

SWIM and Horizon 2020 Support Mechanism

Working for a Sustainable Mediterranean, Caring for our Future

SWIM-H2020 SM EFS-JO-1 “Mainstreaming Drought Risk Management, with a focus on proactive measures”

Methodological steps in developing Drought Risk Management Plans

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Consultation Workshop “Roadmap for developing a Drought Risk Management Plan in the Amman-Zarqa catchment”

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ATKINS

Process for developing Drought Risk Management Plans

Ten-step planning process

(Source: National Drought Mitigation Center, University of Nebraska, USA)

Step 1	Appoint a drought task force
Step 2	Evaluate and revise drought preparedness plan
Step 3	Develop education programs
Step 4	Publicize the drought preparedness plan and build public awareness
Step 5	Integrate science and policy
Step 6	Identify research needs and fill institutional gaps
Step 7	Prepare/write the drought preparedness plan
Step 8	Inventory resources and identify groups at risk
Step 9	Seek stakeholder participation and resolve conflict
Step 10	State the purpose and objectives of the drought preparedness plan

Pima County Drought Management Plan

Step 1	County Administrator to form Drought Task Force and Other Committees
Step 2	State the Purpose and Objectives of the Drought Response Plan
Step 3	Seek Stakeholder Participation and Resolve Conflict
Step 4	Inventory Resources and Identify Groups at Risk/ Vulnerability
Step 5	Prepare/Write the Drought Response Plan
Step 6	Identify Research Needs
Step 7	Integrate Science and Policy
Step 8	Publicize the Drought Response Plan and Build Public Awareness
Step 9	Develop Educational Programmes
Step 10	Evaluate and Revise the Drought Response Plan

Guidance for Developing Community Water System Drought Management Plans

Tennessee Department of Environment and Conservation Division of Water Supply

Step 1	Pre-planning	<ul style="list-style-type: none"> - Authority and Status to Plan - Water system features, characteristics and risks
Step 2	Organizing the process	<ul style="list-style-type: none"> - The Planning Committee, Task Force, Individual or Other Group - Layout of the process & Public involvement and review - Identification of Goals, Objective & Priorities
Step 3	Identify existing plans, partnerships, policies and procedures	<ul style="list-style-type: none"> - Existing Emergency Operations Plans and DMPs - Interconnections, Mutual Aid Agreements and Backup Sources - Ordinances, Policies, Legal Requirements
Step 4	Coordinate with state or regional agencies or	<ul style="list-style-type: none"> - Identify applicable Regional Considerations / Stakeholders - Clarify and address Limiting Factors.
Step 5	Plan the management phases and triggerpoints to those phases	<ul style="list-style-type: none"> - Drought alerts and triggerpoints - Voluntary and Mandatory restrictions - Emergency management
Step 6	Plan for implementation	<ul style="list-style-type: none"> - Monitor water availability and supply - Monitor water demands by user category - Public notices/alerts and plan activation (means) - Compliance and Enforcement
Step 7	Identify the management team – purpose, structure, roles and functions	<ul style="list-style-type: none"> - Establish the team and their function and roles - Activate the team - Records and documentation
Step 8	Review, evaluate and update the management plan	<ul style="list-style-type: none"> - Evaluation after implementation - Updating of the plan

Guidelines for preparation of the Drought Management Plans

Gobal Water Partnership Central and Eastern Europe

STEP 1: Develop a drought policy and establish a Drought Committee.....

Sub-step 1.1 Establish a competent authority

Sub-step 1.2 Recognize drought as a relevant water management issue

Sub-step 1.3 Develop national drought policy and implementation strategy.....

Sub-step 1.4 Adopt a government resolution or appropriate legislation.....

Sub-step 1.5 Establish a Drought Committee.....

STEP 2: Define the objectives of a drought risk-based management policy.....

STEP 3: Make inventory of data for the development of the Drought Management Plan

STEP 4: Produce/update the Drought Management Plan

Sub-step 4.1 Define the content of the Drought Management Plan.....

Sub-step 4.2 Characterise and evaluate historical drought events

Sub-step 4.3 Establish indicators and thresholds for drought classification

Sub-step 4.4 Establish drought early warning system.....

Sub-step 4.5 Develop a programme of measures

Sub-step 4.6 Establish organizational framework for the production, implementation, and updating of the Drought Management Plan

Sub-step 4.7 Identify gaps and uncertainties

STEP 5: Publicize Drought Management Plan for public involvement.....

STEP 6: Develop research and science programme

STEP 7: Develop an educational programme.....

National Drought Management Policy Guidelines: A Template for Action WMO, GWP, NDMC

- Step 1: Appoint a national drought management policy commission
- Step 2: State or define the goals and objectives of a risk-based national drought management policy
- Step 3: Seek stakeholder participation; define and resolve conflicts between key water use sectors, considering also transboundary implications
- Step 4: Inventory data and financial resources available and identify groups at risk
- Step 5: Prepare/write the key tenets of the national drought management policy and preparedness plans, which would include the following elements: monitoring; early warning and prediction; risk and impact assessment; and mitigation and response
- Step 6: Identify research needs and fill institutional gaps
- Step 7: Integrate science and policy aspects of drought management
- Step 8: Publicize the national drought management policy and preparedness plans and build public awareness and consensus
- Step 9: Develop educational programmes for all age and stakeholder groups
- Step 10: Evaluate and revise national drought management policy and supporting preparedness plans

National Legislation & Strategies related to Drought

- The updated **Water Strategy** (2016-2025 National Water Strategy) emphasizes the priority of adaptation and mitigation measures for unforeseen drought **events (MWI, 2016)**.
- The **Agricultural Strategy** (2016-2025) includes drought as a major threat to agricultural production and proposes drought forecasting.
- The updated **Rangeland Strategy** (MOA, 2014) recognizes drought was one of the major factors that have significantly aggravated the deterioration of natural resources and wild life in Jordan's rangeland
- **No dedicated Drought Policy**

National Drought Policy and Strategy

The **goals of Jordan's Drought Management Strategy** are (GoalWASH/UNDP project):

1. **Maximizes the reliability** and resilience and **minimizes the vulnerability** of water-supply system
2. **Improve water availability** during drought events to vulnerable group or sector
3. Enhance mechanisms to **provide water supplies** to affected areas of water shortage **during drought events**
4. **Reduce water demand** and encourage **water conservation** during drought
5. **Reduce drought impacts** to Jordan's economy, people, state assets, cultural and other related losses
6. Continue to maintain and enhance intergovernmental and **stakeholder coordination**
7. Provide **protection for natural resources** from drought impacts
8. Maintain and enhance existing **mitigation measures**
9. Utilize the **endogenous knowledge** of drought management and adaptation
10. Increase **public awareness** on vulnerability to drought and gaining support and solidarity of drought mitigation and adaptation measures

National Level framework for DRMPs

The **overall objective** of the drought management plan (DMP) for Jordan is the establishment of a **comprehensive plan and procedures** that defines the process for managing drought conditions.

The main objective of DMPs is to minimize the adverse impacts on the economy, social life and environment when drought appears
(GoalWASH/UNDP project)

Framework the Amman-Zarqa Drought Risk Management Plan

National Drought Strategy

Monitor: Collect and analyze drought-related information in a timely and systematic manner.

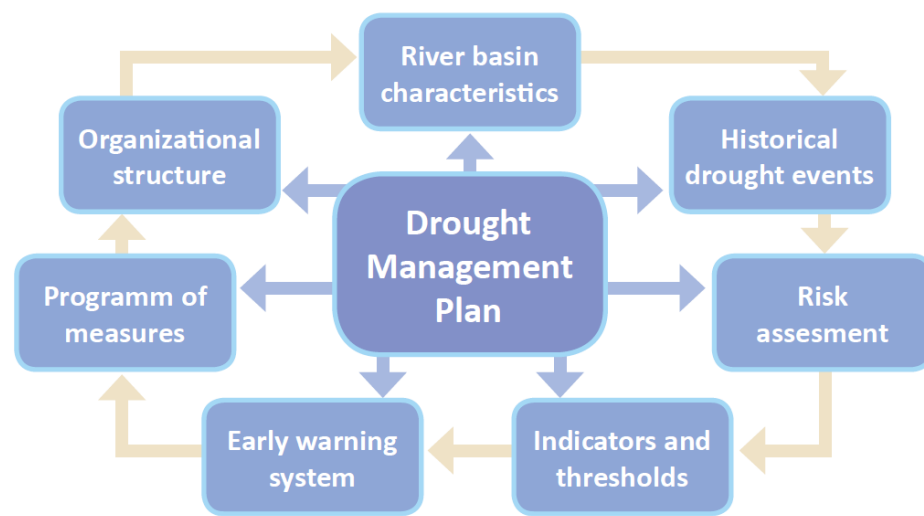
Assess: Assess impacts of the drought on water users and the environment.

Coordinate: Coordinate the drought response plans of relevant agencies and organizations.

Communicate: Communicate accurate information to decision makers and other interested parties

Act: Take coordinated actions to reduce the adverse effects of the drought and assess the effectiveness of mitigation actions being taken.

Prepare: Develop actions to reduce AZ vulnerabilities to the next drought



Elements of a Drought Management Plan



Goals of the AZ Drought Risk Management Plan

AZ DRMP Objectives (for discussion during the Workshop)

Guarantee **water availability in sufficient quantities** to meet essential **human needs to ensure** population's health and life.

Avoid or minimize **negative drought impacts**, by all available means, on the status of water bodies, on the agro-ecosystems, on the ecological flows and quantitative status of groundwater

Minimize **negative effects on economic activities**, (agriculture and industry) according to the priority given by the new established Jordanian Water Strategy (2016-2025).

Address proactive management but also include crisis management

Note: agriculture is an important activity in the AZ basin, and farmers' compensations during droughts are a significant burden to the Government. Thus, more emphasis and a higher priority should be given to the agricultural sector.



AZ DRMP_Governance and Institutions

AZ DRMP GOVERNANCE (for discussion during the Workshop)

WHO?	WHAT ROLE?
<i>e.g. MoWI, MoE, MoAgriculture, MoHealth....</i>	

AZ DRMP_Components

AZ DRMP COMPONENTS (for discussion during the Workshop)

<i>e.g. Objectives/ goals, roles and tasks, characterization of drought, operational indicators, vulnerability assessment, impacts, etc...</i>	

AZ DRMP_Roadmap

AZ DRMP Roadmap (to be discussed during the Workshop)

ACTION	When?	By Whom?	Any constraints foreseen?

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Thank you for your attention.

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