigation and response (IDMP, n.d.).

The Drought Technical Committee is responsible for recommending changes in drought response level and response actions to the National Drought Management Committee.[19]

The MENA RDMS system has been fully transferred to the drought monitoring unit in Jordan, and the unit now generates the drought maps on a monthly basis, which are then discussed by the Drought Technical Committee. This was facilitated by a needs assessment and close coordination with in-country stakeholders and decision-makers from the start of the project (Key Informant Interview). Ministry of Water and Irrigation officials in the drought monitoring unit have been working with the MENA RDMS team through the multi-stakeholder Drought Technical Committee in Jordan to incorporate a CDI "in the ongoing drought governance and planning developments" (Fragaszy et al., 2020: E1163).

18 A preliminary assessment of IMWI-derived data versus observed data has shown some inconsistencies (Key Informant Interview).

19 An inter-ministerial committee responsible for senior drought decision-making and coordination. The National Centre for Security and Crisis Management will be involved in this committee.

4 Planning

Photo: WFP/Muhammad Salah

Summary: Planning

- There are numerous examples of new disaster strategies and policies in the region that help lay the foundations for disaster risk management as a whole, such as in Jordan, Tunisia and Lebanon. However, there are also many examples of legal and regulatory frameworks being stalled from implementation owning to lack of official clearance or ratification by government as in Lebanon and Sudan. For other countries, such as Tunisia, existing legal frameworks still need to be updated.
- Disaster events can in some cases act as a trigger for future planning for AA within government and humanitarian agencies. While some examples of ad hoc anticipatory humanitarian action in the region demonstrate what AA can look like in practice, they are also far from a system that can plan and deliver timely and reliable AA at scale.
- AA is often more prevalent in sectoral and hazard-specific plans and strategies, or individual projects, rather than as part of a robust systematic approach to planning for AA across all hazards within a country. Across all countries, there remain challenges in working across sectors and ministries, limiting the ability to transform hazard-specific actions into a robust multi-hazard AA system and planning.
- In some countries the complex and changeable political arrangements, and sub-national conflict situation are reflected in the complexities of the landscape for disaster risk governance, and present barriers to advancing planning processes. Moreover, across the region, the instigation or escalation of violent and armed conflict within and between countries presents significant challenges to enacting more systematic planning on AA – and can even lead to reversals in progress.
- Looking ahead, there are possible entry points for improving planning, including in Jordan, Sudan, Tunisia, Yemen and Iraq. There is also interest in applying lessons from planning on AA from outside the MENA region, and in using climate funds to enhance climate and disaster planning processes.

Laying the foundations for planning for anticipatory action

There is evidence of planning for AA in the MENA region. This is often nascent, piecemeal and/or as part of individual projects rather than a robust systematic approach as part of an institutional commitment, but is nonetheless noteworthy.

In Jordan, a series of new disaster strategies and policies has been crafted which lays the foundations for action on DRM more broadly. For example, the Jordan National Disaster Risk Reduction Strategy 2019-2022 was endorsed in 2018 and aligns with the Sendai Framework (UNDRR, 2015a), prioritising earthquakes and flooding. The country's National Climate Change Policy for 2013-2020 is currently being revised but is expected to enhance planning for better coordination across DRR and climate change adaptation actions. While there is commitment to coordinate responses, including in collaboration with the new National Water Strategy 2016-2025 and National Agricultural Development Strategy 2020-2025, there is no coordination mechanism to plan and implement preparedness interventions across sectors and levels so there remain gaps in planning to be addressed (Hagood, 2020; CADRI, 2018; Jordan Ministry of Environment, 2018).

There are also examples of sub-national authorities making progress on aspects of risk management, even in the absence of a strong national coordinating body for DRR. Municipal and city-level administration can provide an important entry point for risk management. At the municipal level in Lebanon, for example, many cities have signed the 2013 Aqaba Declaration and engage in the Making Cities Resilient campaign (Peters et al., 2019). Risk management plans have been devised at the governorate and city level, with multi-stakeholder committees set up to design and oversee the implementation of city risk management plans (Peters et al., 2019). In Jordan, many Arab municipalities committed to the Aqaba Declaration, with disaster risk management strategies prepared for cities such as Amman, Aqaba, Zarqa, Irbid, Madaba, Jarash, Salt and Mafraq. These cities are also part of the Making Cities Resilient campaign. However, the level of implementation of the plans varies. In Tunisia, as well as a governance structure that includes a national commission and regional commissions with representation at the governorate level (AFD and ONPC, 2020), there are also local commissions which work at the municipal level as part of the decentralisation of DRM throughout the country. Further examples of AA planning may exist at the sub-national level although documentation and validation of these is severely lacking – an area warranting further in-depth empirical research.

Stalled policy validation processes hamper efforts

Many countries lack a comprehensive DRM policy that incorporates AA or regulatory architecture that

enforces regulations and codes uniformly. This is true to varying degrees for all countries studied across the region.

Government endorsement or ratification of legal and policy frameworks remains a challenge, with many instances where draft laws and policies are stagnant, awaiting official clearance. For example, in Lebanon a draft national disaster management strategy and national preparedness and response plans exist but are awaiting approval (Baaklini, 2019). This does not bode well given that a law to create a DRR authority within the countries has been on hold in parliament for the past 20 years (Mahfouz, 2021). In Sudan, a national disaster risk reduction strategy for 2016-2030 is still awaiting cabinet and parliamentary approval. In Iraq, a national disaster risk reduction law submitted to cabinet in 2014 (UNDP, 2014) has been drafted but its status remains unclear, while the national disaster risk reduction strategy developed in 2011/2012 awaits final approval (Key Informant Interview).

Not only are delays to formal approval processes stalling action on risk management, but they are resulting in a vicious cycle where new plans have to be developed because the deadline for approval has elapsed. Take as an example Sudan's National Disaster Risk Reduction Strategy 2016-2030, which should be already be five years into implementation (UNDRR, 2019), or Yemen's draft national disaster management plan, which was prepared in 2006, updated in 2010 and is still awaiting approval (Government of Yemen, 2011; GFDRR, 2016). Given the changing nature of risk profiles in the region – owing to risk accumulation resulting from urbanisation, displacement trends increasing exposure, conflict trends impacting disaster vulnerabilities, and climate variability and change – such delays are significantly impeding the quality of planning processes and resulting implementation. Moreover, without foundational DRM plans, preparedness, contingency and delivery plans specifically for AA are impeded.

Finding ways to overcome the constraints presented by stalled or unvalidated disaster laws, strategies, plans and policies will be paramount to advance risk management and aspects of planning for AA in the near, medium and long term. Furthermore, in some countries the process of updating existing legal frameworks is still required. In Tunisia, for example, the current legal and institutional framework on disasters embedded in the 1991 disaster law is largely reactive, does not cover the entire DRM cycle and actors that need to be involved, and does not adequately address all hazards relevant to Tunisia today (Belli, 2017; Gallali, 2014). Reform of the law is currently underway, which includes a greater emphasis on prevention and preparedness, the role of local authorities, and the integration of drought and climate change (Key Informant Interview).

There are a number of examples of draft laws, policies, strategies and plans awaiting validation. When this happens, they will provide a more robust policy and regulatory framework in which to pursue AA planning. In Tunisia, for example, a disaster risk reduction strategy has been drafted alongside an action plan and, once validated, will provide a positive step forward in laying the foundations for risk management planning more broadly (République Tunisienne, 2019; Key Informant Interview). The strategy includes the ambition to better understand disaster risk, which would in turn help improve planning processes, strengthen capacity which may result in improved plan design, and spur investments through external donors to enact those plans.

Disaster events act as a trigger for future planning for anticipatory action

Disaster events can act as a driver of AA, through the review and bolstering of disaster risk governance institutions and mechanisms, policies and plans. For example, following the Sudanese floods in 2020 the country's first ever post-disaster needs assessment prompted the call to establish a federal body on DRM under the prime minister. Previous devastating floods prompted the establishment of the Flood Task Force in 2006 to help improve preparedness, coordinate contingency planning and response, and to support common tools for needs assessments, information sharing and early warning (OCHA, 2020b; Key Informant Interview). Greater advancements in these areas are also critical for the establishment and strengthening of AA plans and approaches.

There remains a need to shift perceptions and action to undertake AA planning, in conjunction with strengthening existing planning for emergency response. In Tunisia, for example, the Ministry of Agriculture has ground truthing systems in place to assess crop failure at the end of the season. These are used to declare the percentage area damaged by drought in order to inform credit rescheduling. Complementary measures that promote ex-ante action need to be encouraged, using the systems that currently exist for post-disaster assessment and response towards anticipatory planning and preventative action to mitigate risk.

Humanitarian response can support planning for anticipatory action

Across many countries, government-led and external humanitarian plans provide important avenues for preparedness and risk reduction planning and action. Iraq's 2021 Humanitarian Needs Overview (HNO), for example, not only outlines the major vulnerabilities within the country but also states the ability of partners to adjust to sudden onset events such as flooding and subsequent population movements, cholera outbreak or other hazards and threats as they occur (OCHA, 2021a). For some countries, it is only within humanitarian systems that aspects of AA are evident. For example, in Iraq, the only examples of AA this study identified are pre-positioning of life-saving assistance through a rapid response mechanism (RRM) to manage newly displaced populations (WFP, UNFPA and UNICEF, 2017). In 2019, the Start Network also launched a displacement-related anticipatory alert

(Start Network, 2021b). In Sudan, a strategic reserve of cereal stock was built by the Strategic Reserve Corporation during the 2015 El Niño event (HAC, 2017). While these examples demonstrate what anticipatory humanitarian action can look like in practice, they are also far from a system that can plan and deliver timely and reliable AA at scale.

There are examples of advance planning for AA throughout the region, particularly those tied to pre-existing humanitarian planning and decision-making mechanisms. For example, in Yemen in 2020 the Start Network signalled the need for action in response to two live flooding alerts and CARE International responded in the Marib and Hajja Governorates (Start Network, 2021b). In the same year, US$30 million was allocated by CERF for rapid response to avert famine (CERF, n.d.).

Response architecture and plans continue to be established across the region. Sudan, for example, set up an Emergency Coordination Operation Centre in September 2020 to help improve multi-stakeholder coordination in flood relief situations. Sudan also proposes to establish a permanent strategic federal body to coordinate national, regional and international efforts in the field of DRM headed by the prime minister. In other countries, there remains work to be done. In Lebanon, a growing policy and operational architecture for response exists, but there is little integration of longer term risk reduction or AA. Tunisia lacks overall preparedness plans or the means to take ex-ante action, being largely reactive to disaster events (FAO, 2018b; Ministčre de l'Environnement de Tunisie, 2014). Sharing lessons across the region to exploit opportunities for embedding AA planning into humanitarian response plans and action would be valuable.

There are further examples of initiatives and mechanisms which could provide opportunities for improved planning on AA but are not currently functioning. For example, in Yemen, the Integrated Famine Risk Reduction (IFRR) programme was set up to identify priority 'hot spot' districts using a multi-sectoral approach. However, the IFRR's static approach to hotspot identification undermines the ability to use this programme for planning or early warning (Maxwell et al., 2019). In a separate example the Famine Action Mechanism (FAM) uses the Famine Early Warning Systems Network (FEWSNET) and the IPC with the intention of making predictions to facilitate AA at scale through pre-negotiated financing. Despite the potential, however, there has been no evidence of further progress to expand FAM in Yemen.

Opportunities and challenges of working across sectors and ministries

It is relatively common for there to be more than one institution with a mandate for disaster management, and therefore also for aspects of AA. In Jordan, for example, responsibility lies with the National Committee for Security and Crisis Management, Jordan Civil Defence and the High Council of Civil Defence. In Iraq, both the Ministry of Health and Environment and the Civil Defence Directorate in the Ministry of Interior have DRR mandates, complemented since 2014 by a Joint Coordination and Monitoring Centre within the Prime Minister's Office. In Sudan, responsibility lies with the National Council for Civil Defence and the HAC. In some countries, such as Lebanon, cross-government coordination has informed the development of city and governorate-level DRM plans (Peters et al., 2019). Coordination across relevant departments and collaboration with a broad range of stakeholders is critical for AA, for instance around data sharing to enable comprehensive risk assessment, impact-based forecasting and planning. Country experiences (see Compendium), however, show that this can be difficult to achieve in practice, and that limited collaboration and institutional siloes often prevent more effective disaster management, preparedness and AA.

AA is often more prevalent in sectoral and hazard-specific plans and strategies. For example, in Lebanon almost all the main ministries have response plans and operation rooms for the hazards and threats related to their thematic mandate (e.g. water, agriculture, public works, energy etc.) For biological hazards such as polio, meanwhile, national health campaigns run by the Ministry of Social Affairs have enacted preventative measures across the country (Government of Lebanon, 2015).

While distribution of risk management across ministries and institutions can be a positive thing, it is not uncommon for broader AA to be segregated by sector or ministry but without sufficient overall coordination at the central level. Nor is it always clear how various iterations of DRR plans are related, with many not articulating clear links to other national frameworks – as is the case for Sudan's draft 2017 national policy for disaster risk management. As observed across many MENA countries, including Sudan, such confusion can stem from a lack of structured coordination across ministries, the different pace of approval processes within ministries for plans and strategies, the delay in officiating laws and policy documents, and the lack of technical and financial resources to develop cross-sectoral policy design and implementation.

Where there is no clear disaster management law but a range of DRM-related legislation across various ministries, there can be benefits such as disbursement of responsibility and greater sectoral involvement. However there can also be duplication and overlaps, and uncertainty about who responsibility lies with; for example, around certain anticipatory actions. It also makes the job of advocating for greater AA more dispersed, requiring the engagement of multiple government agencies and/or ministries. This is a challenge noticed by the Capacity for Disaster Reduction Initiative (CADRI) in its 2018 assessment of Jordan's disaster risk governance arrangements, wherein responsibility across multiple institutional mandates creates overlaps in roles and responsibilities (CADRI, 2018). Jordan's complex structure of

hydro-meteorological services sees the Ministry of Water and Irrigation responsible for hydrological and meteorological monitoring, the JMD responsible for observing meteorological variables, and both the Water Authority of Jordan and the Jordan Valley Authority responsible for water management. While there is adequate drought monitoring, there is no dedicated drought impact reporting system, so the response is neither systematic nor institutionalised (FAO, 2018b). With strategies, policies and programmes related to drought management cutting across the Ministry of Water and Irrigation, Ministry of Environment and Ministry of Agriculture, clearer institutional and legal frameworks are required to enable better coordination (Skoien et al., 2018). There is some hope for improvement, with a new drought management unit within the Ministry of Water and Irrigation proposed to address these issues (Key Informant Interview), something that may be easier said than done.

The complexity of conflict for planning anticipatory action

In some countries the complex and changeable political arrangements and sub-national conflict situation are reflected in the complexities of the landscape for disaster risk governance and present barriers to advancing planning processes. In Yemen, for example, there exists the internationally recognised government in Aden (Republic of Yemen Government) and the de facto Houthi (Ansar Allah) authorities in Sana'a. For the former, the Supreme Council for Civil Defence and subsequent committees for disaster management, the Disaster Management Unit within the Ministry of Interior and the National Disaster Management Coordinating Committee exist, although are not necessarily fully operational. For the latter, since 2019, the Supreme Council for the Management and Coordination of Humanitarian Affairs and International Cooperation has been established, with a remit for disaster management and response (WFP, 2019a). For AA to be viable in complex conflict-affected contexts, navigating these political and changeable arrangements will be necessary, an area of work that has received very little attention globally from the AA community.

The instigation or escalation of violent and armed conflict within and between countries presents significant challenges to enacting more systematic planning on AA, and can even lead to reversals in progress. For example, prior to the conflict, Yemen with support from international agencies had taken important steps to move from a focus on disaster relief to one of preparedness and broader risk reduction (GFDRR, 2016). Progress has since been stalled and reverted to focusing on humanitarian assistance to deal with repeated acute crises. In Syria, prior to the current conflict, the government had taken steps to improve national disaster risk planning and management systems through institutional reform. This included establishing a commission on disaster risk, preparing a national disaster risk strategy, creating an earthquake risk management framework at the city level for Damascus, and improving access to hazard information to inform planning processes. The last five-year plan for 2011-2015 also included DRR (World Bank, 2014b). Further research is required to better understand how reversals in progress happen from a historical perspective and what can be done during changing conflict situations to preserve disaster risk governance arrangements and planning processes.

Natural hazard-related disasters such as droughts and flooding, as well as internal and cross-border conflicts, have produced overwhelming patterns of displacement across the region. For many countries this results in high numbers of new and protracted IDP with their own needs and vulnerabilities – to hazards and to conflict. Because of the different constellations of agencies involved in responding to IDP, AA within IDP camps and informal settlements requires special attention. In Syria, for example, the 2021 HNO (OCHA, 2021b) makes clear the high exposure and vulnerability of tented settlements in north-west Syria to flooding during the winter season. The HNO aims to identify and plan for conditions of flooding and snow storms, aiming to minimise risk through planning of site selection. If effectively undertaken, this contributes towards aspects of the AA, although all components of the AA system would need to be pursued for such actions to be regarded as a robust example of AA. Snow storms in Lebanon in 2019 also affected Syrian displaced refugees, prompting the humanitarian response in IDP camps to be scaled up (Peters et al., 2019). Similar experiences can be seen throughout the region over the last decade.

Forthcoming activities that may provide an entry point for improved planning

Looking ahead, there are a number of forthcoming activities aiming to increase understanding and action on planning for DRM and in turn aspects of AA. These include:

- In Jordan, the UNDRR, UNDP and WFP are planning to undertake a review of DRR framework and legislation with a view to informing future improvements in disaster risk governance arrangements, particularly since the 2019 merger of the Jordan Civil Defence and Gendarmerie departments into the Public Security Department which has legal and institutional ramifications (Key Informant Interview).
- In Sudan, WFP aims to undertake feasibility studies to assess the enabling environment and capacities for FbF in the country (Key Informant Interview).
- In Tunisia, a national plan for drought is being drafted in collaboration with the UN Convention to Combat Desertification. The plan includes the proposal to set a series of priority objectives including the establishment of functional EWSs and related indicators, strengthening monitoring networks, and enhanced capacity for data use and exchange (Key Informant Interview).

There is also interest in applying lessons from AA planning in other regions. For example, the Yemen Red Crescent Society currently focuses on humanitarian response but is interested in better understanding whether and when the IFRC FbF mechanisms could be suitable for the Yemeni context. In Syria, the FAO Early Warning Early Action report (April-June 2020) suggested there was scope to establish anticipatory actions such as distribution of cash, livestock and agricultural equipment for the purpose of averting or minimise food insecurity, particularly within IDP communities.

In some countries, climate change funding has provided means to pursue aspects of DRM planning. In Iraq, for example, the Green Climate Fund is supporting the country to formulate and implement its ambitions to strengthen institutional, technical and financial capacities to manage climate-related risks. As governments become more familiar with the avenues through which to access climate finance, opportunities may open up for further investment in climate and disaster planning.

Photo: WFP/Hani Saleh

5
Financing

Photo: WFP/Deniz Akkus

Summary: Financing

- Some MENA countries have strategies or legislative frameworks that stipulate the allocation of government budgets to DRR and management systems, which provide a basis for the implementation of AA. In practice, however, such strategies are not always implemented nor are the resources they aim to earmark used consistently. Overall, DRR, DRM and preparedness remain largely underfunded in the region.
- Government emergency funds at national or sub-national level exist in some countries, though these are largely responsive rather than anticipatory. Most do not have standard budget allocations for risk management and response, while in some cases criteria for allocation and use of these funds are unclear or not systematically implemented.
- In Lebanon, Iraq, Syria and Yemen, crisis response plans, RRMs and country-based pooled funds are supporting ongoing humanitarian responses. In part, these provide the flexibility to respond to sudden onset disasters within a larger crisis situation, and potentially to incorporate AA.
- AA initiatives implemented by international and development organisations in the region have used dedicated funds or specified early action windows in larger disaster and crisis response funds in order to release resources for implementing AA on the basis of advance warnings for drought and displacement.
- At international level, a surge in initiatives linked to financing AA – including REAP, the InsuResilience Global Partnership and the Crisis Lookout Coalition – should provide opportunities for countries in the MENA region to explore financial instruments that might be efficient, timely and sizable enough to support the implementation of AA at scale. Climate finance, including through multilateral climate funds, has already contributed to strengthening the foundations for AA, especially around weather and climate forecasting and EWSs. However, access to climate finance for adaptation remains a challenge for many countries in the region.

Risk management and preparedness systems that enable anticipatory action are underfunded

Some mena countries have strategies or legislative frameworks that stipulate the allocation of government budget to DRR and management. The National Natural Disaster Risk Reduction Strategy for Jordan, for instance, recommends the integration of DRR into the budgets of each ministry, sector and district. It also suggests that the Ministry of Finance and the Ministry of Planning and International Cooperation ensure that provisions for prevention, mitigation and preparedness programmes are included in national development plans and budgets (Government of Jordan, 2018). In Egypt, the National Strategy for Disaster Risk Reduction 2030 highlights the need for investments and budget allocations towards DRR, using tools such as results-based financing or a disaster risk reduction fund (IDSC, 2017).

In practice, however, such strategies are not always implemented nor are the resources they aim to earmark used consistently. Overall, DRR, risk management and preparedness remain largely underfunded in the region. In Lebanon, for instance, even though DRM policy and plans exist, these are not adequately provided for in budgets (World Bank, 2014b). Their implementation tends to depend on donor support (ibid.), which has supported important advancements such as the establishment of the Disaster Risk Management Unit. However, this also means the unit itself is tied up in continuous fundraising and the implementation of project-based and time-bound DRM-related activities, which are often externally driven and unsustainable. This means that, in some cases, comprehensive and systemic change in how disaster risk is managed is hampered (Peters et al., 2019; Key Informant Interview). In Yemen, prior to the conflict, government agencies were committed by the Civil Defence Act to allocate one percent of their annual budgets to DRM, but no clear mechanism was put in place to determine the use of these funds (Government of Yemen, 2011), and it appears that since the onset of the conflict, central budget allocations for DRM have been dismantled.

Government contingency funds for disasters are rare, and mostly ex-post

Government emergency funds at national or sub-national level exist in some countries, though these are largely responsive rather than anticipatory. Most countries do not have standard budget allocations for risk management and response, while in some cases, where contingency funds exist, criteria for allocation and use of these funds are unclear or not systematically implemented (World Bank, 2014b). The Government of Tunisia established the Fonds des Catastrophes Naturelles (Natural Disaster Fund) in 2018 as a mechanism to compensate farmers, fishers and breeders for impacts from natural hazard-related events. However, the fund has not been used so far

and is deemed insufficiently resourced. Because its activation would require an official declaration of disaster, followed by a damage assessment, the Fonds des Catastrophes Naturelles has the potential to support disaster response and recovery but, under its current approach, not AA (Key Informant Interview). In Yemen, government contingency funds existed, but these were not systematically allocated for disaster risk management and response (World Bank, 2014b). In Iraq, annual budget allocations were made to an emergency fund, though this was primarily used for counterterrorism and unrest while in operation (ibid.).

Even though emergency funds might not exist or be fully operational in all countries, DRR legislation can enable governments to smooth the financial impacts from disasters in other ways. In Egypt, the government is mandated to issue an 'intervention bill' to allow for the allocation of funds to compensate people affected by disasters when conditions are considered severe. It can also implement tax reductions, import staples or postpone debt repayment schedules of farmers to banks (Bazza et al., 2018). In Tunisia, the Fond National de Garantie (national guarantee fund) can cover additional interest accrued by a rescheduling of loan repayments from drought-affected farmers (Key Informant Interview).

Humanitarian response funds provide some flexibility for early response and are funding the implementation of anticipatory action

In some countries in the region, crisis response plans and pooled funds are supporting ongoing humanitarian responses. In part, these mechanisms provide the flexibility to respond to sudden onset disasters within a larger crisis situation (UNFPA, 2021). This includes the Lebanon Crisis Response Plan, which is funded through appeals, bilateral donors, trusts and pooled funds to respond to the Syrian refugee crisis (Government of Lebanon and UN, 2020), as well as country-based pooled funds[20] in Iraq, Syria, and Yemen. In Yemen, an RRM operated by the UN Population Fund (UNFPA), WFP and the UN Children's Fund (UNICEF) aims to provide immediate assistance to households who are newly displaced as a result of natural-hazard related disasters, conflict, or other sudden surges in need. In 2020, 22 percent of households who received assistance through the RRM were affected by floods (OCHA, 2021c).

OCHA's CERF has been activated frequently for rapid response in many countries in the region, including all those covered by this study except Morocco and Egypt (CERF, n.d.). Most of these activations have been related to displacement, violence/clashes and post-conflict needs, with some exceptions including instances of cholera, measles and other health emergencies, and insect infestations, floods, storms and droughts (ibid.).

In recent years, CERF has also started funding AA interventions. In the region, frameworks for CERF AA have so far been developed for drought in Somalia and Ethiopia. In April 2021, forecasts of unusually dry conditions in Ethiopia and Somalia triggered the release of CERF funds for AA to reduce detrimental impacts on food security from predicted poor rains in the March to June season (CERF, 2021). This was the second time the CERF AA pilot had become active in Somalia since June 2020 (OCHA, 2020c). Recent activations in Ethiopia and Somalia have been accompanied by monitoring and evaluation activities, which should provide valuable insights and lessons learned to advance frameworks for anticipatory humanitarian action in the MENA region.

AA initiatives implemented by international and development organisations in the region have used dedicated funds or specified early action windows in larger disaster and crisis response funds to release resources for implementing AA on the basis of advance warnings for drought and displacement. The Start Fund's anticipation window has so far been activated in Iraq, Lebanon and Morocco. All three activations were related to anticipated spikes in displacement and the needs of migrants (Start Network, 2021a and 2021b). The FAO EWEA intervention in Sudan in 2017/2018 (see *Spotlight on anticipatory action for livelihood protection in Sudan*) was funded through the release of US$400,000 from FAO's Special Fund for Emergency and Rehabilitation Activities (SFERA) early action window (FAO, 2019a). "The window supports early actions defined as activities taken once an impending threat has been identified, but before disaster losses are sustained in the agriculture sector or livelihoods are compromised. The window finances early actions that (i) prevent an unfolding disaster from happening; (ii) mitigate the impacts of an anticipated event; or (iii) strengthen emergency response capabilities for a specific, imminent threat through targeted preparedness investments" (FAO, 2020b: 15). However, Sudan is the only MENA country included in this study where the SFERA early action window has been triggered so far (ibid.; FAO, 2019b; FAO, 2018c; FAO, 2017).

Expanding financial instruments for anticipatory action

While risk financing is relatively weak in the region overall (World Bank, 2014b), different financial instruments to support AA, as well as early responses after a hazard has struck, are increasingly being explored, especially in the agriculture sector. This includes risk pools and mutual insurance mechanisms, which may trigger pay-outs based on observational data only after a hazard occurs, although depending on the speed of disbursement and delivery can still be timely enough to implement actions to mitigate

20 Country-based pooled funds "allow donors to pool their contributions into single, un-earmarked funds to support local humanitarian efforts. This enables humanitarian partners in crisis-affected countries to deliver timely, coordinated and principled assistance. The funds are established when a new emergency occurs or when an existing crisis deteriorates. They are managed by OCHA under the leadership of the Humanitarian Coordinator and in close consultation with the humanitarian community" (OCHA, n.d.)

impacts and prevent the situation from developing into a humanitarian crisis. The Government of Sudan, for example, has started engaging with the African Risk Capacity (ARC), an African Union specialised agency focused on planning, preparedness and response. ARC also includes a mutual insurance facility (ARC Ltd.), which is made up of its sovereign members. Sudan did not join the ARC Ltd facility's risk pool for any of its first seven annual renewal rounds between 2014 and 2020 (African Risk Capacity, n.d.), although the Government of Sudan signed an MoU with the ARC agency in 2018 to enhance national systems for disaster risk management and finance (African Risk Capacity, 2018).

In 2016, the Ministry of Agriculture in Jordan re-activated its Agricultural Risk Fund, which aims to reduce and manage risks in the agriculture sector. There are plans to expand the fund through the launch of a cooperative solidarity Takaful programme. As part of the Takaful mechanism, the Agricultural Risk Fund would contribute 50 percent of annual premium payments for farmers who register voluntarily. These farmers would then receive compensation in case of damage from natural hazards such as droughts, floods and storms (CADRI, 2018). The Government of Jordan is in the process of amending relevant legislation for the insurance sector to enable the implementation of the scheme (ibid.). Depending on the speed at which the mechanism will be able to pay out once it is operational, it may be able to support early response.

Climate adaptation finance presents opportunities to strengthen anticipatory action systems for extreme weather and climate events, but access remains challenging

Overlaps in concepts and goals between climate change adaptation and disaster risk reduction agendas have meant that climate finance has been playing an increasingly important role in supporting DRR and DRM related to extreme weather and climate events (Watson et al., 2015). In 2014, 43 percent of climate adaptation finance entailed elements of DRR globally (Nakhooda et al., 2014). This included activities focused on early warning and information systems (Watson et al., 2015), which are critical to enable AA. The Government of Sudan is working with the UN Environment Programme (UNEP) to access resources from the Green Climate Fund to strengthen its MHEWS and the provision of climate services (Key Informant Interview). Also in Sudan, the Climate Risk Finance for Sustainable and Climate Resilient Rain-fed Farming and Pastoral Systems in Sudan project (funded by the Global Environment Facility's Least Developed Countries Fund (LDCF) and supported by UNDP), aimed to improve weather forecasts and climate observations to enhance EWSs for farmers and pastoralists (UNDP, n.d.).

Despite the contributions that climate adaptation finance has already made to strengthening components of AA, climate finance from dedicated climate funds in the MENA region is largely concentrated on Morocco and Egypt (Watson and Schalatek, 2020). Bilateral climate finance in the Arab region has also been unevenly distributed, with 94 percent of reported flows in 2016 allocated to only five countries (Egypt, Jordan, Morocco, Qatar and Tunisia) (ESCWA, 2019b).

Importantly, public and private climate finance to the region has been largely concentrated on mitigation rather than adaptation, despite urgent needs for adaptation finance (Watson and Schalatek, 2020; ESCWA, 2019b), including for adaptation initiatives that would contribute to strengthening AA systems. Examples from Sudan highlight the opportunities and role climate adaptation finance may be able to play for AA in the future (see **Spotlight on anticipatory action for livelihood protection in Sudan**).

International momentum for financing anticipatory action

At international level, a surge in initiatives around AA financing provides several opportunities for countries in the region. REAP – of which the Government of Egypt is a member – and the InsuResilience Global Partnership recently co-launched a sectoral community focused on linking risk financing to AA. This is open to stakeholders working in AA or disaster risk finance to identify opportunities for strengthening AA through greater links between EWSs and risk finance.

The Crisis Lookout Coalition, launched in 2021, is advocating for a reform of how disaster response is funded globally. The options proposed by the coalition to achieve this would entail a systemic shift towards pre-agreed finance, informed by enhanced risk information and prediction of future crises. The aim is to increase the speed and improve the timeliness of crisis finance, including by enabling greater use of forecasts to trigger the release of funds for AA. The coalition is also recommending that the G7 group of countries support 'pathfinder' countries to pilot this approach. Pathfinder countries would include about ten highly vulnerable countries requiring support in understanding and proactively managing disaster risks from across different geographic regions and contexts (Scott and Clarke, 2021).

The Grand Bargain, as part of its effort to enhance the efficiency and effectiveness of humanitarian funding, has also emphasised the importance of "being able to anticipate and prepare for crises" (IASC, 2016: 2). A recent review of progress towards addressing the humanitarian financing gap since 2016 – when the High-Level Panel on Humanitarian Financing Report had proposed the Grand Bargain – came to the conclusion that anticipatory financing and action is an area that has "grown in profile and momentum" (Willits-King and Spencer, 2021: 9). The report recommends that the next step is to scale up approaches and to better understand whether and how AA can be adapted in different crisis contexts, especially related to conflict (ibid.).

6
Delivery

Photo: WFP/Omnia Elzahar

Summary: Delivery

- While many countries across the region have well-described institutional structures for DRM, the capacity to deliver on their mandates or to enact ideas and intentions is often constrained by a lack of technical capacity, sufficient and/or flexible financing, and/or mandated authority. Delivery of DRM plans across the region is also severely impeded by the lack of routine and reliable funding. The Red Cross/Red Crescent national societies are important and critical stakeholders in promoting and delivering aspects of AA across MENA countries, including in Lebanon, Syria and Egypt.
- Throughout the region, learning lessons on what makes for effective delivery of preparedness and ex-ante actions is limited by the lack of a robust research agenda in this field. The establishment of a robust MEL framework for AA would be extremely valuable and go some way toward addressing this gap.
- Social protection offers an important avenue to pursue AA because national mechanisms exist in some form across all countries. However, not all include mention of disaster risks and, where they do, they focus primarily on providing support through post-disaster response.
- There is plenty of potential to adapt existing and emerging social protection mechanisms to advance AA. Examples include: the reapplication of lessons on the digitisation of social protection mechanisms to a broader range of countries; leveraging existing mechanisms to expand the range of shocks and threats addressed; and bringing support forward (to be more pre-emptive) through greater attention to longer term trends in vulnerabilities and risks.

Delivery of DRM plans

While many countries across the region have well-described institutional structures for DRM, the capacity to deliver on their mandates or to enact ideas and intentions is often constrained by lack of technical capacity, sufficient and/or flexible financing, and/or mandated authority. This is particularly true when needing to instruct other sectors or ministries to work collaboratively. For example, in 2004 in Yemen a Disaster Management Unit existed to coordinate the delivery of disaster response but was impeded by a lack of financial and technical capacity (Government of Yemen, 2011). A National Disaster Management Coordinating Committee existed, but was not fully operational as of 2014 (World Bank, 2014b). Similarly in 2014 a Joint Coordination and Monitoring Centre was established in Iraq but rendered unable to perform its main functions owing to insufficient technical and financial capacity (Key Informant Interview). In Egypt, the National Strategy for Disaster Risk Reduction 2030 articulates the institutional structure, mandates and coordination mechanisms for the delivery of preparedness and response measures (NSDRR 2030), but the extent to which this is or has been implemented and is operational is unclear.

In a number of countries where conflict has escalated and government institutions' ability to deliver well-intentioned plans on DRR, preparedness, response and recovery have therefore been impeded, there is often a lack of understanding among national and international stakeholders about which institutions are currently functioning and how effective they are. Throughout this research process, interviewees have reported positive progress from their historical recollection of government actions, but are unsure of the current situation. This has been the case across the board for our selected countries. The lack of routine, independent and verifiable empirical monitoring and evaluation to track progress on DRM capabilities at the national level in MENA countries has also hindered a true understanding of the current situation, institutional capability for delivery and government effectiveness.

Above all, delivery of DRR, preparedness and response plans across the region is severely impeded by the lack of routine and reliable funding. In Lebanon, for example, despite the existence of some forecasting and EWSs, lack of funds means that ex-ante action is limited. This is particularly the case through central national systems, although sector-specific and sub-national action is evident (Peters et al., 2019).

Given the limitations and challenges faced by many government institutions responsible for DRM delivery, the Red Cross/Red Crescent national societies are important and critical stakeholders in promoting and delivering aspects of AA across the board. For example, the Syrian Arab Red Crescent is the leading operational humanitarian agency in Syria, working in partnership with UN, the International Committee of the Red Cross and other international humanitarian agencies (SJAC, 2019). In Lebanon, the Lebanese Red Cross is instrumental in supporting the establishment and delivery of governorate-level DRM coordination

mechanisms (Peters et al., 2019) and the Egyptian Red Crescent is equipped with a Central Emergency Operations Center and local emergency operations rooms to support interventions across Egypt in conjunction with its extensive network of 30,000 volunteers (IFRC, 2020).

The Red Cross/Red Crescent national societies are also the backbone of sub-national DRM coordination and delivery mechanisms across many countries in the region. In Lebanon, for example, the Lebanese Red Cross provides much of the local DRM operational support, both through local response teams and to authorities at the governorate and city level (Peters et al., 2019). In Egypt, limited formal decentralisation of preparedness and response delivery at the governorate level is partially overcome through the work of the Egyptian Red Crescent.

Throughout the region, learning lessons on what makes for effective delivery of preparedness and ex-ante actions is limited by the lack of a robust research agenda in this field, and also a lack of independent monitoring and evaluation of plans and actions taken, as is the case in Egypt (IDSC, 2021). The establishment of a robust MEL framework for AA would be extremely valuable and go some way toward addressing this gap. Combined with operational actions such as simulation exercises, it could go some way towards enhancing understanding and action of the scope of inputs required to operationalise an effective AA system.

Social protection as an avenue to pursue anticipatory action

Social protection mechanisms exist in some form across all countries, although not all mention disaster risks and, where they do, they focus primarily on providing support through post-disaster response – a finding reiterated in other recent research (e.g. Tebaldi, 2019). Although the definitions and operationalisation of the concept of social protection varies by country, it is broadly defined as consisting of "policies and programmes designed to protect people from shocks and stresses throughout their lives… Safety nets or social transfers are typical components of a social protection system. They consist of predictable and reliable transfers of food, cash, vouchers or goods to vulnerable groups, such as people living in poverty or food insecurity, in areas affected by disaster, or with a disability" (WFP, 2017). Examples are provided below.

In Jordan, significant advancements over the past few years have included the adoption of the National Social Protection Strategy 2019-2025, an expanded National Aid Fund and a digital payments system. Coverage to scale up payments during shocks is also being pursued through the development of the National United Registry. The National Aid Fund provides cash assistance to vulnerable families living below the poverty line and provides one-off payments in emergencies for physical rehabilitation. In 2018, a three-year extension aimed to double the number of households receiving support, primarily through cash assistance (Jordan Strategy Forum and UNICEF Jordan, 2020). The National Zakat Fund is another main programme, providing cash and in-kind assistance through voluntary committees, and prioritises households that do not receive other kinds of benefits (Tebaldi, 2019).

Tunisia's extensive social security network and safety net programmes are largely administered under the Caisse Nationale de Retraite et de Prévoyance Sociale (CNRPS) for the public sector and the Caisse Nationale de Sécurité Sociale (CNSS) for the private sector, under the Ministry of Social Affairs. There also exists the Union Tunisienne de Solidarité Sociale (UTSS), which is partly state subsidised and provides cash, food, and non-food items in the aftermath of disasters (République Tunisienne, 2019). At present the Amen social programme covers around 30 percent of the population, with eight percent receiving permanent cash transfers (World Bank, 2021a). Throughout the Covid-19 pandemic, cash transfers were granted through Amen. The World Bank and Government of Tunisia have established the Covid-19 Social Protection Emergency Response Support Project which provides cash to support households negatively affected by the pandemic. In support, a "Contingent Emergency Response will allow the government to request from the World Bank a rapid reallocation of the project funds to respond promptly and effectively to an eligible emergency or crisis" (World Bank 2021), with the aim of making the social protection system more responsive. Since Covid-19, attention has been brought to the inflexibility of the current system. The WFP is currently trying to introduce a food security monitoring mechanism to support a more flexible system, while the Ministry of Social Affairs is exploring options for making the system more shock responsive (Peer Review Feedback).

In Sudan, social protection is written into the 2019 Constitutional Declaration, with the Ministry of Social Development responsible for developing a national social protection strategy. The ministry manages the Zakat Fund, which was established in 2001 and provides a safety net against drought, desertification, disasters and epidemics through cash and in-kind support (Bacil and Silva, 2020; Machado et al., 2018). Meanwhile, the country's Shamil scheme uses the Zakat registry to provide transfers to over 8.9 percent of the total population (Tebaldi, 2018). The scheme also aims to provide more holistic support to poor individuals by supporting projects on, for example, irrigation, which offer protection against droughts (Bilo et al., 2020). Since 2020, the Ministry of Finance and Economic Planning and WFP have been collaborating to provide monthly direct cash transfers to around 80 percent of Sudanese families to tackle economic hardship, the impacts of Covid-19 on livelihoods, and to prevent the risk of populations "slipping into extreme poverty" (WFP, 2020).

Advances have been made in strengthening the legal and policy basis for social protection programmes. In Iraq, in 2016 the flagship cash transfer programme was reformed, becoming the Social Protection Network. The Social Protection Network currently delivers transfers to 1.3 million households, with a

further 300,000 on the waiting list. The programme has challenges; the proxy means test, for example, is reportedly absolute rather than predictive, being more suited to predicting chronic poverty and less suited to shock-driven acute poverty (UNDP, 2021). There are, however, positive signs of progress, with WFP supporting the digitisation of the social safety net, through a public distribution system that uses smartphone applications intended to enable citizens to update data without having to visit offices in person (WFP, 2019b).

Social protection successes have provided a mechanism through which AA could be advanced in some countries. For example, Iraq has witnessed the linking of the government's social protection systems with humanitarian cash assistance, as part of a broader effort to improve coordination, harmonisation and effectiveness of humanitarian cash programming. Furthermore, the Government of Iraq is creating a single database of eligible households called the Iraq Unified Registry, which can be used across all social protection schemes (World Bank, 2018). Such efforts provide the necessary foundations for future improvements in data integration, targeting and digitisation (CaLP, 2020; WFP, World Bank, IFAD and FAO, 2020). This could include linking social protection registries with risk data and information about people's vulnerability to different types of hazards, which would be critical to target AA through social protection systems.

More recently, existing social protection systems have been used to respond to Covid-19. In Iraq, Covid-19 restrictions have added increased strain on poor households so, in response, the Ministry of Labour and Social Affairs established a temporary monthly cash assistance grant. While 67,000 households were identified to be added to the Social Protection Network, there is no information on whether the payment targeted the most vulnerable (UNDP, 2021).

Impediments to social protection roll-out

National social protection programmes are in operation in some countries in the region, although fiscal and macroeconomic crisis has impeded roll-out in some contexts and impedes the transformation of social protection systems to shock-responsive systems (Tebaldi, 2019). For example, in Sudan the effective implementation of various social protection schemes have been hampered by national economic crises and cash disbursements have been impeded by insufficient budget allocation and low national currency in circulation. Exchange rate reform also delayed the implementation of a family support programme which was intended to provide a cash subsidy to 80 percent of Sudan's population. This was eventually announced to be disbursed following an exchange rate devaluation in February 2021 (Reuters, 2021; World Bank, 2020b).

Overall coverage of social protection programmes remains variable and patchy, with formal protection low in many countries. This is compounded by limited investments in social insurance across the region with a high proportion of the population working in the informal sector, meaning they do not qualify. Women are often excluded because of the informal nature of their work, for instance in agriculture (UN, 2020). In Sudan, individual farmers largely acquire their own protection against droughts and floods, followed by private transfers and then by formal schemes (Bacil and Silva, 2020). In Lebanon, funds such as the National Social Security Fund provide independent public social insurance. However, despite enrolment being an obligation of employers, up to 40 percent of employees in the private sector are reportedly not registered. Furthermore, the fund excludes those not part of the legal labour force including the self-employed or those in informal labour (Huelzer and Divine, 2020).

The tools and methods used to assess needs are also limiting accurate understanding of the scale of needs. One of the challenges with social protection systems in MENA countries is the focus on poverty analysis through proxy means testing rather than focusing on vulnerabilities more broadly, or on the range of shocks represented including natural hazards, conflict and economic shocks. This is an area requiring further research and action, in order to lay the groundwork for better pre-emptive targeting and genuinely delivering ex-ante AA, rather than responsive support (Peer Review Feedback). Similarly, despite some progress on digitisation in countries such as Iraq, many of the systems employed throughout the region are paper-based and require investment in technical infrastructure to enable digitised systems that are then interoperable with other data sources (Peer Review Feedback). This is particularly the case in relation to systems on vulnerability, exposure and risks to natural hazards, conflict and economic shocks among other threats.

The instigation and upsurge of violent and armed conflict in some contexts present abrupt barriers to the roll-out of pre-existing and new social protection programmes. In Syria, a cash transfer programme called the National Social Aid Fund was discontinued following the 2011 uprisings. Prior to its cessation, around 9.2 percent of the population were receiving funds through the fund. Unfortunately, the fund was considered too nascent to be used as an entry point for shock-responsive programming when the conflict broke out (Tebaldi, 2019). Furthermore, using the fund to pursue new social protection mechanisms in the future is largely unviable as the conflict has had such widespread impacts on the distribution of at-risk populations (not least owing to the high level of displacements) that the previous beneficiary lists are widely believed to be highly inaccurate (Gentilini et al., 2018). In Yemen, the conflict has undermined and ceased the operation of two previously well-functioning social protection systems: the Social Welfare Fund and the Social Fund for Development.

IDP status has shown to cause challenges to accessing social protection schemes (Tebaldi, 2019). IDP returning home in Iraq for example should qualify for Social Protection Network transfers but this often does not happen. In this case, part of the challenge lies in the transfer of information between the Ministry

of Labour and Social Affairs which administers the network, and the Ministry of Migration and Displacement which handles IDP welfare. In Jordan, refugees are in principle eligible for the National Zakat Fund but there is no evidence that any have accessed transfers under the scheme (Röth et al., 2017). Discussions to create a 'refugee window' in Jordan to access social protection have met with some opposition, but there is growing interest in unifying social protection systems in the broader context of transitioning from humanitarian to development operations (Durable Solutions Platform and Columbia University, 2020).

Concerns have been raised about the sustainability of large-scale external humanitarian and development assistance which backstops social protection, including for programmes targeting IDP (UNDP, 2021). This is the case in Iraq (ibid.), as well as in Lebanon where the National Poverty Targeting Programme lacks clear backing in regulation and legislation which is required to ensure continuity. Given the current financial crisis in the country it is unlikely that the government alone would be able to assume responsibility of the cash transfer component from external donors (CaLP, 2020; Bastagli et al., 2019). More broadly across the MENA region, most social protection programme depend on costly subsidy systems (often in-kind) which limited investment until recent years in cash-based social assistance and social insurance. With greater fiscal constraints over the past few years, efforts are being taken to shift to cash-based assistance which allows greater flexibility (Peer Review Feedback).

There is plenty of potential to adapt existing and emerging social protection mechanisms to advance AA.

Looking ahead

Many national social protection programmes, even the most well-established ones, are not shock-responsive and none were found to be anticipatory, although they may have the potential to be adapted. The Tunisian social system, for example, is relatively advanced and has scaled up as an early response to Covid-19, delivering exceptional cash transfers that were granted by the Ministry of Social Affairs in April and May 2020 (ITES, 2020). Similarly, in 2019 a reform of the social protection system aimed to ensure minimum income and healthcare. This currently does not factor in disaster events, but could benefit from integration of disaster-related risks which may set back development gains made through the system or protections afforded to vulnerable populations as a result of transfers.

There is plenty of potential to adapt existing and emerging social protection mechanisms to advance AA. In Iraq, the establishment of a single registry will help in this endeavour, and many believe there remains substantial potential to build a shock-responsive and more agile social protection system to address future crisis and to better target the most vulnerable (UNDP, 2021). Similarly, efforts towards digitisation should help the current system to be more flexible, enabling people to register online and to update their details to qualify for assistance in different locations if displaced. That said, to make the system shock-responsive or anticipatory will require explicit efforts to do so, including building in more data on vulnerability and forecasting for a broader range of risks (Peer Review Feedback). In Jordan, recent efforts to create standardised definitions and measurements of vulnerability are ongoing to better target humanitarian support for refugees, but these do not include an assessment of hazards giving only a partial understanding of vulnerability. Addressing this limitation would help to enhance the quality and scope of threats and hazards, and help bring assistance closer towards achieving aspects of disaster-related AA.

Similarly, in situations where conflict is escalating, there is evidence that humanitarian and development actors can leverage existing social protection mechanisms and institutions to continue delivering in some form. In Yemen, the 2019 Humanitarian Response Plan includes the explicit commitment to preserve state service-delivery capacity as part of its overarching objectives (OCHA, 2019). And, with external support, the Social Fund for Development has continued to operate with significant financial backstopping. The World Bank's Yemen Emergency Crisis Response Project is implemented through the Social Fund for Development and the Public Works Project, building on the design and experience of pre-existing national systems of cash transfers. Similarly, the Social Welfare Fund's administrative systems and connections to the local level have been used by UNICEF.

However, challenges remain across countries. A recent study on Jordan, for example, found cash programming fragmented, and humanitarian and social protection mechanisms in need of greater harmonisation to ensure the vulnerable (including those newly vulnerable owing to conflict) receive adequate support (CaLP, 2021). In Lebanon, a massive scale up of the existing World Bank-funded Emergency Crisis and Covid-19 Response Social Safety Net project intends to bolster the National Poverty Targeting Programme to transform into a comprehensive social safety net system. The cash-based assistance parts of the scheme will be delivered by WFP (World Bank, 2021b). At present, none of these include shock-responsive or AA elements, although many interviewees shared their hopes for such developments over the longer term (Key Informant Interviews). Moreover, the World Bank has also reiterated its ambition to develop "… a comprehensive social safety net delivery system that can respond to future shocks" (World Bank, 2021b: np). Important risk mitigation steps are being taken by WFP as part of this initiative, including collaboration to ensure foreign exchange and inflation risks are minimised (World Bank, 2021b).

Photo: WFP/Hussam Al Saleh

Photo: WFP/Mohamed Gamal

Spotlight on: Early warning systems and anticipatory action in agriculture in Egypt

The Building Resilient Food Security Systems to Benefit the Southern Egypt Region project

Building Resilient Food Security Systems to Benefit the Southern Egypt Region was a project (2013-2020) implemented by Egypt's Ministry of Agriculture and Land Reclamation and WFP, and funded by the Adaptation Fund. Its overall objective was to "build resilience of Southern Egypt farming communities in the face of climate change and variability risks to food security" (Adaptation Fund, n.d.a: 10). After a first phase (2013-2017), a second project phase was launched (2017-2020), which consisted mainly of new target villages. This type of project is particularly relevant in a country where agriculture employs 28 percent of the labour force and represents 11 percent of GDP (USAID, 2021), but is also highly vulnerable to climate change, disaster risks and water scarcity. The project specifically targets five governorates in Southern Egypt (Assuit, Sohag, Qena, Luxor and Aswan), where almost half of the population lives below the poverty line (Khalil, 2017) and 55 percent of people work in agriculture (USAID, 2021). In that region, climate change is expected to lead to a 30 percent reduction in food production (Adaptation Fund, n.d.b).

Implementing AA: Weather forecasting, early warnings and technical advice

The project included a number of activities, generally geared towards more diversified and climate-resilient agriculture, but also "loss reduction in extreme weather events through early warning" (Adaptation Fund, n.d.a: 10). The aim of this component of the project was to fill the gap between institutions responsible for creating information on climate and crops, and the farmers who need this information to cope with climate change (Ghonem, 2020). To do so, one of the outputs of the project was the establishment of climate information centres and EWSs. These centres with local early warning units were established in 49 villages (Adaptation Fund, 2020) in the premises of the local community development associations, which pre-existed and have a major local development role in most villages in Egypt (Key Informant Interview). The project then provided materials and documentation (publications, best practices etc.) as well as training for staff and volunteers (340 in total, Ghonem 2020) that operate in the centres. climate information centres provide information on the impact climate change has on agriculture, recommend adaptation techniques, and offer materials and expertise.

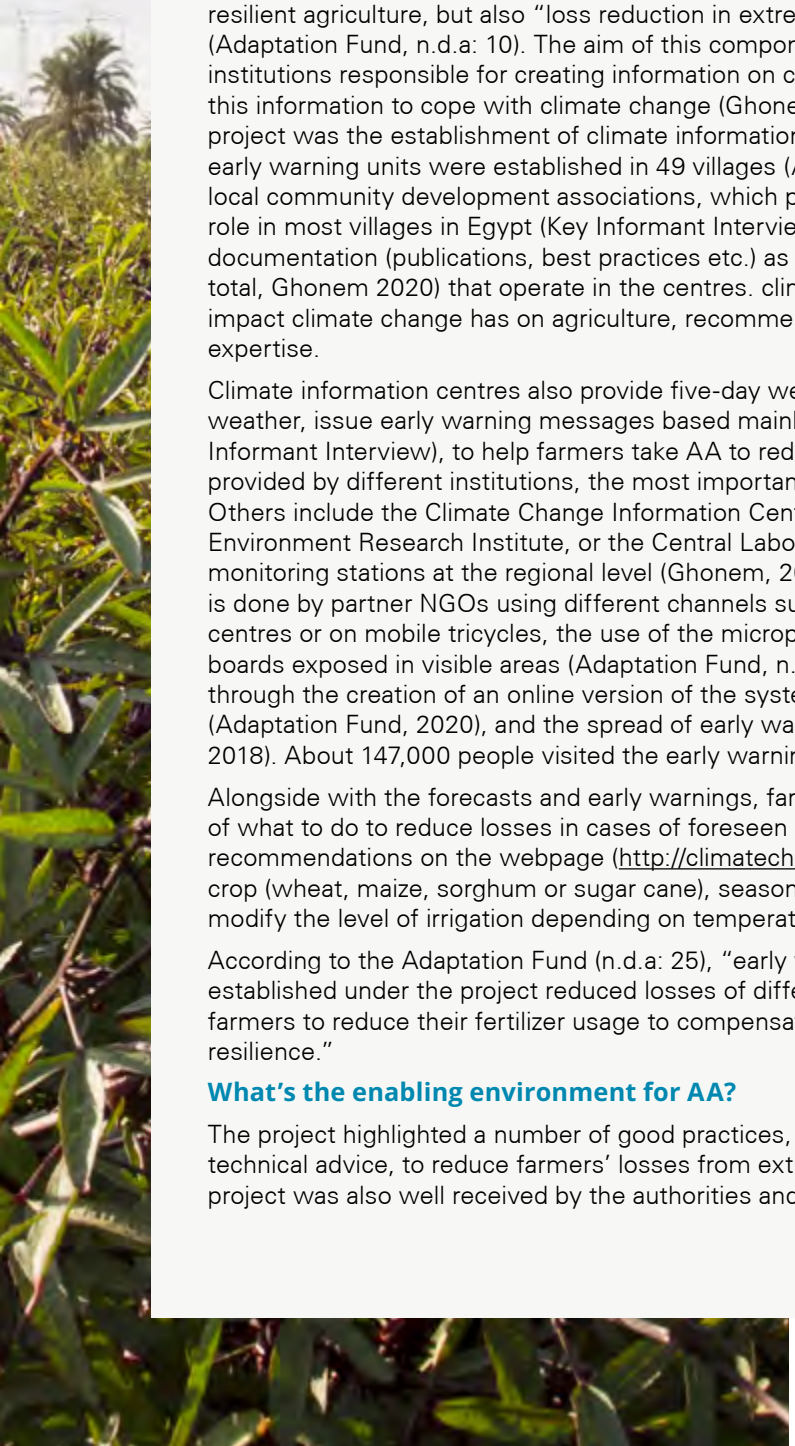
Climate information centres also provide five-day weather forecasts and, in the case of extreme weather, issue early warning messages based mainly on meteorological data and thresholds (Key Informant Interview), to help farmers take AA to reduce losses. Climate information and EWSs are provided by different institutions, the most important one being the Egyptian Meteorological Authority. Others include the Climate Change Information Centre, the Institute of Field Crops, the Soil, Water and Environment Research Institute, or the Central Laboratory for Agro-Meteorology which has climate monitoring stations at the regional level (Ghonem, 2020). The dissemination of early warning alerts is done by partner NGOs using different channels such as loud speakers on the climate information centres or on mobile tricycles, the use of the microphones in village mosques and churches, or sign boards exposed in visible areas (Adaptation Fund, n.d.a). Smart phones are also a major channel, through the creation of an online version of the system – first on a website and later with Android (Adaptation Fund, 2020), and the spread of early warning messages through SMSs (Adaptation Fund, 2018). About 147,000 people visited the early warning website (Ghonem, 2020).

Alongside with the forecasts and early warnings, farmers receive technical recommendations of what to do to reduce losses in cases of foreseen extreme weather events. Farmers can find recommendations on the webpage (http://climatechange-eg.org/Instructions.aspx), depending on the crop (wheat, maize, sorghum or sugar cane), seasonal calendar and location. For instance, farmers can modify the level of irrigation depending on temperature (Project on Climate Change, 2017).

According to the Adaptation Fund (n.d.a: 25), "early warnings provided to farmers through the channels established under the project reduced losses of different crops by 60 percent. This, in turn, supported farmers to reduce their fertilizer usage to compensate for losses, which helped to increase household's resilience."

What's the enabling environment for AA?

The project highlighted a number of good practices, including the use of EWSs, supplemented with technical advice, to reduce farmers' losses from extreme weather events (Adaptation Fund, 2020). The project was also well received by the authorities and the local population. According to the mid-term



evaluation (Ghonem, 2015), this might be due to the fact that, at the beginning of the project, Southern Egypt was undergoing a major heat wave which strengthened the credibility and adoption of the project among farmers.

Stakeholder engagement was also key to the success of the project, which involved close collaboration with the Egyptian Meteorological Authority. The project allowed the capacity of governmental staff and local academic institutions to be built up. And, in order to make farmers and communities key partners, the mid-term evaluation of the project suggested the creation of farmers' organisations to act on markets (Ghonem, 2015).

What barriers prevent AA from happening, and how are these being addressed?

A main barrier for this kind of project is the lack of knowledge on climate change adaptation, early warning and AA in Egypt (Key Informant Interview). However, the climate and environmental challenges Egypt faces require action to be taken, and systems for early warning and AA are likely to become more refined and more effective.

Moreover, the inception of the project was delayed for a year due to recurrent political changes (Adaptation Fund, 2020). Political instability and lack of accountability may be a major barrier to scale up AA. Weak local NGOs were also a constraint identified by the project completion report (Adaptation Fund, 2020).

Eventually, while the dissemination of early warnings, weather forecasts and technical recommendations to beneficiaries through a website and mobile application has reached many farmers, most are not internet users and were not aware of the website (Ghonem, 2020). The use of other means (such as loudspeakers or signs) is therefore necessary and has efficiently reached farmers. The online EWS was mainly used by extension workers, NGOs staff and leaders (Ghonem, 2020).

To what extent is AA institutionalised within government systems and operating at scale? What opportunities and entry points exist to strengthen AA?

The project successfully strengthened the monitoring and early warning capacity of climate stations in the targeted governorates, notably through training and provision of computer materials (Ghonem, 2015). The maintenance and operation of the EWS was transferred to the Ministry of Agriculture and Land Reclamation, in collaboration with the Egyptian Meteorological Authority, after the end of the project (Adaptation Fund, 2020) and they are willing to expand it in terms of indicators, crops and areas (Ghonem, 2020; Key Informant Interview). However, the government did not, at the end of 2020, allocate funds for the climate information centres (Ghonem, 2020).

The implementation of AA within the project was initially made possible by strong dialogue and commitment from national and local actors, such as the Community Development Associations and their volunteers, ensuring ownership (Khalil, 2017; Key Informant Interview).

The project has already been replicated in other villages (Adaptation Fund, 2016) and individually by other farmers (Adaptation Fund, 2018), indicating institutionalisation and ownership of the system, as well as potential for scaling it up.

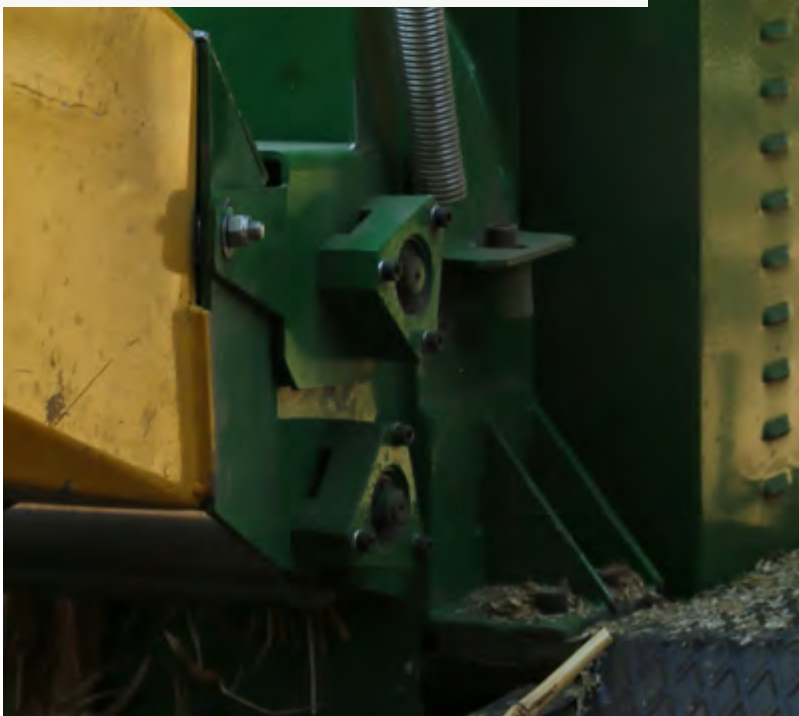


Photo: WFP/Omnia Elzahar

Spotlight on: Anticipatory action for livelihood protection in Sudan

Early warning early action for livelihood protection

Over the last two decades, Sudan has recorded several droughts (UNEP, 2020). The total area considered "drought prone[21] in Sudan is about 69,000 sq. km and this area produces 90 percent of the cultivated food crops and 85 percent of the firewood. Over 70 percent of Sudan's population lives in rural areas, depending on agriculture and livestock for livelihood" (Sudan National Council for Combating Desertification, 2018:26). Since agriculture is mostly rain-fed, climate variability plays a major part in Sudan's food security and the livelihoods of vulnerable groups such as pastoralists who rely on short growing seasons that depend on seasonal rains (FAO, 2020c).

In 2017, an FAO-led EWEA pilot system was put in place to mitigate the impact of drought on agro-pastoralist livelihoods in the wilayats of Kassala in Eastern Sudan and North Darfur in Western Sudan (FAO, 2019a). A Food Security Technical Secretariat (FSTS), under the Ministry of Agriculture and Irrigation, was created with FAO and European Union (EU) support to monitor information on "the food security of households, body conditions of livestock and their movements, animal and plant diseases and the availability of water" (FAO, 2019a:2). A risk and vulnerability analysis was also conducted, and soft and scientific triggers were developed.

The EWS was built on a triangulation of information from local, regional and global information systems (e.g. the SMA, WFP, FEWSNET and IPC). Indicators[22] were selected and combined, depending on the time of monitoring, culminating in the establishment of a threshold that would trigger action (REAP, 2020).

In August 2017, the EWS started to show signs of drought in Kassala, one of Sudan's most vulnerable states with a population of 1.8 million (see *Figure 5* for an overview of rainy and agricultural seasons in Sudan). The indicators – unusual livestock movement and extended dry spells – rose above key thresholds. Later in September and October another indicator – price of sorghum – rose above the annual average price.

In October, AA was triggered as a rapid needs assessment both confirmed deteriorating conditions and helped to identify potential interventions to protect pastoralist livelihoods. US$400,000 was released through the SFERA early action window to support 5,000 households[23] targeted for early action interventions. These interventions included vaccinating and deworming 30,000 livestock, distributing 600 tonnes of animal feed, providing 30 tonnes of mineral licks and training on the benefits of destocking. Other actions included: the rehabilitation of shallow wells and water-points (hafirs, etc.) for livestock and water access for nearby cultivation; distribution of improved varieties of sorghum, tools and inputs (fertiliser and weed control products); home gardening cultivation linked to training on food processing and preservation techniques; and support to herders of small ruminants through livestock interventions (animal health treatment, vaccination, provision of feed) (FAO, 2019a).

In May 2018, when the drought peaked, FAO was able to mobilise over US$1 million of additional funds towards a response.[24] The benefit cost ratio was calculated at 1:6.7 which means that, for every US$1 spent on early action interventions, there was a return of US$6.7 (FAO, 2019a).

What is the enabling environment for AA in Sudan?

Although declaring drought is generally a politically fraught process, AA has suffered less from government interference because it is focused on reducing and mitigating future impacts rather than requiring declarations of actual drought situations (Key Informant Interview). The partnership with the Food Security Technical Secretariat in Kassala played an important part in the success of the pilot, because it provided "vital information on the food security of households as well as the body conditions of livestock and their movements, animal and plant diseases and the availability of water". (FAO, 2019a:1). Building on the lessons of the pilot, in 2020 WFP and FAO together with the secretariat

21 A year is considered a 'drought year' when less than 75 percent of normal rainfall falls. A drought-prone area is defined as one in which the probability of a drought year is greater than 40% (Sudan National Council for Combating Desertification, 2018 :25).

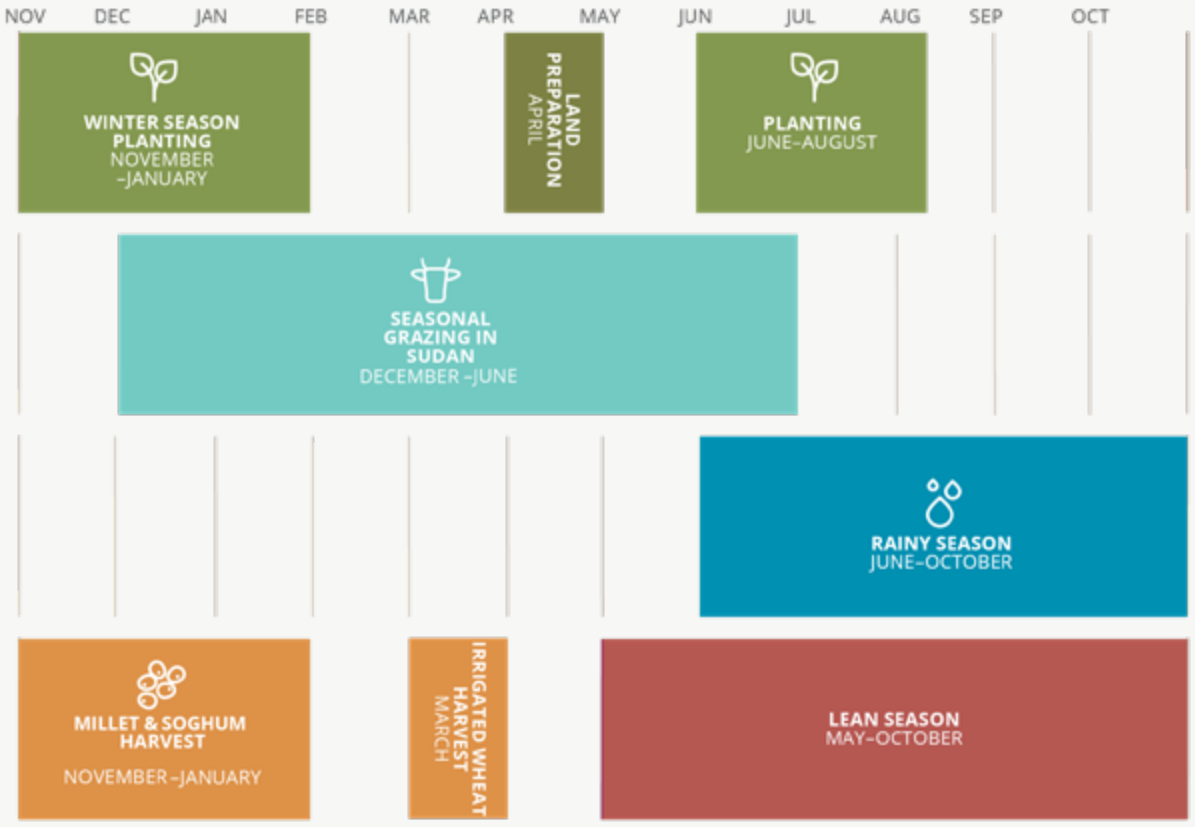
22 IPC - Current or Projection; Global Acute Malnutrition - Current; Sorghum (Fetreita - Retail – Sudanese Pound/Kg) Relative price increase from previous month; Sorghum (Fetreita - Retail – Sudanese Pound/Kg) - Price value; Terms of Trade (TOT) Goat/Sorghum; Groundwater level; Livestock body condition; Livestock movement; Livestock diseases ; Precipitation forecast - anomalies; El Niño Southern Oscillation (ENSO) Conditions - El Niño; Rainfall Outlook - Sudan Consensus ; Length of dry spell; ASI - Agricultural Stress Index ; NDVI - Normalized Difference Vegetation Index ; Rainfall Seasonal Cumulative ; Plant Pests/Diseases (REAP, 2020).

23 Criteria for beneficiary targeting include: households that rely on livestock and agriculture as their primary livelihood; Households that own or use small size of agricultural land; households that own limited number of animals; low-income households living under the minimum wage; single-parent households, particularly with large families; households receiving limited or no social security benefits; households with limited access to markets; households with children under five years old.

24 European Civil Protection, Humanitarian Aid Operations fund and the Sudan Humanitarian Fund.

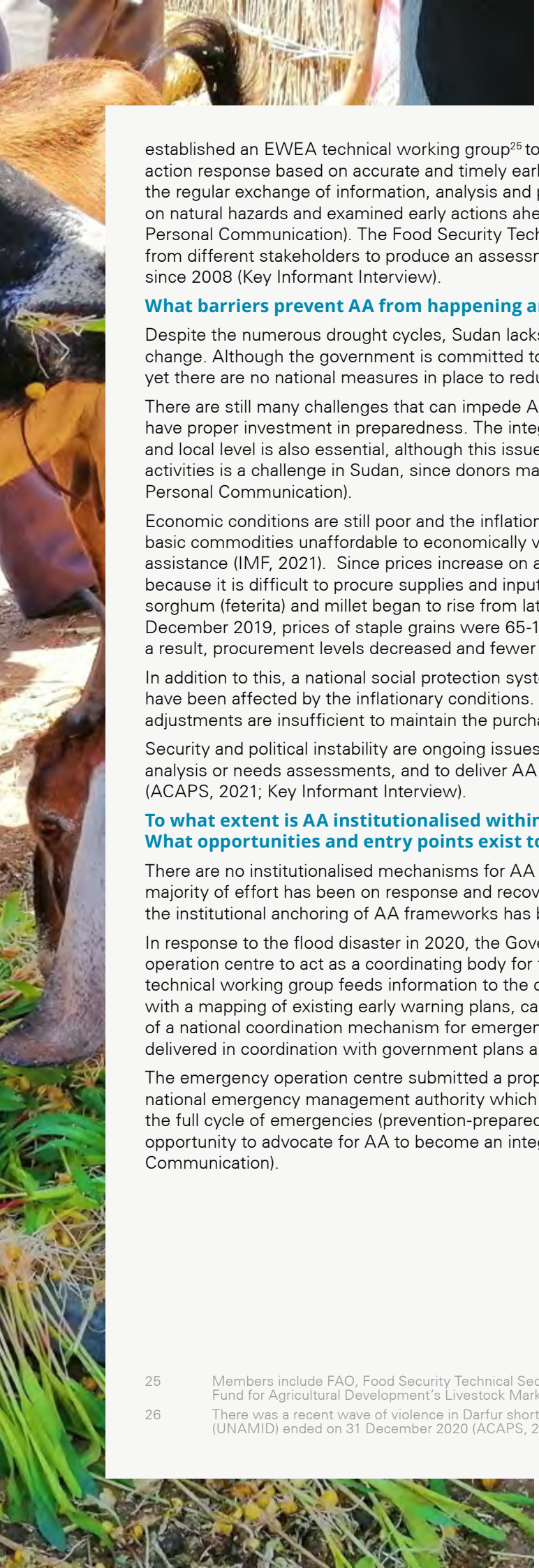
Photo: WFP/Abdulaziz Abdulmomin

Figure 5. Seasonal calendar for a typical year in Sudan



Source: FEWSNET (2013).

Photo: WFP/Abdulaziz Abdulmomin



established an EWEA technical working group[25] to facilitate the implementation of a coordinated early action response based on accurate and timely early warnings. The working group acts as a forum for the regular exchange of information, analysis and possible actions. So far, the group has focused mainly on natural hazards and examined early actions ahead of the flood season and desert locusts (WFP Personal Communication). The Food Security Technical Secretariat is in the process of collecting data from different stakeholders to produce an assessment of the number of people affected by droughts since 2008 (Key Informant Interview).

What barriers prevent AA from happening and how are these being addressed?

Despite the numerous drought cycles, Sudan lacks clear policies to deal with drought and climate change. Although the government is committed to international conventions on climate change, as of yet there are no national measures in place to reduce the risks (UNEP, 2020).

There are still many challenges that can impede AA. In order to implement AA at scale, it is crucial to have proper investment in preparedness. The integration of early action protocols both at the federal and local level is also essential, although this issue is still being defined. Financing preparedness activities is a challenge in Sudan, since donors mainly focus on the humanitarian response (WFP Personal Communication).

Economic conditions are still poor and the inflation rate – one of the highest in the world – has made basic commodities unaffordable to economically vulnerable populations and hampered humanitarian assistance (IMF, 2021). Since prices increase on a weekly basis, the delivery of aid is impacted because it is difficult to procure supplies and inputs (OCHA, 2020d). "Prices of locally produced sorghum (feterita) and millet began to rise from late 2017 and continued the increasing trend in 2019. In December 2019, prices of staple grains were 65-130 percent higher, year on year" (FAO, 2020c: 2). As a result, procurement levels decreased and fewer people received assistance (OCHA, 2020d).

In addition to this, a national social protection system is only just emerging. Cash transfer programmes have been affected by the inflationary conditions. Although monthly disbursements have increased, the adjustments are insufficient to maintain the purchasing power of the beneficiaries (OCHA, 2020d).

Security and political instability are ongoing issues. It is difficult to gain access to conduct vulnerability analysis or needs assessments, and to deliver AA in the remote and conflict affected parts of Sudan[26] (ACAPS, 2021; Key Informant Interview).

To what extent is AA institutionalised within government systems and operating at scale? What opportunities and entry points exist to strengthen AA?

There are no institutionalised mechanisms for AA within the Government of Sudan at present, and the majority of effort has been on response and recovery (WFP Personal Communication). Nonetheless, the institutional anchoring of AA frameworks has been progressing in Sudan in recent years.

In response to the flood disaster in 2020, the Government of Sudan established an emergency operation centre to act as a coordinating body for the response. The plan is to ensure that the EWEA technical working group feeds information to the centre and that this flow of information, together with a mapping of existing early warning plans, can be considered in decision making. The absence of a national coordination mechanism for emergency management makes it very difficult for AA to be delivered in coordination with government plans and activities.

The emergency operation centre submitted a proposal to the Prime Minister's Office to establish a national emergency management authority which would be the responsible entity for coordinating the full cycle of emergencies (prevention-preparedness-response-recovery). This could be a good opportunity to advocate for AA to become an integral part of the authority's mandate (WFP Personal Communication).

25 Members include FAO, Food Security Technical Secretariat, WFP, SMA, OCHA, HAC, FEWSNET and the International Fund for Agricultural Development's Livestock Marketing and Resilience Programme.

26 There was a recent wave of violence in Darfur shortly after the mandate of the UN–African Union Mission in Darfur (UNAMID) ended on 31 December 2020 (ACAPS, 2021).

Key findings and recommendations for anticipatory action in MENA

As AA is nascent within the region, there are multiple challenges that need to be navigated. Despite this, AA represents an important opportunity in the MENA region because of its potential to help avoid and reduce disaster impacts which are expected to become more frequent and intense as a result of climate change and conflict.

While most of our country evidence derives from natural hazard related disasters, there is a need to invest in AA that can operate effectively for conflict and economic shocks too to address the breadth of risks faced by countries in the region. Social protection mechanisms are an important opportunity for AA given their prominence in the region. Such mechanisms could be matured to help bridge the transition from humanitarian to development support, since there is ample scope for them to be adapted to become more shock-responsive and anticipatory. All such changes would align with the regional and global shift to adopt risk-informed approaches to humanitarian and development action, to evolve risk finance architecture to better reflect current and future risk trajectories, and to take heed of current crises such as Covid-19 to better finance and action risk management to a range of threats.

Key Findings

Outlined below are eight key findings on the state of play of AA in the MENA region. Findings across the component parts of AA, along with examples from countries included in this study, are summarised in Table 1.

1 In the region, efforts are being made to enhance forecasting andrisk information. However limited capacities, coordination and a lack of translating early warning information into early action is evident.

Despite progress in strengthening EWSs and the capacity of national hydro-meteorological services, countries such as Jordan, Tunisia, Morocco, Lebanon and Egypt still face challenges in taking early action based on forecasts. Lack of coordination and data sharing across institutions, gaps in forecasting, weak data landscapes and limited resources remain major barriers to addressing predictable disasters and crisis. Inadequate communication and dissemination of information are also routinely a limiting factor preventing the use of existing early warning information to inform and trigger AA. In other cases, the lack of involvement of critical stakeholders and knowledge brokers prevents a more effective translation of early warnings into adequate and timely action.

2 Important foundations for risk management are not in place in many countries in the region, which presents a challenge for advancing AA.

There are multiple reasons why basic foundations such as data, DRM frameworks, action plans and experience are missing. On the one hand, this includes the inherent complexity involved with analysing multiple, interdependent risks and their potential impact, and translating this complexity into actionable policies, frameworks and plans. On the other hand, economic stagnation, lack of investment and political turmoil means many countries have not been able to invest the needed infrastructure, expertise and political prioritization that would enable more effective DRM systems.

Without such foundations in place, advancing AA will face additional challenges, and arguments about the benefits of acting earlier may not hold much sway in contexts where basic risk management is not in place. In conflict and humanitarian contexts, where even essential services and needs are unmet, enhanced AA systems may seem a step too far. In these settings, simplified and phased approaches to AA will likely be required, where a starting point may be integration of AA within humanitarian investments/interventions, progressing to support national disaster risk governance capacities and institutions. This would effectively be a humanitarian-development nexus approach, with a view towards full government ownership of the design, financing and implementation.

3 Despite the nascent state of AA in the region, a continuum of options is available that will help advance AA, ranging from incremental changes to full reform of disaster risk management systems.

In the region, efforts to make incremental changes include small pilots being tested to enhance ex-ante action for the most prominent hazards. In some countries, disaster policy is being adjusted to include

greater recognition of the component parts of an effective anticipatory system, such as increased forecasting and early warning. Efforts are also underway to place greater emphasis on understanding changing patterns of vulnerability across a range of hazards and threats. Options to further support the design and delivery of AA in the region include allocating funding to expand social protection systems to incorporate shock-responsive components, as well as revisions and testing of existing contingency plans to accelerate delivery of preparedness and response operations on the basis of forecasts.

More systemic changes would involve: a complete review of a country's risk management system to identify areas requiring complete restructure; an overhaul of the way funding is allocated with dedicated approaches to how ex-ante actions can be financed; or a new set of legislative and regulatory frameworks with accountability mechanisms to ensure AA becomes part of the social responsibility of states to citizens.

While this is not a comprehensive representation, it illustrates the wealth of opportunities and ongoing experiences in the region to design, develop and implement elements of AA as part of a national risk management system.

4 Conflict contexts in the region present additional challenges to advance AA, particularly as institutions and systems that provide a critical basis for AA have been significantly weakened by protracted conflict, political change or contestation.

Multiple countries are facing armed conflict and crisis which present their own set of complex challenges in accelerating a DRR and AA agenda. For example, inYemen, previously well-established systems such as weather monitoring or social protection systems have been heavily impacted by conflict and in some cases ceased to provide services altogether. Evidence of the international community attempting to re-establish and preserve the institutional foundations can be seen, but a systemic shift from a reactive and ad hoc disaster response towards a greater focus on AA is a secondary priority in these contexts given already weak and overstretched institutions.

5 Some progress has been made to integrate AA elements into humanitarian response planning.

There is growing recognition globally and regionally of the need to better integrate AA into operational responses in fragile and humanitarian contexts, in order to help reduce disaster impacts. Some countries in the region have integrated elements of AA and risk analysis into humanitarian response plans, which have potential for replicability and relevance across the region.

For example, Yemen's Humanitarian Response Plan (HRP) integrates hazard and exposure information from the Index for Risk Management (INFORM) to assess the level of disaster risk. There are opportunities for such processes to be adopted by other country HRPs where this is currently not standard practice, as in Sudan. Similarly, lessons from Iraq and Yemen on adapting existing national social protection systems to channel humanitarian cash-based payments and to shadow pre-existing social policy landscape respectively can be adapted to inform the design of future social protection and safety net interventions that actively seek to build on pre-existing social infrastructure. While practical steps such as the better integration of multi-hazard risk assessments into HRPs are important, more structural shifts in how humanitarian, development and peace interventions are designed, financed and delivered are arguably required to enable AA at scale.

6 Limited coordination across and beyond government institutions, and insufficient understanding of available capacities, are undermining AA operationalisation.

In the region, limited coordination and collaboration between ministries, agencies and institutions has been observed across components of AA including forecasting and risk information, planning, financing and delivery. Gaps and overlapping mandates also hinder progress in an area that depends on reliable and efficient coordination of stakeholders. In Lebanon, for instance, almost all ministries have response plans and operations rooms for relevant hazards. However, limited coordination creates gaps and overlaps in mandates.

This is a potential bottleneck for addressing predictable risks through AA, as well as for the design and effective implementation of component parts of AA such as EWSs, which require integration of expertise and collaboration among stakeholders.

7 There are a number of examples across the region of components of AA being enhanced through access and use of climate funds.

This is positive, as it provides a greater diversity of external funding opportunities to address climate and disaster risk, and in many cases – such as enhanced capacity and infrastructure to conduct risk assessments or EWSs – directly contributes to strengthening the foundations of AA. For example, there have been opportunities in the region to leverage climate finance for AA components such as the Green Climate Fund in Sudan and Adaptation Fund in Egypt.

That said, climate finance must not be seen as a panacea for the current funding and delivery challenges of AA, such as in risk assessment and forecasting, EWSs or plugging the financing gaps in risk management. In practice, the access to and use of climate finance is very limited in fragile or conflict-affected contexts. Eligibility criteria dissuade policymakers from using such finance in countries without functioning democracies and with low institutional performance (Neaverson et al., 2019; Peters et al., 2020). In the short term, climate finance is not a solution for states whose current public

finance management is woefully short of the standards required to access international climate funds. However, there is a wealth of historical experience on what it takes to strengthen public financial management reforms in fragile states (Hedger and Krause, 2012), how donors can support those reforms (see Gulrajani, 2016) and, more recently, climate funds have dedicated resources to help build state financial and administrative systems to meet the criteria required to access funding.

8 There are existing initiatives, processes and upcoming opportunities where international agencies, regional bodies and donors can engage with and invest in to advance AA in the MENA region.

There are clear opportunities to leverage existing systems for AA, for instance, building on established crisis response coordination structures to plan and implement AA, and / or expanding on social protection programmes and mechanisms to deliver anticipatory assistance to people at risk. Currently, Jordan, Iraq and Lebanon are all undergoing progress on national policy planning processes such as the adoption of national DRR Strategies and Response Plans, that provide an entry point for the development on policy frameworks that can embed AA. In addition, a range of national level planning processes, particularly government policy planning processes, budget support planning, as well as UN assistance frameworks, such as the UN Sustainable Development Cooperation Frameworks (UNSDCF) and Humanitarian Response Plans (HRPs), are entry points which allow planning for and investing in AA. As part of these processes, important opportunities exist to embed a longer-term vision in relation to AA, even in circumstances where these frameworks primarily focus on shorter term interventions.

Regional level forums and high-level events, such as the Arab Sustainable Development Week (ASDW), the Arab Sustainable Development Forum (ASDF) and the Arab Regional Platform for DRR are venues where advocacy and technical discussions can take place to consolidate consensus, raise awareness about AA, and where the value proposition of acting early to manage risks can be presented.

Globally, the Risk Informed Early-Action Partnership (REAP), the InsuResilience Global Partnership, and the Anticipation Hub[27] initiatives have also created further opportunities for collaboration and learning to interested countries in the region to manage risks with anticipatory and forecast based approaches.

Recommendations

The following recommendations build on, and aim to address, the key findings of this report as summarised above:

1 Enhancing forecasting and early warning systems to enable timely action is relevant for the MENA region, and should be part of an agenda that accelerates and scales up anticipatory action.

The arid climate of the MENA region, where extreme weather and climate events are increasing in frequency and intensity, provides an important imperative for effective EWSs to support timely action. Significant investments are needed in the foundational aspects of forecasting and risk analysis, particularly data availability, analysis capacity and coordination among stakeholders, which would provide a basis from which more capacity and experience can be generated.

These efforts should be anchored already existing structures, which may include government DRM and social protection information systems, as well as humanitarian platforms and mechanisms that facilitate targeting for assistance and response. These can then be leveraged to support the systematic integration and mainstreaming of AA. It will be critical for governments and local authorities to be at the centre of these efforts in order to provide ownership, links to national systems and longer term financial sustainability.

2 Increasing awareness and a better understanding of benefits, costs and opportunities of anticipatory action will be necessary in order to integrate in into broader risk management efforts in the region.

While there is a general awareness and recognition of the need to improve DRR, there is limited progress in MENA countries to invest in pro-active disaster risk reduction, risk management and preparedness. Efforts at all levels are needed to establish the added value of investing in AA as part of DRM in more detail, and to identify specific opportunities and practical entry points in each country.

Robust and contextualised cost-benefit analysis and return on investment studies would help to quantify these opportunities for national finance ministries and development partners. If pursued collaboratively, the process of applying economic analysis can act as a convenor in itself, helping relevant stakeholders grasp investment costs and returns as well as the potential value of shifting towards more ex-ante approaches.

In alignment with the growing global momentum on AA, identification of champions in the region could serve as a basis for sharing experiences, knowledge, resources and technical expertise.

Advocacy and collaborative learning with national and sub-national institutions about what AA looks like

27 See for instance the Anticipation Hub's regional resource pages for MENA here: https://www.anticipation-hub.org/experience/regional-updates/middle-east-and-north-africa (English) and https://www.anticipation-hub.org/experience/regional-updates/middle-east-and-north-africa-arabic (Arabic)

Table 1. Indicative status of anticipatory action components in the region

RISK INFORMATION & FORECASTING

1. **Despite gaps in the capacity** of national hydro-meteorological services, weather and climate forecasting is maturing.
2. **Overlapping mandates, along with limited exchange of information** across institutions within and beyond government, hamper multi-hazard risk analysis and forecasting, undermining the effectiveness of EWSs.
3. **Collaboration across government institutions is critical** for translating early warnings into AA.
4. **EWSs for meteorological and hydrological hazards exist in the region** (e.g. in Tunisia, Jordan, Sudan, Lebanon, Egypt, Morocco). Forecasting capacities for floods and droughts are improving in those countries.
5. **MHEWSs are in their early stages** (e.g. some progress in Sudan, Lebanon).
6. **For contexts where conflict is prevalent and/or prolonged,** the institutional capacity and financing required to develop forecasts, risk assessments and EWSs is limited (e.g. Yemen, Syria, Iraq).

PLANNING

1. **In the MENA region, there is evidence of planning for DRM,** and to some extent AA, at national and sub-national levels.
2. **New disaster policies and strategies (e.g. in Jordan, Tunisia, Lebanon) can strengthen foundations** for AA, but in many cases legal and regulatory frameworks are stalled in ratification processes or require updating (e.g. in Lebanon, Sudan, Tunisia).
3. **Many countries lack a comprehensive DRM policy that incorporates AA,** or regulatory architecture that enforces regulations and codes uniformly.
4. **Disaster events can act as a driver of AA**, through the review and bolstering of disaster risk governance institutions and mechanisms, policies and plans.
5. **Across many countries, government-led and external humanitarian plans** provide important avenues for AA planning and action.
6. **Coordination across relevant departments, and collaboration** with a broad range of stakeholders, is critical for AA.
7. **In some countries, the complex and changeable political arrangements** and sub-national conflict situation are reflected in the complexities of the landscape for disaster risk governance, and present barriers to advancing planning processes (e.g. Yemen, Syria).

FINANCING

1. **Some MENA countries have strategies or legislative frameworks t**hat stipulate the allocation of government budget to DRR and management systems, which provides a basis for the implementation of AA (e.g. Jordan, Egypt).
2. **Overall, DRR, DRM and preparedness remain largely underfunded in the region.**
3. **Government emergency funds at national or sub-national level exist** in some countries, though these are largely responsive rather than anticipatory.
4. **In a number of countries, crisis response plans, RRMs and country-based pooled funds** are supporting ongoing humanitarian responses (e.g. Lebanon, Iraq, Syria, Yemen). In part, these already provide the flexibility to respond to sudden onset disasters within a larger crisis situation.
5. **Climate finance, i**ncluding through multilateral climate funds, has contributed to progress across the component parts of AA, for instance funding improvements in forecasting and EWSs.

DELIVERY

1. **While many countries across the region have well-described institutional structures for DRM,** capacity to deliver on their mandates, or to enact ideas and intentions, is often constrained by lack of technical capacity, sufficient, reliable and/or flexible financing, and/or mandated authority. This is particularly problematic when needing to instruct other sectors/ministries to work collaboratively together (e.g. Yemen, Egypt, Iraq).
2. **Partnerships with stakeholders t**o promote and deliver AA, including through Red Cross/Red Crescent national societies, are critical (e.g. in Lebanon, Syria, Egypt).
3. **Lack of research and robust MEL frameworks for AA** in the region.
4. **Ongoing advancements in social protection mechanisms could offer a key avenue** to pursue delivery of AA (e.g. Jordan, Tunisia, Iraq).
5. **Many of the established social protection programmes in the region are not shock-responsive, and** none were found to be anticipatory, although may have the potential to be adapted to advance AA.

in the context of government DRM systems will be needed to enhance understanding, awareness and relevance of AA at the policy level. Similar processes and briefings will be required with international and national stakeholders through high-level dialogues and platforms.

3 For anticipatory action to be effective, foundational investments are needed in relation to risk management, particularly on policies, planning and coordination to facilitate anticipatory action to mitigate predictable risks.

Areas for support include the integration of AA within comprehensive legal and political frameworks and policies for DRM, as well as plans for disaster preparedness and response. This also includes ensuring timeliness and enhanced collaboration process across ministries and agencies (e.g. on data collection and sharing), for instance through SOPs and contingency plans.

With foundations in place for new disaster strategies and policies for action on DRM, including those tied to pre-existing humanitarian planning emerging across the region, important opportunities include better coordination across ministries and sharing lessons across the region for embedding AA capacity building into humanitarian plans and action. There is also a need to accelerate AA planning as an integral part of emergency response plans, which would allow complementary efforts that strengthen existing systems towards more anticipatory and preventative risk mitigation actions.

As a way forward, governments, authorities and relevant supporting stakeholders should invest in fundamental aspects of risk management including formalising decision-making processes, policy development and standardising operational procedures. In view of the findings at sub-national levels and despite their complexities, actors should support sub-national planning initiatives, in particular, to make progress on aspects of risk management in the absence of national frameworks. This would help identify and test localised opportunities, and could strengthen local ownership of AA, particularly in conflict contexts that are confined to sub-national levels facing fragility and limited governance.

4 A specific thrust of support is required for capacity-building and decision-making processes at national levels to strengthen the use of early warning and forecasting for anticipatory action.

Early warning and forecasting capacities for risk information and hazard analysis are improving overall in the region, but further investment is needed to strengthen the capacity of governments to undertake socioeconomic vulnerability assessments and develop multi-hazard information management systems. Investments are also needed to establish stronger technical infrastructure in national hydro-meteorological services, institutional capacities and delivery systems across institutions and countries that currently undermine the effectiveness of AA.

For these investments to be effective, however, they need to be equally matched by efforts that strengthen and develop the capacity of national and sub-national coordination structures to translate early warning into early action in the region. This will require the support of multiple stakeholders who can assist in knowledge sharing and dissemination of information for early warnings, and the strengthening of coordination and collaboration across government agencies, international organisations, financial institutions and non-state actors, which is currently a gap in many countries.

5 In the MENA region, greater emphasis is needed to understand and integrate conflict and economic shocks as key risks to be addressed by anticipatory action.

Conflict and economic shocks are key drivers for exacerbating existing vulnerabilities in the region. The region is well placed to act and lead on innovations that can help identify relevant triggers and establishing thresholds for decision-making and AA mechanisms that are relevant to these shocks and stressors.

Given the risk profile and dynamic conditions of conflict and violence within the region, it would also be a good place to conduct further investigations into the barriers, opportunities and entry points for AA in conflict contexts. The MENA context offers an entry point for exploring new frontiers of anticipatory programming that meets the needs of the region, and to adapt to emerging challenges by considering vulnerability, exposure and risks to a range of often interconnected and simultaneous threats.

6 Existing systems (such as social protection and humanitarian safety nets) that support vulnerable groups should be further explored as mechanisms to deliver anticipatory action.

In the region, social protection is an important avenue for AA with the potential to adapt existing and emerging systems that are currently not shock-responsive or anticipatory. There is an opportunity for AA to take advantage of the reform agenda for social protection currently underway in many countries in the region. This includes expanding on the range of shocks and threats addressed, and bringing support forward (to be more pre-emptive) through greater attention to longer term trends and dynamics over time in vulnerabilities and risks.

Humanitarian assistance and the HRP development process also offer an opportunity to consider AA. This requires not only a better integration of multi-hazard assessments into humanitarian programme planning and design, but a structural shift in how humanitarian, development and peace interventions are aligned. Doing so will allow not only these communities jointly to meet immediate needs, but will contribute to addressing underlying root causes and vulnerabilities.

These existing systems and operations provide excellent opportunities for governments, international

organisations and financial institutions to strengthen delivery for AA and, while doing so, address well-known barriers to scaling up AA, such as limited technical capacities, insufficient financing, overlapping or unclear mandates, and limited collaboration across sectors, ministries and other related stakeholders.

7 A mixed financing approach is likely needed for anticipatory action, and decision-makers in the region should actively engage in global funding opportunities and negotiations to highlight region-specific requirements and vulnerabilities.

AA requires investments in strengthening the underlying foundations of its component parts to ensure the infrastructure is in place to plan, trigger and deliver AA on time. In addition, it needs resources that can be channelled through this infrastructure to implement actions once a disaster is anticipated.

In cases where governments already have disaster contingency funds at national or sub-national levels, international organisations may support funds that are currently largely reactive to become more anticipatory. Depending on the existing legislation for governments to manage the financial consequences of disasters, this may require updating or developing new legislation to incorporate financing mechanisms that can cater to AA timelines and windows of opportunity for action.

In countries in the region where crisis response plans and pooled funds such as CERF are supporting ongoing humanitarian responses, there is further potential to advance and contextualise frameworks that support anticipatory humanitarian action. Such efforts should build on learning from the ongoing piloting and evaluation of CERF AA, for example, in Somalia.

To strengthen the foundations for AA, there is also an opportunity to further explore the use of climate finance, including through multilateral climate funds, for instance in the areas of enhancing weather and climate forecasting and EWSs.

Importantly, AA should not create parallel systems or crowd out funding for adaptation, DRR and preparedness more broadly. Instead, it should be regarded as complementary to larger investments in these areas, filling specific gaps where risks cannot be effectively reduced, and where forecasting, financing and delivery mechanisms can facilitate the reduction or mitigation of impacts once a disaster is imminent.

8 Coordination of anticipatory action mechanisms across key ministries and other institutions at national and sub-national levels is critical and may be supported by regional partnerships.

Support to governments for enhancing AA capacities at national levels will need to be coordinated and coherent in order to be effective. Integrating AA within government preparedness planning, or the development of national-level SOPs for AA (in the context of wider DRM and preparedness), represent key processes to assist stakeholders in ensuring clarity and coordination on the key components of AA.

Existing partnerships at regional level should be built on to help drive momentum and coordination on AA. A dedicated regional network on AA could facilitate exchange of experiences, lessons learned and evidence between MENA countries, as well as between the regional and international level. Such a network would help to bolster the representation of the region in international discussions and fora on this topic. This could build on the experiences of already existing communities of practice and Regional Dialogue Platforms in other parts of the world, e.g., Latin America and the Caribbean, Africa and Asia Pacific.

9 Processes and systems to support improvement in design and delivery of anticipatory action, and contribute to help demonstrating results, will need to be strengthened.

As the region advances on AA, investments will be needed to set up frameworks and processes that ensure monitoring, evaluation and learning for AA. Specific evidence generation will also be required to better understand how relevant shocks and stressors can be addressed by AA in the region, including in terms of fine-tuning and further developing triggers, establishing thresholds, and selecting appropriate and timely action and assistance delivery mechanisms in fragile socioeconomic, multi-hazard and conflict contexts. Evidence should involve contextual and robust analysis of the costs and benefits and the return of investment of AA to ensure its appropriateness and value in the region (see also Recommendation 2). Critically, putting learning into practice will require concerted efforts flexibility within AA systems and programmes that allows these to adapt over time. contextual and robust analysis of the costs and benefits and the return of investment (ROI) of AA to ensure the appropriateness and value of anticipatory action in the region (see also Recommendation 2). Critically, putting learning into practice will require concerted efforts flexibility within AA systems and programmes that allows these to adapt over time.

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